A Survey of Columbia River Basin Water Law Institutions and Policies

Contributor: Michael A. Schoessler, Scott B. Yates, Janet C. Neuman, and Angus Duncan

Edited by Michael C. Blumm and Brett M. Swift

The Northwest Water Law and Policy Project A Project of the Natural Resources Law Institute Northwestern School of Law of Lewis and Clark College Portland, Oregon

Report to the Western Water Policy Review Advisory Commission

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Appendix: Key Features of a Columbia River Governance Proposal

1. Introduction

The Columbia River Basin drains approximately 259,000 square miles in the Pacific Northwest. From its source in the ice fields of British Columbia, the river system encompasses two countries, seven states, and numerous governmental subdivisions of each in its approximately 1,200 mile journey to the Pacific Ocean. The river is touched by a minimum of eight federal agencies, including agencies with divergent missions such as the U.S. Army Corps of Engineers, the Bureau of Land Management, the Bonneville Power Administration, and the National Marine Fisheries Service. In addition, roughly thirteen Indian Tribes and numerous state agencies manage the resource.

All told, dozens of major institutions and hundreds of minor players influence the development of water policy in the basin. For instance, the Corps of Engineers has constructed numerous dams in the basin and regularly dredges the river for flood control and navigation purposes. The Bureau of Reclamation built projects for irrigation; irrigation water now supports agricultural production throughout the semi-arid portions of the basin. And the Bonneville Power Administration sells power from various multipurpose dams in the basin to electricity consumers both in the Pacific Northwest and as far away as Arizona and California. Some of this hydroelectric power supports the aluminum and aerospace industries in the region; these industries located in the Northwest largely to benefit from inexpensive power rates.

Meanwhile, the region's Indian Tribes look to the river for economic, cultural, and religious sustenance. The Tribes continue to assert treaty rights reserved nearly a century and a half ago. To satisfy the federal government's trust obligations to the Tribes, federal agencies must operate the Columbia River system to sustain the fisheries resources which are central to the economic and cultural well-being of the Tribes. In addition, the Tribes need water for irrigation and other economic development.[1]

In addition to the multitude of federal agencies and Tribes in the basin, the states of Idaho, Montana, Oregon, and Washington maintain control of the water resources within their boundaries. The states have primary management responsibility including jurisdiction over both water quantity and water quality issues that affect state waters. The states are using their

[1] The sovereign status of the Tribes and their treaty rights gives them a prominent role in the management of Columbia River Basin water. We recognize that this study is incomplete without this information; we have recently secured information related to tribal water laws and policies that we will incorporate into the study.

authorities in new and creative ways to foster a new generation of water-related initiatives including (1) developing distinct watershed or ecosystem-based programs, (2) transferring significant authority for salmon recovery efforts to local watershed groups, and (3) engaging in collaborative efforts with federal and local governments as well as private groups to restore and protect endangered species.

Of course, it is virtually impossible to list all of the agencies and entities whose actions, or failures to act, have an impact on the resources of the Columbia. In addition to the agencies identified in the study, other key institutions include the public utility districts — particularly in the mid-Columbia reach of the river basin — the port authorities, and the vast range of county commissions, planning authorities, agricultural agencies, soil and water conservation districts, resource conservation and development organizations, and more.

Overlapping jurisdictions with artificial political boundaries are juxtaposed on both the river itself and the sinuous hydrological boundaries of its drainage basin. This fragmented management of a unified resource creates numerous problems, but a basic challenge is simply understanding who does what in terms of river and water management. This institutional study is meant to provide some answers to basic structural questions: Who are the governmental players in the Columbia Basin? What are their missions and how do their legal mandates guide them in accomplishing their goals? How do the institutions fit together to create the "Law of the River" for the Columbia?

In many ways, the Columbia River is no different than any other major interstate river, especially in the west. Common challenges include: (1) management by at least two states and their many political subdivisions, and perhaps even two nations; (2) coping with various federal facilities and a variety of federal land within the basin, including Indian reservations; (3) striving to fulfill treaty obligations; and (4) struggling to meet competing demands for a limited resource. But the Law of the River in each basin has also evolved somewhat differently. Unique institutions have been created to accomplish particular regional goals and solve particularly thorny problems.

For instance, the Colorado River represents a major interstate river with some superficial similarity to the Columbia. Each river drains an approximately 250,000 square mile area, and travels a distance of about 1,200 miles. Both support substantial agricultural economies, provide electricity to millions of people, contain endangered fish species, support

growing recreation economies, and serve metropolitan areas. But the rivers are different in crucial respects; the Columbia carries nearly ten times the water of the Colorado in a given year and supports numerous anadromous fish species that migrate to and from the ocean utilizing the entire river corridor.

Water use conflicts developed early in this century on the Colorado. Consequently, a carefully tailored combination of treaties with Mexico, interstate compacts, Supreme Court legal decisions, and a central role for the Secretary of the Interior tightly governs the river.[2]

On the Columbia, however, bitter conflicts over water use emerged only within the last several decades; as a result, the river was managed almost entirely under general federal and state laws until recent years. In the 1930s, Congress formed the Bonneville Power Administration as a regional federal agency to market the electricity produced by the federal Columbia River dams. But even that step was a narrow one, creating only a single purpose entity. It was not until the late 1960s that the precipitous decline in salmon runs began to draw serious attention.

First, some of the region's Indian Tribes brought litigation to clarify their treaty rights. The litigation established that the treaty rights guaranteed the Tribes half of the harvest, including fish produced at federal and state hatcheries. Second, in 1980, Congress passed the Northwest Power Act. The Act established the Northwest Power Planning Council as a regional body made up of representatives of four states to advise and counsel the various federal and state agencies in their river management activities. The Act required that the system of dams be operated equally for power production and fish and wildlife protection. Third, in 1985 the U.S. entered into a treaty with Canada that governed the harvest of anadromous fish; the existing 1964 Columbia River Treaty between Canada and the U.S. addressed only hydropower generation and flood control. Finally, in the 1990s, the National Marine Fisheries Service listed several salmon runs as endangered under the Endangered Species Act. All of these elements have become critical components of the river management structure.

The Columbia River has thus evolved its own unique story, as the governing laws and institutions have developed in fits and starts over nearly a century.

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[2] For a discussion of the Law of the River on the Colorado River see Charles J. Meyers, *The Colorado River*, 19 STANFORD LAW REVIEW 1 (1966).

This Study describes the institutions and laws that form the patchwork quilt of Columbia River governance. Underneath it all runs the river, a jurisdiction unto itself — a basin, a watershed, with its own natural laws. Who does what on the river? How does it all fit together? These are the questions this institutional study seeks to answer. As the region changes the way it manages its natural resources, the existing roles of the institutions which shape Columbia Basin water policy must be clearly understood.

This study, *A Survey of Columbia River Basin Water Law Institutions and Policies*, prepared by the Northwest Water Law & Policy Project of Northwestern School of Law of Lewis & Clark College, provides an overview of the "Law of the River" of the Columbia Basin. Volume one outlines the legal authority, role, and activities of the primary federal, regional, and state agencies that regulate the region's water resources, and clarifies existing authority and responsibilities. The study includes the following federal and regional agencies: the Corps of Engineers, the Bureau of Reclamation, the Federal Energy Regulatory Commission, the Bonneville Power Administration, the U.S. Forest Service, the U.S. Bureau of Land Management, the National Marine Fisheries Service, the Fish and Wildlife Service, and the Northwest Power Planning Council. The state agencies that manage water allocation, water quality, submerged lands, and the fisheries resource are examined within distinct state chapters; each basin state has developed distinct laws, agencies, and departments that govern these issues.

Volume two contains a critique of the institutional structure in the Columbia River Basin. This critique and evaluation of the existing structure focuses on the myriad entities and governing statutes identified in volume one; it highlights overlapping authority, conflicting mandates, lack of coordination, and other jurisdictional issues.

Volume two also contains a chapter that draws conclusions about the need for institutional changes to improve basin management and outline key principles for reform. Recognizing that better governance institutions and practices are needed to prevent additional harm to endangered species and watersheds, this section proposes one river governance option that could bring about change in the way the region manages its water resources.

2.1 The United States Army Corps of Engineers

The United States Army Corps of Engineers (the Corps), within the Department of the Army,[1] is primarily responsible for day-to-day operation and maintenance of the Federal Columbia River Power System (FCRPS)[2] on the lower Snake and mainstem Columbia Rivers. The Corps' responsibility to manage and operate the dams and reservoirs in the Columbia River Basin includes fulfilling multiple purposes such as flood control, navigation, hydropower, irrigation, recreation and fish and wildlife. The Corps also maintains locks and river channels for navigation, operates fish passage facilities at dams, and administers the federal wetlands development permit program.

(1) Water Management

(A) The Federal Columbia River Power System

The Corps operates twenty-one major federal dams on the mainstem Columbia River, the lower Snake River, and other tributaries to each river.[3] These include five dams on the mainstem Columbia,[4] two dams on upper

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[1] The Corps carries out most of the actions authorized by Congress at federally owned and operated dams in the Columbia Basin under the authority of the Secretary of the Army. These federal Corps projects do not include dams and irrigation projects authorized by Congress for irrigation purposes, which fall under the authority of the Bureau of Reclamation, an agency within the Department of the Interior.

[2] The FCRPS consists of 12 dams operated by the Corps (John Day, The Dalles, Bonneville, Chief Joseph, Lower Granite, Little Goose, Ice Harbor, Lower Monumental, McNary, Dworshak, Albeni Falls, and Libby) and two by the Bureau (Grand Coulee and Hungry Horse) on the Columbia and Snake Rivers. U.S. ARMY CORPS OF ENGINEERS, NORTH PACIFIC DIVISION ET AL., COLUMBIA RIVER SYSTEM OPERATION REVIEW: FINAL ENVIRONMENTAL IMPACT STATEMENT, SUMMARY 2, 46 (Nov. 1995) [hereinafter SOR SUMMARY]. These 14 dams were the focus of the recent Columbia River System Operation Review (SOR); the goal of the SOR was to "develop a system operating strategy and a regional forum for allowing interested parties, other than the [Corps, Bureau of Reclamation, and Bonneville Power Administration], a long-term role in system planning." *Id*.

[3] Dams considered "major" are either the largest projects in the Columbia River Basin or "those that have a significant role in river system management." U.S. DEP'T OF ENERGY, BONNEVILLE POWER ADMINISTRATION, U.S. DEP'T OF THE ARMY, CORPS OF ENGINEERS, NORTH PACIFIC DIVISION, U.S. DEP'T OF THE INTERIOR, BUREAU OF RECLAMATION, PACIFIC NORTHWEST REGION, THE COLUMBIA RIVER SYSTEM: THE INSIDE STORY 10 (Sept. 1991).

[4] Bonneville, The Dalles, John Day, McNary, and Chief Joseph Dams. *See* PHILIP R. WANDSCHNEIDER, WHO CONTROLS THE WATER? MANAGING THE COLUMBIA-SNAKE SYSTEM 23-24 (Jan. 1985).

Columbia River tributaries,[5] four dams on the lower Snake River,[6] Dworshak Dam on the Clearwater River (a Snake River tributary in Idaho), Lucky Peak Dam on the Boise River (a Snake River tributary in Idaho), and eight dams on the Willamette River system in Oregon, which is tributary to the Columbia.[7] The first twelve dams referenced above—Bonneville, The Dalles, John Day, McNary, Chief Joseph, Libby, Albeni Falls, Ice Harbor, Lower Monumental, Little Goose, Lower Granite, and Dworshak—are the Corps dams within the FCRPS and are often at the heart of navigation, hydropower, and salmon restoration measures in the basin.

Congress authorizes the construction, maintenance, and operation of dams operated by the Corps. The congressional authorization process usually requires studies and hearings,[8] laws to authorize construction of each dam,[9] and the appropriation of funds to carry out the completion of each project.[10]

Congress authorizes the Corps to operate each dam for a particular purpose or, in most cases, multiple purposes. These authorized purposes generally include flood control, navigation, the generation of hydropower, irrigation,

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[5] Libby Dam on the Kootenai River in Montana and Albeni Falls Dam on the Pend Oreille River in Idaho. *See* WANDSCHNEIDER, *supra* note 4, at 23-24.

[6] Ice Harbor, Lower Monumental, Little Goose, and Lower Granite Dams. *See* WANDSCHNEIDER, *supra* note 4, at 23-24.

[7] Dexter, Lookout Point, Hills Creek, Cougar, Big Cliff, Detroit, Green Peter, and Foster Dams. *See* WANDSCHNEIDER, *supra* note 4, at 23-24. Dexter, Lookout Point, and Hills Creek are located on the Willamette River; Cougar is on the McKenzie River; Green Peter is located on the Santiam River; Foster is on the South Santiam River; and Big Cliff and Detroit are on the North Santiam River. *Id*.

[8] In 1925, Congress authorized the Corps and the Federal Power Commission (now FERC) to estimate the costs for feasibility studies to promote flood control, navigation, hydropower, and irrigation. River and Harbor Act of 1925, ch. 467, § 3, 43 Stat. 1116, 1190 (1925). In 1927, Congress then authorized the Corps to conduct the surveys the Corps had proposed in its feasibility study. River and Harbor Act of 1927, ch. 47, § 1, 44 Stat. 1010, 1015 (1927) (the Corps' study, and all subsequent reports, are commonly referred to as "308 reports," referring to the House document number assigned to the Corps' initial report). Several 308 reports were then submitted to Congress by the Corps over the years. For an extensive and comprehensive history of the Corps' 308 reports and congressional authorization of the Basin's dams, see Michael C. Blumm, *Hydropower vs. Salmon: The Struggle of the Pacific Northwest's Anadromous Fish Resources for a Peaceful Coexistence with the Federal Columbia River Power System*, 11 ENVTL. L. 211, 223-49 (1981).

[9] These authorizing statutes enunciate the purpose, or purposes, for which the Corps is to operate a dam. Usually a specific dam is authorized, but that is not required. *See, e.g.*, River and Harbor Act of 1945, ch. 19, § 2, 59 Stat. 10, 21 (1945) (authorizing "such dams as are necessary" on the Snake River for navigation and irrigation, which eventually became Lower Granite, Little Goose, Ice Harbor, and Lower Monumental Dams).

[10] *See* WANDSCHNEIDER, *supra* note 4, at 8.

and recreation.[11] If the Corps changes its operation of a dam in such a way that requires reallocation of storage space or significantly affects any project purpose, the Corps must allow public review and comment.[12] The Corps must also coordinate its water management activities with other federal and state agencies to achieve the most efficient use of water and related land resources.[13]

The Corps has the authority to conduct improvements of rivers, harbors, and other waterways.[14] However, any Corps improvements must include "due regard for wildlife conservation."[15] The Corps is currently considering a $100 million dredging project to deepen the Columbia channel.[16] The Corps must also authorize any structure or work (including private or public development) in or affecting the navigable waters of the United States,[17] and the Corps operates a permit system to broadly regulate these activities.[18]

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[11] The Secretary of the Army also has the authority to sell any surplus water from any dam under her control for domestic and industrial uses. 33 U.S.C. § 708 (1994).

[12] 33 U.S.C. § 2312 (requiring Secretary to provide an opportunity for public review and comment prior to making "changes in the operation of any reservoir which will result in or require a reallocation of storage space in such reservoir or will significantly affect any project purpose").

[13] 42 U.S.C. §§ 1962 to 1962d-5 (1994) (the Act authorized the creation of the Water Resources Council, comprised of the heads of several federal agencies, to govern intergovernmental coordination); *see also* 18 C.F.R. pts. 701 to 740 (1996) (regulations governing the Water Resources Council). *See also* Robert E. Beck, *Flooding*, *in* 5 WATERS AND WATER RIGHTS 531 (Robert E. Beck ed., 1994).

[14] 33 U.S.C. § 540 (all "federal investigations and improvements of rivers, harbors, and other waterways" fall under the supervision of the Corps, unless otherwise specified by an act of Congress).

[15] *Id*. (this "due regard for wildlife conservation" also applies to any Corps investigations). *See also infra* § 2.1(2)(C).

[16] *See* Richard Read, *Fight Looms Over River Dredging*, THE OREGONIAN, Aug. 5, 1996, at A1 (the proposed dredging would increase the depth of the channel from 40 to 43 feet; however, public meetings will be held every six weeks for the next three years to discuss the project, which could start probably no earlier than the year 2003); U.S. ARMY CORPS OF ENGINEERS, PORTLAND DIST., PUBLIC INVITED TO DISCUSS COLUMBIA RIVER NAVIGATION CHANNEL IMPROVEMENTS WITH CORPS AND PORT SPONSORS (Jan. 2, 1997) (announcing public meetings and stating that studies needed prior to any dredging will take five years).

[17] *Id*. § 403.

[18] *See* 33 C.F.R. § 322 (1996).

(B) Flood Control

The Corps is the federal agency with the primary responsibility for flood control in the United States.[19] The Corps operates eleven major dams in the Columbia Basin for flood control purposes,[20] including John Day, Libby, Albeni Falls,[21] Lower Granite,[22] and Dworshak.[23]

Congress has passed a myriad of flood control statutes over the years which have established the boundaries of the Corps' authority and activities. Among its enumerated powers, the Corps has the authority to (1) acquire property and property rights necessary for any flood control dam[24] and

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[19] 33 U.S.C. § 701a-1 (vesting the Corps with supervision over all federal "investigations and improvements of rivers and other waterways for flood control and allied purposes," unless an act of Congress specifies otherwise). The same provision may also be found at *id*. § 701b. Congress declared that flood control "shall be construed to include channel and major drainage improvements and flood prevention improvements for protection from groundwater-induced damages." *Id*. § 701a-1.

[20] WANDSCHNEIDER, *supra* note 4, at 23-24.

[21] John Day, Libby, and Albeni Falls—as well as The Dalles Dam—were all authorized by Congress in the Flood Control Act of 1950, ch. 188, § 204, 64 Stat. 163, 170 (1950) (which was also included as Title II of the River and Harbor Act of 1950, § 219, 64 Stat. 184 (1950)).

[22] Lower Granite—along with Ice Harbor, Little Goose, and Lower Monumental Dams—was authorized by Congress in 1945. River and Harbor Act of 1945, ch. 19, § 2, 59 Stat. 10, 21 (1945). While flood control and navigation were enumerated purposes for these four lower Snake River dams, hydropower production was also authorized. *Id*. at 22 (directing the Secretary of the Interior to market any "surplus power" generated at the four dams); *see also* Blumm, *supra* note 8, at 233 n. 103.

[23] Dworshak was authorized for flood control "and other purposes." Flood Control Act of 1962, Pub. L. No. 87-874, § 203, 76 Stat. 1180, 1193 (1962). *See also* Blumm, *supra* note 8, at 243 (discussing legislative history that indicates Congress's intent that some water from Dworshak be used to aid in river flows for fish migration). The remaining major flood control dams operated by the Corps are Detroit, Foster, Green Peter, Cougar, Lookout Point, and Hills Creek. WANDSCHNEIDER, *supra* note 4, at 23-24 (the Corps also operates the following smaller projects for flood control purposes in the basin: Blue River, Cottage Grove, Dorena, Fall Creek, and Fern Ridge, Lost Creek, and Lucky Peak). Grand Coulee, a Bureau dam, is also utilized for flood control purposes. SOR SUMMARY, *supra* note 2, at 46.

[24] 33 U.S.C. § 701c-1. This section modified part of the Flood Control Act of 1936, ch. 688, 49 Stat. 1570 (1936), which had required local involvement and cooperation in flood control projects. This cooperation requirement was known as "the ABC requirement." *See* 33 U.S.C. § 701c (the relevant section of the 1936 act); *see also* Beck, *supra* note 13, at 527 ("ABC" refers to sections (a)-(c) of § 701c). State and local "cooperation" included providing—at no cost—all property and property rights necessary for the flood control project and agreeing to release the United States from any damages caused by the construction of the project. *See id*. at 527-28. Now, states are reimbursed for costs. 33 U.S.C. § 701c-1. The Corps also has immunity from any damages due to flood or flood waters. *Id*. § 702c.

(2) construct, modify, and maintain water resource projects for flood control, navigation, shore protection, and other uses.[25]

The Corps follows regulations promulgated by the Secretary of the Army for the use of storage water at flood control projects,[26] using flood control rule curves to aid in flood control at basin dams. Flood control rule curves are operating guidelines based upon computer models utilizing both historical trends and future projections to estimate the reservoir levels needed at each dam to leave room for incoming floodwaters.[27]

(C) Navigation

The Corps conducts navigation improvement projects and operates navigation locks in the Columbia River and its tributaries. Sixteen of the Corps' dams in the Basin are authorized for navigation use,[28] including

[25] 42 U.S.C. § 1962d-5. The Corps may also recommend (to the Secretary of the Army) the construction of small flood control projects not specifically authorized by Congress. 33 U.S.C. § 701s. However, no more than $40 million may be spent on these small projects in any fiscal year, and no more than $5 million for a project at a single locality. *Id*. *See also* 33 C.F.R. § 263.23 (the Corps cost cap in the C.F.R. is lower, not incorporating the amendment that increased authorized costs from $30 to $40 million annually and from $2-3 million to $5 million for a project at a single locality).

[26] The Secretary of the Army makes regulations for the use of storage water for both flood control and navigation at all dams under her control. 33 U.S.C. § 709. *See* 33 C.F.R. pt. 208 (1996) (containing the Corps flood control regulations).

[27] *See* WANDSCHNEIDER, *supra* note 4, at 15. The Corps estimates that Portland District Corps of Engineer's controlled projects prevented approximately 2.75 billion dollars of damage in Oregon and 165 million dollars of damage in Washington during fiscal year 1996. See Memorandum from Howard B. Jones, Chief of the Planning and Engineering Division, U.S. Army Corps of Engineers to the Commander, U.S. Army Corps of Engineers North Pacific Division (Feb. 12, 1997) (on file with the Northwest Water Law and Policy Project) (noting that the Corps "coordinated the operation of 60 dams throughout the Columbia River Basin to keep the Willamette River from flooding Portland").

[28] WANDSCHNEIDER, *supra* note 4, at 23-24.

Bonneville,[29] The Dalles,[30] John Day, Libby, Albeni Falls, McNary,[31] Ice Harbor, Lower Monumental, Little Goose, Lower Granite, and Dworshak.[32]

The Corps conducts many river and harbor improvements to aid in navigation. Congress authorized the Corps to construct river and harbor improvements that "will result in substantial benefits to navigation,"[33] although this authority has a cost cap.[34]

The Corps uses storage water for navigational purposes according to rules promulgated by the Secretary of the Army.[35] Examples of Corps navigation activities include maintenance of the entrance channel to the mouth of the Columbia River at Astoria and ship channels and navigation locks on other portions of the Columbia, Snake,[36] and Willamette Rivers.[37]

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[29] Bonneville Dam was authorized by Congress in 1935. River and Harbor Act of 1935, ch. 831, § 1, 49 Stat. 1028 (1935).

[30] The Dalles Dam—as well as Libby, John Day, and Albeni Falls—was authorized by Congress in 1950. Flood Control Act of 1950, ch. 188, § 204, 64 Stat. 163, 170 (1950) (which was also included as Title II of the River and Harbor Act of 1950, § 219, 64 Stat. 184 (1950)).

[31] McNary Dam was authorized along with the four lower Snake River dams (Ice Harbor, Lower Monumental, Little Goose, and Lower Granite) by Congress in 1945. *See supra* note 9, and accompanying text. However, Congress required that McNary be operated in a manner to protect anadromous fish. River and Harbor Act of 1945, ch. 19, § 2, 59 Stat. 22 (1945) ("In the design, construction, and operation of the Dam adequate provision shall be made for the protection of anadromous fish by affording free access to their natural spawning grounds and other appropriate means."); *see also* Blumm, *supra* note 8, at 233-34.

[32] The other dams used for navigation are Detroit, Green Peter, Cougar, Lookout Point, and Hills Creek. WANDSCHNEIDER, *supra* note 4, at 23-24. The two Bureau dams in the FCRPS (Grand Coulee and Hungry Horse) are also utilized for navigation. SOR SUMMARY, *supra* note 2, at 46.

[33] 33 U.S.C. § 577(a). The Secretary may make this decision if the Corps finds that "such work is advisable." *Id*. Also, the benefits of the project must be "in excess of the cost." *Id*. The project must also be capable of operating "consistently with appropriate and economic use of the waters of the Nation for other purposes." *Id*.

[34] 33 U.S.C. §§ 577(a), (b) (no more than $35 million annually and $4 million for a project at a single locality). *See also* 33 C.F.R. § 263.21 (however, the Corps regulation does not reflect a recent amendment that increased the cost cap, and instead has a $25 million annual limit and $2 million per locality cost cap).

[35] 33 U.S.C. § 709; *see* 33 C.F.R. pt. 207 (Corps' regulations for navigation).

[36] *See* 33 C.F.R. § 207.718 (regulations governing the Columbia and Snake Rivers).

[37] *See* 33 C.F.R. § 207.680 (navigation and lock regulations on the Willamette River).

(D) Hydropower

All major Corps projects in the Columbia Basin are authorized for hydropower production.[38] The Corps also has authority to construct new hydropower projects at existing dams.[39] The Corps submits periodic reports to Congress regarding the feasibility and commercial importance of specific river improvement projects, and must address the "development and utilization of water power for industrial and commercial purposes" in the report.[40]

Bonneville Power Administration (BPA) markets and distributes the excess power produced from Corps dams under the Bonneville Project Act,[41] the Federal Columbia River Transmission Act,[42] and the Columbia River Treaty with Canada.[43] BPA entered into a memorandum of understanding with the Corps that calls for the development of detailed operating agreements and stipulates that the Corps will operate its projects to generate electric power according to power schedules developed by BPA; therefore, pursuant to the BPA/Corps memorandum of understanding and various project authorizing statutes, the Corps is the primary operator of FCRPS dams.[44]

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[38] WANDSCHNEIDER, *supra* note 4, at 23-24.

[39] Upon recommendation by the Corps, the Secretary of the Army may provide for construction of facilities for hydropower production in dams originally authorized by Congress for navigation improvements. 33 U.S.C. § 609. The Secretary may also permit construction of facilities for hydropower production in any dam originally authorized for flood control purposes. *Id*. § 701(j).

[40] 33 U.S.C. § 545(b).

[41] 16 U.S.C. §§ 832 to 832l (1994). (authorizing BPA to market power, construct transmission lines, and set rates). *See infra* § 2.4(1)(A).

[42] 16 U.S.C. §§ 837g to 838h (1994). This act expressly authorized BPA to wheel, or transmit, power for others on BPA's existing power grid. *See infra* § 2.4(1)(A).

[43] Treaty Between the United States of America and Canada Relating to Cooperative Development of the Water Resources of the Columbia River Basin, Sept. 16, 1964, 15 U.S.T. 1555. The treaty was originally signed in 1961, but was not put into force until 1964. *See infra* § 2.4(1)(A) and Blumm, *supra* note 8, at 243-52 for a detailed discussion of the substantive requirements of the Columbia River Treaty and subsequent history of the treaty's impact in the basin.

[44] BONNEVILLE POWER ADMIN., DRAFT ENVIRONMENTAL IMPACT STATEMENT, THE ROLE OF THE BONNEVILLE POWER ADMINISTRATION IN THE PACIFIC NORTHWEST POWER SUPPLY SYSTEM, INCLUDING ITS PARTICIPATION IN THE HYDRO-THERMAL POWER PROGRAM, app. A, at I-7 (July 22, 1977). The Corps may override BPA's schedule if it determines that compliance will: (1) have harmful effects on the environment (including fish and wildlife resources); (2) will impair vested property rights of third parties; (3) would be inconsiderate of downstream construction activities; (4) would conflict with statutory obligations regarding flood control, navigation, irrigation, or recreation; or (5) would exceed the safe limits of the generating, transforming, or switching facilities. Id. at I-7 to I-8. *See also* 33 C.F.R. § 209.141(e). The Corps is responsible

The Corps coordinates the operation of the FCRPS with BPA's power demands under the Pacific Northwest Coordination Agreement (PNCA).[45] The PNCA provides for the exchange of several types of power among PNCA participants[46] to facilitate integrated coordination of the FCRPS and nonfederal dams.[47] An annual operating plan is used to guide monthly operations.[48]

(E) Irrigation

Eight major Corps dams are authorized for irrigation use, including John Day, Lower Granite, and Lower Monumental.[49] The Secretary of the Army

(continued)

for operating the projects and providing cost and availability information to the power marketing agencies. *Id*. But "[m]arketing the power declared to be excess to the needs of the projects and recovering Federal investment are the responsibilities of the power marketing agencies." *Id*.

[45] Bonneville Power Admin., Agreement for Coordination of Operations Among Power Systems of the Pacific Northwest, Contract No. 14-02-4822 (1964). The PNCA will expire on June 30, 2003. *Id*. § 1(a). *See infra* § 2.4(1)(A) and Blumm, *supra* note 8, at 245-46, 249-52 for discussion of the PNCA.

[46] Parties to the PNCA include federal agencies (BPA, Corps, and Bureau), private utilities (Portland General Electric, Pacific Power & Light, Puget Sound Power & Light, Washington Water Power, and Montana Power), municipal utilities (Seattle City Light, Tacoma City Light, and Eugene Water & Electric Board), public utility districts (Grant County PUD, Chelan County PUD, Douglass County PUD, Pend Oreille County PUD, Snohomish County PUD, and Cowlitz County PUD), and one private company (Colockum Transmission Company, a subsidiary of Aluminum Company of America (ALCOA)). U.S. DEP'T OF ENERGY, BONNEVILLE POWER ADMINISTRATION, U.S. DEP'T OF THE ARMY, CORPS OF ENGINEERS, NORTH PACIFIC DIVISION, U.S. DEP'T OF THE INTERIOR, BUREAU OF RECLAMATION, PACIFIC NORTHWEST DIVISION, THE COLUMBIA RIVER SYSTEM: THE INSIDE STORY 22 (Sept. 1991).

[47] *See* Blumm, *supra* note 8, at 245 (citing BONNEVILLE POWER ADMIN., DRAFT ENVIRONMENTAL IMPACT STATEMENT, THE ROLE OF THE BONNEVILLE POWER ADMINISTRATION IN THE PACIFIC NORTHWEST POWER SUPPLY SYSTEM, INCLUDING ITS PARTICIPATION IN THE HYDRO-THERMAL POWER PROGRAM, app. A, at II-30 (July 22, 1977); and U.S. DEP'T OF ENERGY, REVISED DRAFT ENVIRONMENTAL IMPACT STATEMENT, THE ROLE OF THE BONNEVILLE POWER ADMINISTRATION IN THE PACIFIC NORTHWEST POWER SUPPLY SYSTEM, at IV-13 to IV-14 (1980) [hereinafter 1980 REVISED DEIS])).

[48] *See* 1980 REVISED DEIS, *supra* note 47, at II-14.

[49] WANDSCHNEIDER, *supra* note 4, at 23-24; SOR SUMMARY, *supra* note 2, at 46 (listing irrigation as a project use at Lower Granite). Other Corps dams authorized for irrigation include Detroit, Foster, Green Peter, Lookout Point, and Hills Creek.

may authorize irrigation use at Corps dams, after which the Bureau is in charge of constructing and operating any authorized projects.[50]

(F) Recreation

All but three of the Corps' dams in the Columbia Basin are utilized for recreation purposes.[51] Since 1988,[52] Congress has required the Corps to consider the effects of its projects on current and future recreational uses in the areas surrounding its projects[53] and to ensure that it does not adversely affect existing recreational uses when maintaining or repairing its dams.[54] The Corps is authorized to create public parks and recreation areas at its dams[55] and must manage these recreation areas in the public interest.[56]

In addition, the Federal Water Project Recreation Act of 1965[57] requires the Corps to give "full consideration" to possible recreation uses for any planned project.[58] If the project can "reasonably serve" recreation purposes then the

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[50] For dams built after December 22, 1944, the Secretary of the Army may allow the project to be used for irrigation purposes, so long as lawful existing uses are not "prejudiced." 43 U.S.C. § 390 (1994). After this determination, the Bureau of Reclamation (under the authority of the Secretary of the Interior) may operate and construct irrigation facilities at the dam. *Id*.

(continued)

Section 390 does not apply to any dams built for irrigation purposes after December 22, 1944. *Id*. The Secretary of the Army is also authorized to use surplus water allocated for municipal and industrial water supply for interim irrigation use. *Id*.

[51] WANDSCHNEIDER, *supra* note 4, at 23-24 (only Big Cliff, Foster, and Dexter Dams are not used for recreation).

[52] 33 U.S.C. § 2320(d)(1).

[53] 33 U.S.C. § 2320(a).

[54] 33 U.S.C. § 2320(b). However, these constraints do not apply when the Corps ceases to operate a dam. *Id*. § 2320(d)(2).

[55] 16 U.S.C. § 460d. The same section authorizes the Secretary of the Army to lease lands under her control, if she deems it to be in the public interest. *Id*. Nothing in the text of the statute seems to limit these leases to recreation purposes. However, the Corps has the authority to amend these leases, if to do so would be in the public interest. *Id*. § 460d-1. *See infra* § 2.1(4)(A) for more on the land management authority of the Corps.

[56] 16 U.S.C. § 460d. The Corps has regulations governing the public use of its water resource development projects. *See* 36 C.F.R. pt. 327 (1996).

[57] 16 U.S.C. §§ 460l-12 to 460l-21 (1994). *See also id*. §§ 460l-31 to 460l-34 for additional sections governing the Corp's recreation management. Congress declared in 1992 that "[t]here is a Federal responsibility to provide opportunities for public recreation at Federal water projects." *Id*. § 460l-31(1). This act gives significant authority to the Secretary of the Interior, and also applies to Bureau projects. *See infra* § 2.2(1)(F).

[58] 16 U.S.C. § 460l-12(a).

project "shall be constructed, operated, and maintained accordingly."[59] The Corps may also construct, operate, and maintain public outdoor recreation facilities at existing projects.[60] However, recreation costs at a project cannot exceed costs allocated for other uses (such as irrigation, hydropower, municipal use, navigation, and flood control) at the project.[61]

(2) Fish and Wildlife Protection

(A) The Endangered Species Act

The Endangered Species Act (the ESA)[62] protects species listed as either endangered or threatened[63] and imposes substantive duties on federal agencies. The Corps must ensure that its activities are not likely to (1) jeopardize the continued existence of listed species or (2) adversely modify the critical habitat of such species.[64] Any proposed action that is likely to jeopardize a listed species or adversely affect its critical habitat requires the Corps to consult with the relevant federal consulting agency, either the

[59] 16 U.S.C. § 460l-12(a). Section 460l-12(a) also requires that the Corps consider fish and wildlife enhancement in planning projects. *Id.* However, the Secretary of the Army cannot require a non-federal interest to operate and maintain a recreation facility operated by the Secretary of the Army as a condition to the construction of a new recreation facility. 33 U.S.C. § 2297.

[60] 16 U.S.C. § 460l-18(a). The Corps may also provide for fish and wildlife enhancement facilities at existing projects. *Id.* *See infra* § 2.2(2)(C). This section does not apply to reservoirs within national wildlife refuges. 16 U.S.C. § 460l-18(a). Recreation facilities must still be coordinated with other project purposes. *Id.* The Secretary of the Interior has property acquisition and disposition powers necessary to provide for recreational use at projects. *Id.* However, the Secretary of the Interior may not use Corps lands for recreation purposes without the Corps' consent. *Id.* § 460l-18(c).

[61] 16 U.S.C. § 460l-20. “Cost Allocation” refers to the expenses associated with the construction of a particular recreation or fish and wildlife enhancement project. *Id.* The same cost cap applies to fish and wildlife enhancement, but does not apply to the enhancement of "anadromous fisheries, shrimp, or for the conservation of migratory birds protected by treaty." *Id.*

[62] 16 U.S.C. §§ 1531 to 1544 (1994).

[63] The Secretaries of Interior and Commerce make listing determinations. 16 U.S.C. § 1533(a)(1); *see also* 50 C.F.R. pt. 424 (1995). Interested persons may petition the Secretary to list a species. 16 U.S.C. § 1533(b)(3)(A); *see also* 50 C.F.R. § 424.14.

[64] 16 U.S.C. § 1536(a)(2). The Secretaries of Interior and Commerce must, "to the maximum extent prudent and determinable," designate critical habitat concurrent with the listing of a species. *Id.* § 1533(a)(3)(A); *see also* 50 C.F.R. § 424.12 (criteria for designating critical habitat). The Corps also has an affirmative obligation under the ESA to take actions to conserve listed species. 16 U.S.C. § 1536(a)(1).

United States Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service (NMFS).[65]

Initially, the Corps must inquire whether a listed or proposed[66] species "may be present in the area" of the Corps' proposed activity.[67] If the consulting agency finds that a listed species is present in the area,[68] the Corps must prepare a biological assessment (BA).[69] For a proposed species, the Corps need only "confer" with the consulting agency if the authorized action is likely to jeopardize the continued existence of any proposed species or result in the destruction or adverse modification of proposed critical habitat.[70] If the BA shows that the Corps' proposed activity is likely to affect the continued existence of the listed species or adversely affect its critical habitat, formal consultation is required.[71]

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[65] 16 U.S.C. § 1536(a)(2). USFWS (Department of the Interior)(non-marine species) and NMFS (Department of Commerce)(marine species) are the two federal agencies which share responsibility for administering the ESA. 50 C.F.R. § 402.01(b). *See infra* §§ 2.8(2)(A) (USFWS), 2.7(2)(A) (NMFS) for more on the ESA responsibilities of these "consulting agencies."

[66] A "proposed species" is one for which a final listing determination is pending. 50 C.F.R. § 402.02.

[67] 16 U.S.C. § 1536(c)(1); *see also* 50 C.F.R. § 402.12. The Corps may also initiate "early consultation" with a consulting agency if a prospective applicant for a federal permit "has reason to believe that the prospective action may affect listed species or critical habitat" and requests that Corps enter into early consultation. 50 C.F.R. § 402.11. Prior to the initiation of early consultation the prospective applicant must certify to the Corps that "(1) it has a definite proposal outlining the action and its effects and (2) it intends to implement its proposal, if authorized. Id. § 402.11(b). The procedures and responsibilities for early consultation are similar to those required for formal consultation except that references to the "applicant" are treated as "prospective applicant" and a "preliminary biological opinion" not a biological opinion is issued by NMFS or the USFWS. Id. § 402.11(d). For a discussion of the formal consultation requirement see *infra* notes 71-74 and accompanying text.

[68] The consulting agency must use "the best scientific and commercial data available" in making this determination. 16 U.S.C. § 1536(c)(1).

[69] 16 U.S.C. § 1536(c)(1). The contents of the BA are "at the discretion of" the Corps, depending on the nature of the proposed action. 50 C.F.R. § 402.12(f). However, the BA must be based on "the best available scientific and commercial data available." 16 U.S.C. § 1536(a)(2). The BA must be completed within 180 days or a mutually agreed upon date. *Id*. § 1536(c)(1).

[70] 16 U.S.C. § 1536(a)(4); *see also* 50 C.F.R. § 402.10.

[71] 50 C.F.R. § 402.12(k). Formal consultation regulations for USFWS and NMFS are at 50 C.F.R. § 402.14. The Corps may not "make any irreversible or irretrievable commitment of resources" once formal consultation has begun. 16 U.S.C. § 1536(d); 50 C.F.R. § 402.09.

Action agencies such as the Corps may also engage in "informal consultation" with a consulting agency to determine whether formal consultation is required. 50 C.F.R. § 402.13. Informal consultation includes all discussions and correspondence between the action and consulting agency. *Id*. § 402.13(a). The consulting agency may suggest modifications to the proposed action that could be implemented to avoid adverse effects to the listed species or corresponding critical habitat. *Id*. § 402.13(b).

Formal consultation results in a biological opinion (BiOp) issued by the consulting agency.[72] If the consulting agency concludes that the Corps' proposed action is not likely to jeopardize the species, the agency issues a "no jeopardy BiOp."[73] Conversely, if the consulting agency cannot make this determination, it must issue a "jeopardy BiOp," which may include "reasonable and prudent alternatives" to the proposed action that will avoid jeopardy.[74]

If the Corps relies on and follows the measures specified in the BiOp, it has probably fulfilled its ESA obligations.[75] However, the Ninth Circuit has held that an agency's reliance on a BiOp to satisfy its ESA obligations cannot be arbitrary and capricious.[76] The Ninth Circuit has also ruled that action agencies such as the Corps are not bound by all the details of a BiOp so long as they take alternative, reasonably adequate measures to ensure the continued existence of listed species.[77]

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[72] *See* 16 U.S.C. § 1536(b)(3)(A). Content requirements for BiOps are at 50 C.F.R. § 402.14(h). *See also* 50 C.F.R. § 402.14(g) (listing the consulting agencies' responsibilities during formal consultation, including: (1) the evaluation of the effects of the proposed action and cumulative effects on the listed species or critical habitat, *id*. § 402.14(g)(3), and (2) the use of "the best scientific and commercial data available." *Id*. § 402.14(g)(8)).

[73] 50 C.F.R. § 402.14(h)(3).

[74] 50 C.F.R. § 402.14(h)(3). The consulting agency may also issue a jeopardy BiOp with no reasonable and prudent alternatives. *See id*. (directing that a jeopardy BiOp "shall include reasonable and prudent alternatives, if any"). The Corps may also be required to reinitiate formal consultation with the consulting agency when: (1) the Corps retains discretionary control over the action and (2) certain new conditions arise or new information becomes available. 50 C.F.R. §§ 402.16(a)-(d).

[75] Environmental Coalition of Broward County, Inc. v. Meyers, 831 F.2d 984 (11th Cir. 1987). *See also* 50 C.F.R. § 402.15 (responsibilities of the action agency following issuance of a BiOp).

[76] Pyramid Lake Tribe of Indians v. United States Dep't of the Navy, 898 F.2d 1410, 1415 (9th Cir. 1990) (action agencies may not solely rely on BiOps to establish conclusively that they have satisfied their ESA obligations; a decision to rely on a BiOp must be shown to not be arbitrary and capricious).

[77] Tribal Village of Akutan v. Hodel, 854 F.2d 651, 660-61 (9th Cir. 1988). *But see* American Rivers v. National Marine Fisheries Service, No. 96-384, slip op. at 28-29 (D. Or. April 3, 1997) (distinguishing *Village of Akutan* and rejecting plaintiff's claim that any deviation from the reasonable and prudent alternatives provided by NMFS' 1994-1998 Biological Opinion for Federal Columbia River Power System Operations triggers a duty to come up with other mitigative measures).

In 1995, NMFS issued a "jeopardy BiOp" concerning the operation of the FCRPS and its effect on the listed Snake River salmon.[78] The BiOp contained "reasonable and prudent alternatives" to the proposed operation of the FCRPS during the years 1994 to 1998, calling for the Corps to implement several actions deemed necessary to avoid jeopardizing the continued existence of the listed species.[79] These actions included increased flows in the Columbia and Snake Rivers,[80] potential reservoir drawdowns,[81] increased spill,[82] continued transportation of juvenile salmon,[83] and other measures.[84]

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[78] NATIONAL MARINE FISHERIES SERV., U.S. DEP'T OF COMMERCE, ENDANGERED SPECIES ACT—SECTION 7 CONSULTATION: BIOLOGICAL OPINION: REINITIATION OF CONSULTATION ON 1994-1998 OPERATION OF THE FEDERAL COLUMBIA RIVER POWER SYSTEM AND JUVENILE TRANSPORTATION PROGRAM IN 1995 AND FUTURE YEARS (Mar. 2, 1995) [hereinafter 1995 BIOP]. *See infra* § 2.7(2)(A) for more on the listed Snake River salmon.

[79] 1995 BIOP, *supra* note 78, at 91-135 (for all the measures called for in the NMFS BiOp).

[80] In the Columbia, spring flow targets at McNary Dam are 220,000 cubic feet per second (cfs) to 260,000 cfs. 1995 BIOP, *supra* note 78, at 104. The summer flow target for McNary is 200,000 cfs. *Id*. For the Snake, spring flow targets are 85,000 cfs to 100,000 cfs at Lower Granite Dam. *Id*. Summer flow targets are 50,000 cfs to 55,000 cfs. *Id*. However, NMFS placed draft limits on reservoirs that could possibly curtail augmentation to protect "other portions of the Columbia Basin ecosystem and the resident fish and wildlife that rely on the reservoirs." *Id*. at 95-98.

[81] Lower Snake River projects are to be operated within one foot of minimum operating pool (MOP), from April 10, until adult fall chinook begin entering the Snake in late August. *Id*. at 92-94. On the Columbia, John Day Dam was to be operated at near MOP in 1996, and continuously at that level thereafter. *Id*. at 113. MOP is the lowest water level at a project at which navigation locks can still operate. NORTHWEST POWER PLANNING COUNCIL, COLUMBIA RIVER BASIN FISH AND WILDLIFE PROGRAM, at G-9 (Dec. 14, 1994) [hereinafter 1994 PROGRAM]. Future deeper drawdowns are to be evaluated, but none will be implemented until the year 2000. 1995 BIOP, *supra* note 78, at 92-94.

[82] *Id*. at 104. In the spring, spill is to occur at all projects. *Id*. at 105. The BiOp requires spill to meet 80% fish passage efficiency (FPE). *Id*. FPE is the percentage of the total number of fish that pass a dam without passing through the turbines. 1994 PROGRAM, *supra* note 81, at G-5. NMFS established "spill triggers" in the BiOp—which consisted of minimum flows at Snake River dams, below which no spill can occur without authorization from the Technical Management Team (TMT). 1995 BIOP, *supra* note 78, at 105. NMFS created the TMT to "advise the operating agencies [the Corps and the Bureau] on dam and reservoir operations to optimize passage conditions for juvenile and adult anadromous salmonids." *Id*. at 101. The TMT is comprised of representatives from NMFS, the USFWS, the Corps, BPA, the Bureau, and state and tribal representatives. *Id*. at 101-03; Letter from William Stelle, Regional Director, National Marine Fisheries Serv., to John A. Kitzhaber, Governor, Oregon (May 15, 1996) (enclosing a NMFS memorandum altering the TMT structure to include state and tribes).

However, spill may cause nitrogen supersaturation in smolts, which may lead to gas bubble trauma under certain conditions. *See, e.g.*, 1995 BIOP, *supra* note 78, at 48. Thus, spill could be limited by high levels of dissolved gas. *Id*. at 106.

A spill program at mainstem dams had been in place at some Corps dams since December 31, 1988, when in order to settle a lawsuit, BPA, fishery agencies, tribes, and utility representatives negotiated a ten-year spill agreement covering Lower Monumental, Ice Harbor, John Day, and The Dalles Dams. 1994 PROGRAM, *supra* note 81, at 5-36; *see also*

The ESA also prohibits action agencies such as the Corps from "taking" any endangered species.[85] Taking is defined broadly to include harassing or harming species,[86] but incidental take "statements" (similar to permits) that reduce or minimize the take of threatened or endangered species may be issued by the consulting agency.[87]

(B) The Fish and Wildlife Coordination Act[88]

This act ensures that wildlife conservation receives equal consideration and is coordinated with other features of water resource development.[89] The Act's goal is to protect the loss of and damage to wildlife, and to develop and improve the wildlife resource in connection with water resource developments.[90]

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Michael C. Blumm & Andy Simrin, *The Unraveling of the Parity Promise: Hydropower, Salmon, and Endangered Species in the Columbia Basin*, 21 ENVTL. L. 657, 699-700 (1991) [hereinafter *Unraveling Parity*] (discussing the lawsuit and the settlement).

[83] *Id*. at 110-12.

[84] These include: measures to reduce adult mortality, *id*. at 115, improved barging, *id*. at 115-16, predation control, *id*. at 122, improved fish passage at mainstem dams, *id*. at 122-23, and the installation of screens. *Id*. at 125.

[85] The ESA prohibits all persons (including federal agencies) from the "taking" of any endangered fish and wildlife species. 16 U.S.C. § 1538(a)(1). Federal regulations expand this prohibition to threatened species as well. 50 C.F.R. § 17.31(a).

[86] The ESA defines "take" as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in such conduct. 16 U.S.C. § 1532(19). Federal regulations further define "harm" as any act that actually kills or injures wildlife, including "significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering." 50 C.F.R. § 17.3. This regulation was upheld by the Supreme Court. Babbitt v. Sweet Home Chapter, Communities For A Greater Oregon, 115 S. Ct. 2407 (1995).

[87] An incidental take is a taking that results from, but is not the purpose of, "carrying out an otherwise lawful activity conducted by the Federal agency or applicant." 50 C.F.R. § 402.02. An incidental take requires a statement issued by the consulting agency during formal consultation that sets out the terms and conditions that must be complied with by the federal agency. *Id*. § 402.14(i). Incidental take statements may be included in a BiOp. For example, the 1995 BiOp issued by NMFS concerning the effect of the operation of the FCRPS on listed Snake River salmon contained an incidental take statement. *See* 1995 BIOP, *supra* note 78, at 159.

[88] 16 U.S.C. §§ 661 to 666c (1994).

[89] 16 U.S.C. § 661.

[90] 16 U.S.C. § 662(a).

The Corps must consult with the USFWS when commencing any impoundment, diversion, or channel deepening.[91] The Corps must give the USFWS recommendations "full consideration," but the final decision rests with the Corps.[92] The Act allows the Corps to modify its projects in order to accommodate wildlife conservation[93] and acquire property to aid in wildlife conservation.[94]

(C) Fish and Wildlife Conservation

The Water Resources Development Act of 1986[95] requires the Secretary of the Army to study the feasibility of using Corps resources to conserve fish and wildlife habitat, and to report any revisions of that study to Congress biennially.[96] Along with any water resource project proposal, the Corps must submit to Congress either a plan to mitigate fish and wildlife losses or a determination that the project will have no adverse effects on fish and wildlife.[97] Required mitigation must begin either before or concurrent with project construction.[98] This mitigation may include the acquisition of land or interests in land; however this acquisition authority has a cost cap.[99]

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[91] 16 U.S.C. § 662(a). However, impoundments with a maximum surface area of less than 10 acres are excluded. *Id*. §662(h). Activities in connection with programs administered primarily for land management and use carried out by federal land management agencies on federal lands are also exempt. *Id*.

[92] 16 U.S.C. § 662(b). The Corps shall include in its project plan "such justifiable means and measures for wildlife purposes" that the USFWS recommends "to obtain maximum overall project benefits." *Id*. However, project plans are subject to review by the Corps or Congress. *See id*.

[93] 16 U.S.C. § 662(c) (the Corps may "modify or add to the structures and operations" of its projects).

[94] 16 U.S.C. § 663(c) (title, land, and waters may be acquired for wildlife conservation). *See also infra* § 2.1(4)(A).

[95] Pub. L. No. 99-662, 100 Stat. 4082 (codified mostly at 33 U.S.C. §§ 2201 to 2329).

[96] 33 U.S.C. § 2263(a).

[97] 33 U.S.C. § 2283(d).

[98] 33 U.S.C. §2283.

[99] *Id*. § 2283(b)(1). The Secretary of the Army may not spend more than $30 million per fiscal year, and no more than $7.5 million on a particular project, or 10% of the project cost (whichever is greater). *Id*. *See also infra* § 2.1(4)(A).

The Corps may modify its projects to "improve the quality of the environment in the public interest,"[100] and conduct reviews to see if such modifications are necessary.[101] These activities also have a cost cap.[102] In addition, all Corps improvements and investigations of rivers and harbors must include a "due regard for wildlife conservation."[103] However, the statute does not define "due regard."

(D) The Northwest Power Act

The Northwest Power Act of 1980 (the NPA)[104] created the Northwest Power Planning Council (the Council), an interstate compact agency comprised of two members from each of the four states in the Columbia Basin.[105] The Council has responsibilities for both chartering the Northwest's electric future and preserving and restoring the fish and wildlife damaged by hydroelectric development and operations.

The NPA was created "to assure the Pacific Northwest of an adequate, efficient, economical, and reliable power supply."[106] However, this goal is subject to another congressional mandate requiring federal dam operators and power marketers to "protect, mitigate and enhance the fish and wildlife, including related spawning grounds and habitat, of the Columbia River and its tributaries."[107] The Council, through its Columbia Basin Fish and Wildlife

[100] 33 U.S.C. § 2309a(b).

[101] 33 U.S.C. § 2309a(a). The Secretary of the Army must report to Congress every two years on any reviews or modifications actually conducted. *Id*. § 2309a(d).

[102] No more than $25 million may be spent annually on reviews and modifications. 33 U.S.C. § 2309a(e).

[103] 33 U.S.C. § 540; *see also supra* § 2.1(1)(A).

[104] Pacific Northwest Electric Power Planning and Conservation Act of 1980, 16 U.S.C. §§ 839 to 839h (1994).

[105] 16 U.S.C. § 839b(a)(2). Members from each state are appointed according to the appointment laws of their own state. *Id*. § 839b(a)(2)(B).

[106] 16 U.S.C. § 839(2).

[107] 16 U.S.C. § 839(6).

Program (the program),[108] is the entity responsible for achieving Congress's required fish and wildlife protection and enhancement.[109]

The Corps' responsibilities under the NPA are two-fold. First, the Corps must exercise its responsibilities consistent with the purposes of the NPA "in a manner that provides equitable treatment for such fish and wildlife with the other purposes" for which Corps projects are managed and operated.[110] Second, the Corps must take the Council's program "into account at each

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[108] 1994 PROGRAM, *supra* note 81. Congress enunciated several statutory criteria for the Council's program. Time deadlines were set for creating and amending the program. 16 U.S.C. § 839b(h)(9) (within one year of the receipt of recommendations). The Council must solicit and evaluate fish and wildlife recommendations from state and federal fishery agencies and Indian tribes. *Id*. § 839b(h)(2). The Council must give "due weight" to these recommendations. *Id*. § 839b(h)(7). The Ninth Circuit interpreted this section of the NPA to "require that a high degree of deference be given to fishery managers' interpretations of such provisions and their recommendations for program measures." Northwest Resource Info. Ctr., Inc. v. Northwest Power Planning Council, 35 F.3d 1371, 1388 (9th Cir. 1994), *cert. denied sub nom*. Pacific N.W. Generating Coop. v. Northwest Power Planning Council, 116 S. Ct. 50 (1995). If the Council chooses not to follow a recommendation submitted by the fishery agencies and tribes, the Council must explain its reasons for so doing, in writing and in the program itself. 16 U.S.C. § 839b(h)(7); *see also* Northwest Resource Info. Ctr., 35 F.3d at 1385-86. All program measures must satisfy five statutory criteria: (1) "complement the existing and future activities" of fishery agencies and tribes; (2) be based on the "best available scientific knowledge;" (3) use the alternative (where "equally effective alternative means of achieving the same sound biological objective exist") with the "minimum economic cost;" (4) be consistent with Indian treaty rights; and (5) provide for improved anadromous fish survival by providing river flows "of sufficient quality and quantity" to improve "production, migration, and survival of such fish." 16 U.S.C. §§ 839b(h)(6)(A)-(E).

The NPA was amended in 1996, in an appropriations rider sponsored by Senator Slade Gorton (R-Wa.). Energy and Water Development Appropriations Act, Pub. L. No. 104-206, § 504, 110 Stat. 2984, 3005-06 (1996) (amending § 839b(h)(10) of the NPA). The rider requires the Council to make recommendations to BPA concerning funding priority measures implementing the Council's program. *Id*. at 3005-06 (adding new § 839b(h)(10)(D)(iv)). The Council's recommendations must be based on "sound scientific principles; benefit fish and wildlife; and have a clearly defined objective and outcome with provisions for monitoring and evaluation." *Id*. The Council must establish an Independent Scientific Review Panel which will review fish and wildlife projects proposed for BPA funding. *Id*. (adding new §§ 839b(h)(10)(D)(i)-(ii)). The rider requires the Council to "fully consider" the panel's recommendations on priorities for project funding, and if the Council does not adopt the panel's recommendations, to explain its reasons for rejecting the recommendations in writing. *Id*. (adding a new § 839b(h)(10)(D)(vi)).

[109] 16 U.S.C. § 839b(h)(5) (requiring the Council's Program to "consist of measures to protect, mitigate, and enhance fish and wildlife affected by the development, operation, and management" of the Columbia River Basin hydrosystem, while assuring the Pacific Northwest an "adequate, efficient[,] economical, and reliable power supply").

[110] 16 U.S.C. § 839b(h)(11)(A)(i).

relevant stage of decisionmaking processes to the fullest extent practicable."[111] However, the enforceability of the Council's program remains unclear.[112]

The Council's program calls for the Corps to continue the out-of-river transportation (by barge and truck) of juvenile salmon from Snake River dams,[113] in an effort to avoid juvenile mortalities that occur when young smolts pass through the power-generating turbines at Corps dams. The Corps has transported juvenile salmon regularly since 1981.[114] But since 1994, the Council's program has called for lesser numbers of juvenile salmon to be transported, limiting the use of transportation to "extremely adverse" conditions—with transportation decisions to be made by fishery agencies and tribes in the Basin.[115] The Council expects "significantly fewer than half the juveniles would be transported in any year" in which no extremely adverse conditions do not exist.[116] The Council's program also calls upon the Corps to improve transportation operations and upgrade transportation facilities.[117]

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[111] 16 U.S.C. § 839b(h)(11)(A)(ii).

[112] BPA's former general counsel suggested that the "consistency" provision, 16 U.S.C. § 839b(h)(10), does not require BPA to implement the Council's program. *See Panel Discussion, Colloquium: Who Runs the River?*, 25 ENVTL. L. 417, 422 (1995) (remarks of Harvey Spigal). The Ninth Circuit seems to agree, stating that BPA "must act consistently with the Council's [P]rogram but in the end has final authority to determine its own decisions." Northwest Resource Info. Ctr., Inc. v. National Marine Fisheries Serv., 25 F.3d 872, 874 (9th Cir. 1994). The general counsel for the Council seems to agree as well:

> The Council's authority in the fish and wildlife area is constrained; it can guide, but not command, federal river management. The investment of federal hydropower revenues to help fish and wildlife must be "consistent" with the Council's [P]rogram, but . . . [BPA] actually writes the checks. The Council has no authority over fish and wildlife agencies, land managers, or irrigators. The Council is not toothless, but it cannot command and control.

John M. Volkman & Willis E. McConnaha, *Through a Glass Darkly: Columbia River Salmon, the Endangered Species Act, and Adaptive Management*, 23 ENVTL. L. 1249, 1254 (1993) (citation omitted). *But see* Michael C. Blumm, et. al., *Beyond the Parity Promise: Struggling to Save Columbia Basin Salmon in the 1990s*, 27 ENVTL. L. 21, 64-65 (1997) (arguing that the Council's program is no less enforceable than biological opinions implementing the Endangered Species Act).

[113] 1994 PROGRAM, *supra* note 81, at 5-46 to 5-47.

[114] 1994 PROGRAM, *supra* note 81, at 5-46; *see also* PHILLIP R. MUNDY ET AL., TRANSPORTATION OF JUVENILE SALMONIDS FROM HYDROELECTRIC PROJECTS IN THE COLUMBIA RIVER BASIN: AN INDEPENDENT PEER REVIEW 7, 14 (May 1994) (smolt transportation began in the Basin in the late 1960s and early 1970s, NMFS transported fish for research projects at Snake River dams throughout the 1970s, and the Corps first began transporting all smolts collected at Snake River dams in 1981).

[115] 1994 PROGRAM, *supra* note 81, at 5-47.

[116] 1994 PROGRAM, *supra* note 81, at 5-47.

[117] 1994 PROGRAM, *supra* note 81, at 5-48.

The Council's program calls for the Corps to aid in increasing juvenile salmon survival rates by (1) increasing river flows on the Columbia[118] and Snake[119] Rivers, (2) spilling water over the tops of Corps dams (as opposed to releasing water through the turbines),[120] and (3) performing other actions to improve river conditions.[121]

The Council also has called on the Corps to drawdown the reservoir levels of certain projects to aid in juvenile migration. The first drawdown on the

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[118] 1994 PROGRAM, *supra* note 81, at 5-28 to 5-31. The Council calls for sliding scale monthly flow targets at The Dalles Dam for a three-year period, beginning at 300,000 cubic feet per second (cfs) in the first year and declining to 260,000 cfs and 220,000 cfs. *Id*. at 5-29. John Day Dam is also to be maintained at the minimum irrigation pool (MIP) level to aid in spring salmon migration. *Id*. at 5-29 to 5-30. MIP is the lowest level at which irrigation pumps at a Corps project will operate effectively. *Id*. at 5-29.

[119] 1994 PROGRAM, *supra* note 81, at 5-20 to 5-24. A minimum monthly flow average of 85,000 cfs to 140,000 cfs is in place at Lower Granite for the spring migration. *Id*. at 5-20. The summer monthly flow target at Lower Granite is 50,000 cfs. *Id*. at 5-20. Dworshak may also be used by the Corps to aid in Snake River flow increases. *Id*. at 5-20 to 5-21, 5-23.

[120] 1994 PROGRAM, *supra* note 81, at 5-40 to 5-41. The Council's program calls for the Corps to spill water over its mainstem projects to achieve 80% fish passage efficiency (FPE). *Id*. at 5-40. FPE is the total number of fish that pass a dam without passing through the turbines. *Id*. at G-5.

However, spill may cause nitrogen supersaturation in smolts, which can lead to gas bubble trauma under certain conditions. *See, e.g.*, 1995 BIOP, *supra* note 78, at 48. Thus, the Council's program requires all spill to be consistent with state water quality levels set under the Clean Water Act. 1994 PROGRAM, *supra* note 81, at 5-36, 5-40. The Corps must also perform a study on dissolved gas supersaturation and fund or install certain dissolved gas monitoring and abatement measures. *Id*. at 5-40 to 5-41.

A spill program at mainstem dams had been in place since December 31, 1988, when in order to settle a lawsuit, BPA, fishery agencies, tribes, and utility representatives negotiated a ten-year spill agreement covering Lower Monumental, Ice Harbor, John Day, and The Dalles Dams. Id. at 5-36; *see also Unraveling Parity*, *supra* note 82, at 699-700 (discussing the lawsuit and the settlement). The Council adopted the spill agreement as part of its program in 1989. *Id*. But the Council's 1994 program differs in two ways from the old spill agreement: (1) the adoption of a higher FPE rate, and (2) a call for spill at all Snake River projects instead of merely at Lower Monumental and Ice Harbor. *See* 1994 PROGRAM, *supra* note 81, at 5-36.

[121] The Council's program includes other measures to improve passage in the Columbia and Snake Rivers, including a requirement that the Corps ensure a 98% or greater salmon survival rate "in all bypass and collection facilities from the deflector screens or surface bypass system entrances to the end of the bypass system outfall." 1994 PROGRAM, *supra* note 81, at 5--37. The Corps is to also help implement measures to benefit juveniles by reducing predation s and competition. *Id*. at 5-42 to 5-46 (emphasizing measures to reduce the population of squawfish in the Columbia and Snake Rivers, expecting a greater than 50% reduction in consumption of juveniles).

Columbia River was to begin in 1996 at John Day Dam.[122] Phased drawdowns on the lower Snake River were to begin in 1995 and continue through 2002.[123]

The Council's program also calls on the Corps to perform other fish and wildlife measures, including (1) aiding in improving adult salmon migration;[124] (2) aiding in restoring weak stocks and habitat;[125] (3) protecting

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[122] John Day was the only drawdown called for on the Columbia River by the Council. By April 15, 1996, the Corps and BPA were to operate John Day at minimum operating pool (MOP) year-round. 1994 PROGRAM, *supra* note 81, at 5-32 (conditioned on full, prior mitigation to irrigators and other water users). MOP is the lowest water level at a project at which navigation locks can still operate. *Id*. at G-9. The Corps and BPA were to (by April 30, 1996) complete a review of any operational or design changes necessary to operate John Day at near-spillway level by 2002. *Id*. at 5-32 (John Day could possibly be operated at near-spillway level either (1) from May 1 to August 31 of each year or (2) year-round). A spillway is the channel or passageway around or over a dam through which excess water is released or "spilled" without passing through the turbines. *Id*. at G-12 (a spillway operates as a safety valve for a dam and must be able to discharge major floods without damaging the dam, while also maintaining the reservoir level below some predetermined maximum level). Thus, a drawdown to near-spillway level is a drawdown to a level near this structure.

[123] For the spring migration season of 1995, the Corps was to drawdown Lower Granite to an elevation of 710 feet. *Id*. at 5-25 (the Corps and BPA were also charged with securing any funds necessary to permit the drawdown, including mitigation costs). In 1996, Lower Granite was to be drawn down to an elevation of 690 feet for the spring migration season. *Id*. at 5-26. Lower Granite drawdowns are to continue until 2002. *Id*.

Little Goose is to be drawn down to near-spillway level for the spring migration season in 1999. *Id*. This drawdown will also continue until 2002. *Id*. In 2002, the Council will determine whether to drawdown the two remaining lower Snake River projects—Lower Monumental and Ice Harbor. *Id*. at 5-27. These drawdowns could be to either spillway or natural river levels. *Id*.

[124] *Id*. at 6-1 to 6-6. These measures include upgrading existing adult fish passage facilities, continued research, and the possible use of releases from Dworshak reservoir for temperature control. *Id*. (Dworshak must be above an elevation of 1,520 feet at the end of July before its use for temperature control can be used).

[125] *Id*. at 7-31. The Corps, along with BPA and the Bureau, is to fund a status report (to be presented to the Council) on Pacific lamprey populations in the Basin. *Id*. The Corps is called upon to develop and implement procedures that comply with the Council's habitat goal, which is to "[p]rotect and improve habitat conditions to ensure compatibility with the biological needs of salmon, steelhead[,] and other fish and wildlife species." *Id*. at 7-33 to 7-36. *See also id*. at 7-47 (the Corps is required to propose and fund water quality monitoring stations in the Basin by mid-1995 and fund a comprehensive assessment of all existing and planned dredging activities in the mainstem Columbia and Snake Rivers by December 31, 1997).

The Corps must also implement measures in the Willamette River subbasin. The Corps was to examine the feasibility of installing temperature control devices at Detroit Dam on the North Santiam River, and Cougar and Blue River Dams in the McKenzie River Basin. *Id*. (March 31, 1996 deadline for Detroit; March 31, 1995 deadline for Cougar and Blue River). The Corps must also begin consultations for the development of a storage agreement that would ensure the minimum flows necessary to protect salmon and steelhead below Willamette

resident fish;[126] and (4) imposing conditions for future hydroelectric development that ensure adequate fish and wildlife protection.[127]

(3) Environmental Regulation

(A) The National Environmental Policy Act

The National Environmental Policy Act (NEPA)[128] requires the Corps (and any other federal agency) to complete a detailed statement on the environmental impacts of any "major Federal actions significantly affecting the quality of the human environment."[129] This environmental impact statement (EIS) must examine: (1) the environmental impact of the proposed action; (2) any unavoidable adverse environmental effects; and (3) alternatives to the proposed action.[130]

(continued)

River projects. *Id*. The Corps is also to study the effects on steelhead runs from fluctuating flows at Green Peter Dam. *Id*. at 7-57. The Corps is also to evaluate alternative methods that may be utilized to provide "adequate downstream fish passage" at Foster Dam. *Id*. at 7-59.

[126] If integrated rule curves at Hungry Horse Dam (contained in the Council's Program to aid in the protection of kokanee in the Flathead River) are exceeded for flood control purposes, the Corps must fund the mitigation of fish losses due to flood control operations. *Id*. at 10-6. The same is true for Libby Dam. *Id*. at 10-7 to 10-9 (at Libby the Corps is also called upon to develop operating procedures that ensure sufficient flows are provided to protect resident fish in the Kootenai River and Lake Koocanusa). The Corps must also assist in developing recommendations for mitigation of resident fish near Dworshak Dam. *Id*. at 10-10 (the Corps is also to fund fish stocking activities around Dworshak consistent with the MOU between the Corps and the Idaho Department of Fish and Game). And the Corps is to fund studies on salmon and spiny-rayed fish in the Pend Oreille River, and kokanee in Lake Pend Oreille. *Id*. at 10-14 to 10-15.

[127] *Id*. at 12-1 to 12-6.

[128] 42 U.S.C. §§ 4321 to 4370d (1994).

[129] 42 U.S.C. § 4332(2)(C). For a discussion of what constitutes a "major federal action," see GEORGE C. COGGINS & ROBERT L. GLICKSMAN, 2 PUBLIC NATURAL RESOURCES LAW §§ 10G.03[2] to 10G.04 (1996). There has been much litigation surrounding what is a "major" action, *see id*. § 10G.04, and what is a "federal" action. *Id*. § 10G.03[2] (the key factor in determining whether an action is "federal" is the "agency's authority to influence significant nonfederal activity. . . . [T]he federal agency must possess actual power to control the nonfederal activity") (quoting Sierra Club v. Hodel, 848 F.2d 1068, 1089 (10th Cir. 1988)); *see also* 40 C.F.R. § 1508.18 (1996).

[130] 42 U.S.C. §§ 4332(2)(C)(i)-(v). The EIS must also examine the short-term use of the environment in relation to the maintenance of long-term productivity, and any irreversible and irretrievable commitments of resources. *Id.*

The NEPA process has been codified in regulations promulgated by the Council on Environmental Quality (CEQ).[131] Under these regulations, the Corps must first determine whether an EIS is necessary for a proposed action.[132] The Corps must determine whether the proposed action normally requires an EIS under its own NEPA regulations.[133] If the activity is one that does not normally require an EIS, the Corps must prepare an environmental assessment (EA).[134]

An EA is a "concise public document" which determines on a case by case basis if an EIS is necessary.[135] After completion of an EA, the Corps issues a finding of no significant impact (FONSI) if it determines that no EIS is required.[136] Otherwise, the Corps must initiate the EIS process.[137]

The first stage of the EIS process involves "scoping."[138] The Corps must ensure through the scoping process that the EIS adequately considers the environmental impacts of the proposed action.[139] An EIS is prepared in two

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[131] CEQ's NEPA regulations can be found at 40 C.F.R. pt. 1500. The CEQ was created by NEPA. *See* 42 U.S.C. §§ 4341 to 4347. CEQ regulations are entitled to substantial deference regarding NEPA's requirements, Andrus v. Sierra Club, 442 U.S. 347, 358 (1979), and are binding on all federal agencies. 40 C.F.R. § 1500.3 (declaring that 40 C.F.R. pts. 1500 to 1508 are binding on federal agencies). In addition, federal agencies must promulgate their own NEPA regulations to supplement the CEQ regulations. 40 C.F.R. § 1507.3(a). *See* 33 C.F.R. pt. 230 for the Corps' NEPA regulations.

[132] *See* 40 C.F.R. § 1501.4.

[133] *Id*. § 1501.4(a). Certain proposed actions deemed "categorical exclusions" are exempt from the NEPA documentation process; such actions require neither an EA nor EIS. *Id*. §§ 1508.4, 1501.4(a)(2). CEQ defines categorical exclusion as "a category of actions which do not individually or cumulatively have a significant effect on the human environment and which have been found to have no such effect in procedures adopted by a Federal agency in implementation of these regulations." 40 C.F.R. § 1508.4. The Corps must specify the criteria for any categorical exclusions in its regulations. *Id*. § 1507.3(b)(1), (2).

[134] 40 C.F.R. § 1501.4(b).

[135] 40 C.F.R. § 1508.9. An EA must provide "sufficient evidence and analysis" to determine if an EIS is necessary. *Id*. § 1508.9(a)(1). An EA may also be use to aid in the Corps' compliance with NEPA when no EIS is required. *Id*. § 1508.9(a)(2).

[136] 40 C.F.R. § 1501.4(e). A FONSI must include the EA (or a summary of it) and any other environmental documents related to the EA. *Id*. § 1508.13.

[137] 40 C.F.R. 1501.4(d).

[138] Scoping is an "early and open process" to (1) determine the scope of issues to be addressed and (2) identify the significant issues related to the proposed action. 40 C.F.R. § 1501.7. The Corps must invite affected (1) federal, state, and local agencies, (2) Indian tribes, and (3) other interested persons to participate in the scoping process. *Id*. § 1501.7(a)(1).

[139] The Corps must examine three types of actions (connected, cumulative, and similar), three types of alternatives (no action, other reasonable courses of action, and mitigation measures), and three types of impacts (direct, indirect, and cumulative) to determine the scope of the EIS. 40 C.F.R. § 1508.25(a)-(c).

stages—a draft EIS (DEIS), followed by a final EIS (FEIS)—which may be supplemented as well.[140] Upon completing a DEIS, the Corps must obtain the comments of federal agencies with jurisdiction or special expertise concerning the environmental impacts involved.[141] An FEIS must respond to the comments,[142] and is the document relied on by the Corps in making its final decision.[143] The Corps' final decision is issued in a record of decision (ROD).[144]

In conjunction with BPA and the Bureau, the Corps issued a FEIS in November of 1995 on the environmental impacts of the operation of the FCRPS, entitled the System Operation Review (SOR).[145] The SOR's preferred alternative—one of thirteen alternatives examined in the SOR—[146]consisted of the measures contained in the 1995 NMFS BiOp on the operation of the FCRPS and its effects on listed Snake River salmon.[147]

In 1990, Congress specifically included environmental protection among the Corps' primary missions when planning, designing, constructing, operating, and maintaining water resources projects.[148] However, Congress qualified

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[140] 40 C.F.R. § 1502.9. *See id.* § 1502.9(c) for circumstances which require the Corps to supplement an EIS.

[141] 40 C.F.R. § 1503.1(a)(1). The Corps must request the comments of appropriate state and local agencies, Indian tribes, the public, and any agency that has requested it be notified of actions similar to that proposed. *Id.* § 1503.1(b).

[142] 40 C.F.R. § 1502.9(b).

[143] CEQ's regulations outline the procedures the Corps must follow in its decisionmaking to comply with NEPA. 40 C.F.R. § 1505.1.

[144] 40 C.F.R. § 1505.2. A ROD must contain certain findings: (1) the decision itself; (2) all the alternatives considered (specifying the alternatives which were considered to be "environmentally preferable"); (3) the factors balanced by the agency in making its decision; and (4) whether "all practicable means to avoid or minimize environmental harm from the alternative selected have been adopted, and if not, why they were not." *Id.* §§ 1505.2(a)-(c). A monitoring and enforcement program for mitigation of the environmental impacts of the decision (if applicable) must also be adopted in the ROD. *Id.* § 1505.2(c). The Corps may also take further future actions to ensure that its decision is implemented. *Id.* § 1505.3.

[145] U.S. ARMY CORPS OF ENGINEERS, NORTH PACIFIC DIVISION ET AL., COLUMBIA RIVER SYSTEM OPERATION REVIEW: FINAL ENVIRONMENTAL IMPACT STATEMENT (Nov. 1995) (consisting of 20 technical appendices labeled "A" to "T"). A summary of the SOR is also available. SOR SUMMARY, *supra* note 2. The EIS process for the operation of the FCRPS began in 1990. *Id.* at 2.

[146] The SOR contained seven strategies, encompassing 13 alternatives. SOR SUMMARY, *supra* note 2, at 13. Summaries of the strategies and alternatives can be found at *id.* at 14-38.

[147] *Id.* at 34-37 (the preferred alternative also consisted of the measures contained in the USFWS's 1995 BiOp concerning the operation of the FCRPS and its effect on listed white sturgeon). *See infra* §§ 2.7(2)(A) (NMFS BiOp), 2.8(2)(A) (USFWS BiOp).

[148] 33 U.S.C. § 2316(a).

this mission by specifying that the Corps' environmental protection efforts should not affect its existing authorities, including those relating to navigation and flood control.[149]

(B) Wetlands Regulation

In addition to being a water resource developer, the Corps also has significant regulatory responsibilities. The Corps regulates the quality and quantity of the nation's wetlands under section 404 of the Clean Water Act.[150] The Corps operates a permit system for the discharge of dredge and fill materials into the "navigable waters" of the United States at specified disposal sites.[151] The term "navigable waters" is statutorily defined as "the waters of the United States."[152] The Corps' regulations define "waters of the United States" to mean virtually all waters and wetlands.[153]

The Corps may deny section 404 permits if the discharge of dredge or fill will have "an unacceptable adverse effect on municipal water supplies, . . . fishery

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[149] 33 U.S.C. § 2316(b).

[150] 33 U.S.C. § 2317. Congress set an interim goal of "no overall net loss of the Nation's remaining wetlands base, as defined by acreage and function." *Id*. § 2317(a)(1). Congress's long-term goal was to actually increase the quality and quantity of the nation's wetlands. *Id*.

[151] *See id*. § 1344. Corps' definitions for "dredged material," "fill material," and the "discharge" of each can be found at 33 C.F.R. §§ 323.2(c)-(f).

[152] 33 U.S.C. § 1362(7). The Corps further defines "navigable waters of the United States" as "those waters that are subject to the ebb and flow of the tide and/or are presently used, or have been in the past, or may be susceptible for use to transport interstate or foreign commerce." 33 C.F.R. § 329.4.

[153] 33 C.F.R. § 328.3(a). "Waters of the United States" includes: (1) all waters used (currently or in the past) or susceptible to use in interstate commerce; (2) all interstate waters (including interstate wetlands); (3) all waters whose use, degradation, or destruction could affect interstate commerce; (4) impoundments of water meeting the Corps' definition of "waters of the United States;" (5) tributaries of any waters meeting the description of (1)-(4); (6) the territorial seas; and (7) wetlands that are adjacent to any waters (other than waters that are wetlands) meeting the description of (1)-(6). *Id*. "Prior converted cropland" and "waste treatment systems" are specifically excluded from the Corps' definition of "waters of the United States." *Id*.

The Corps' regulations define "wetlands" as "areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas." *Id*. at § 328.3(b).

areas (including spawning and breeding areas), wildlife, or recreational areas."[154] Under the Corps' regulatory scheme, two types of permits may be issued: individual permits and general permits.

Individual permit applications are filed with a Corps District Engineer.[155] Issuance of section 404 permits must comply with the NEPA process,[156] and is subject to a public interest review to ensure the activity (and any probable and cumulative impacts of the activity) will not be "contrary to public interest."[157] Permits may contain limitations or conditions to ensure the protection of the public interest.[158] The Corps issues individual permits for either a specified or indefinite period.

The Corps issues general permits on a nationwide or regional basis for categories of activities created by the Corps.[159] These activities must be "substantially similar in nature and cause only minimal individual and cumulative environmental impacts."[160] Regional general permits are issued under the same procedures used for individual permits.[161]

Nationwide general permits are "designed to regulate with little, if any, delay or paperwork."[162] Nationwide permits are limited to five years[163] and may be

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[154] 33 U.S.C. § 1344(c). This determination is made in conjunction with Environmental Protection Agency (EPA) guidelines, and EPA possesses a veto over Corps' permit decisions. *See infra* notes 166-67, and accompanying text.

[155] *See* 33 C.F.R. § 325.1(b).

[156] *See* 33 C.F.R. § 325.2(a)(4). Corps NEPA procedures are at 33 C.F.R. pt. 230. For statistical data on individual permits evaluated and issued by the Corps, see U.S. CORPS OF ENGINEERS REGULATORY BRANCH, SECTION 404 OF THE CLEAN WATER ACT AND WETLANDS: SPECIAL STATISTICAL REPORT (July 1995).

[157] 33 C.F.R. § 320.4(a). The Corps must perform a "careful weighing" of these impacts in "each particular case." *Id*. The Corps must balance the reasonably expected benefits of the activity against the reasonably foreseeable detriments. *Id*.

[158] 33 C.F.R. § 325.4(a).

[159] *Id*. § 322.2(f).

[160] *Id*. § 322.2(f)(1).

[161] *See id*. §§ 330.2, 325. For information on general permits issued on either a nationwide or regional basis, see U.S. ARMY CORPS OF ENGINEERS REGULATORY PROGRAM, GENERAL PERMIT SUMMARY (Jan. 1996).

[162] *Id*. § 330.1(b).

[163] *Id*. § 330.6(b).

revoked or modified after an opportunity for public notice and comment.[164] There are currently 39 nationwide general permits.[165]

The Environmental Protection Agency (EPA) and the USFWS assist the Corps in regulating wetlands development. The Corps must use EPA guidelines when specifying disposal sites,[166] and EPA has a veto over Corp's permit decisions.[167] Under the Fish and Wildlife Coordination Act,[168] the USFWS must submit comments on all permit applications to the Corps concerning impacts on fish and wildlife populations and habitat.[169] The Corps gives "full consideration" to these recommendations, but may still issue a section 404 permit over USFWS objections.[170]

States may also assume administration of certain parts of the section 404 program.[171] The state program is still subject to EPA approval and oversight, and EPA may withdraw approval after a public hearing if the state fails to properly administer its program.[172] None of the four states in the Columbia River Basin have assumed responsibility for wetlands regulation under the section 404 program.[173]

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[164] *Id*. §§ 330.1(c), 330.5.

[165] *See* Final Notice of Issuance, Reissuance, and Modification of Nationwide Permits, 61 Fed. Reg. 65,874, 65,913 (1996) (the Corps has also reserved one nationwide general permit category for future possible use). Nationwide permit 26, however, is only good for two years, expiring in 1998. *Id*. at 65,891.

[166] 33 U.S.C. § 1344(b). *See also id*. § 1251(d). EPA's guidelines are at 40 C.F.R. pt. 230.

[167] *Id*. § 1344(c). EPA must consult with the Corps before making this determination, and any denial must be made public and in writing. *Id*. *See also* 40 C.F.R. § 231.3(a)(1).

[168] *See supra* § 2.1(2)(B).

[169] 33 U.S.C. § 1344(m). *See also* 33 C.F.R. § 320.4(c).

[170] 33 C.F.R. § 320.4(c). The Fish and Wildlife Coordination Act requires the Corps to give "full consideration" to the USFWS recommendations. 16 U.S.C. § 662(b). The Corps must include in its project plan "such justifiable means and measures for wildlife purposes" that the USFWS recommends "to obtain maximum overall project benefits." *Id*. However, project plans are subject to review by the Corps and Congress. *See id*. *See also supra* § 2.1(2)(B).

[171] 33 U.S.C. §§ 1251(b), 1344(g), (h).

[172] *Id*. § 1344(i).

[173] Michigan and New Jersey are the only states with approved 404 programs. *See* Peg Bostik, *Michigan Section 404 Program Update*, NAT'L WETLANDS NEWSL., July/Aug. 1989, at 5; Stephen Brown, *Michigan: An Experiment in Section 404 Assumption*, NAT'L WETLANDS NEWSL., July/Aug. 1989, at 5; *Envtl. Policy Alert* (Envtl. L. Inst.), Dec. 22, 1993, at 13 (noting New Jersey's assumption of the 404 program); 58 Fed. Reg. 36,958 (1993) (announcing that New Jersey had completed the application process to take over the 404 program). In addition, Oregon is currently negotiating assumption of the 404 permit program with the Corps. A bill directing the Division of State Lands to streamline the process for administering removal-fill permits, includes a mandate to apply to the Corps for a state program general permit assuming administration of the federal permitting program is under

(4) Land Management

(A) Property Management Powers

The Corps can acquire property for a variety of purposes, including (1) land, easements, and rights of way for flood control projects;[174] (2) title, land, and waters to aid in wildlife conservation at Corps projects;[175] and (3) land and interests in land to aid in fish and wildlife mitigation for new water resource projects.[176] The Secretary of the Army also has property acquisition power.[177]

The Secretary of the Army also has authority to grant easements over, and leases for, property within Corps projects.[178] However, it is important to note that the Corps has the responsibility to acquire, manage, and dispose of all land used by the Department of the Army for "river and harbor, flood control and allied purposes."[179] The Secretary may grant easements for rights-of-way over Corps projects for certain enumerated purposes.[180] However, these

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consideration in the Oregon Legislature. S. 207, 69th Oregon Legislative Assembly (1997).

[174] 33 U.S.C. § 701c-1; *see also supra* § 2.1(1)(B).

[175] 16 U.S.C. § 663(c); *see also supra* § 2.1(2)(B).

[176] 33 U.S.C. § 2283; *see also supra* § 2.1(2)(C).

[177] 10 U.S.C. § 2672(a)(1) (1994) (the Secretary may acquire any interest in land if she determines it is in the interest of national defense and does not cost more than $200,000).

[178] For Department of Army regulations concerning the property management powers of the Secretary, see 32 C.F.R. pts. 643 to 644 (1996).

[179] 33 C.F.R. § 211.3(a). Army regulations give the Corps the responsibility to "arrang[e] for the use of real estate" that is available for "non-Army use." 32 C.F.R. § 643.4(a).

[180] 10 U.S.C. § 2668(a). This section authorizes easements to ditches and canals, *id.* §§ 2668(a)(4), (5), and to access dams and reservoirs for fish and wildlife programs, hatcheries, and "other improvements relating to fish-culture." *Id.* § 2668(a)(8); *see also* 33 C.F.R. § 211.6(b)(1)(iii). The Secretary may grant no more land than is necessary. 10 U.S.C. § 2668(b); *see also* 33 C.F.R. § 211.6(b)(2)(ii) (the Corps regulations' use the language "reasonably necessary," while the statute merely says "necessary").

If the easement is for power or communication purposes, it is limited to 50 years. 43 U.S.C. § 961; *see also* 33 C.F.R. § 211.6(b)(1)(i). Power and communication easements for rights-of-way can be lost if abandoned or not used for a two-year period. 43 U.S.C. § 961. Power and communication easements must also be in the public interest. *Id.*; *see also* 33 C.F.R. § 211.6(b)(1)(i).

The Secretary is also specifically authorized to grant easements for rights-of-way for gas, water, and sewer pipe lines. 10 U.S.C. § 2669(a); *see also* 33 C.F.R. § 211.6(b)(1)(ii). These grants must also be in the public interest, 10 U.S.C. § 2669(a), and can be terminated by the Secretary. *Id.* §§ 2669(c)(1)-(3) (listing the grounds for termination: (1) failure to comply with the terms of the grant, (2) nonuse, and (3) abandonment). The easement may contain no more land than is necessary. *Id.* § 2669(b).

Congress specifically differentiated between easements granted for general purposes such as access to canals or ditches or reservoirs used for fish and wildlife programs (43 U.S.C. § 2668) and those granted for power or communication purposes or gas, water, or sewer pipelines (43 U.S.C. §§ 961, 2669). Certain procedures and reporting requirements differ between the three sections.

grants must be in the public interest,[181] and can be terminated by the Secretary.[182] If the Corps recommends, the Secretary may also exchange property for river and harbor improvement and flood control projects.[183]

Both the Secretary and the Corps,[184] are authorized to grant leases, except on oil, mineral, or phosphate lands.[185] The leases are limited to five years[186] and revocable,[187] unless it would be in the public interest to do otherwise.[188] Before entering into a lease, the Secretary must consult with EPA to determine if the "environmental condition" of the property is such that the proposed lease is "advisable."[189]

(continued)

The Secretary may also grant rights-of-way for public roads and streets on lands used for river and harbor and flood control improvements. 33 U.S.C. § 558c. These rights-of-way must be in the public interest, and can be annulled and forfeited for (1) failure to comply with the terms of the grant and (2) abandonment. *Id*.

[181] 10 U.S.C. § 2668(a). *See also* 33 C.F.R. § 211.6(b)(2)(i).

[182] 10 U.S.C. § 2668(c)(1)-(3) (listing the grounds for termination of the grant: (1) failure to comply with the terms of the grant, (2) nonuse for a two-year period, and (3) abandonment). *See also* 33 C.F.R. § 211.6(b)(2)(iii).

[183] 33 U.S.C. §§ 558b to 558b-1; *see also* 33 C.F.R. §§ 211.12, 211.13.

[184] *See* 33 C.F.R. § 211.7(a) (granting leasing authority to Division Engineers and certain District Engineers, subject to prior approval by the Chief of Engineers).

[185] 10 U.S.C. § 2667(c). The Secretary may lease lands for any purpose he feels will promote the national defense or be in the public interest. Id. § 2667(a). The Secretary also has the authority to lease lands for recreational purposes if such use is determined to be in the public interest. 16 U.S.C. § 460d; *see also supra* § 2.1(1)(F).

[186] 10 U.S.C. § 2667(b)(1).

[187] 10 U.S.C. § 2667(b)(3).

[188] 10 U.S.C. §§ 2667(b)(1), (3).

[189] 10 U.S.C. § 2667(f)(3). The Secretary and the EPA Administrator must enter into a memorandum of understanding to set forth the procedures required by this 1990 amendment. *Id*.

2.2 The Bureau of Reclamation

The Bureau of Reclamation (the Bureau), within the Department of the Interior,[1] is primarily responsible, under the Reclamation Act of 1902,[2] for the "construction and maintenance" of projects "for the storage, diversion, and development of waters for the reclamation of arid and semiarid lands in the western United States."[3] Projects can include dams, water storage facilities, and other assorted irrigation works. Originally, the Bureau's primary mission was to provide water exclusively for irrigation purposes; however, other authorized uses of Bureau water now include hydropower, municipal and industrial uses, flood control, navigation, recreation, and fish and wildlife mitigation and enhancement.[4]

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[1] The Secretary of the Interior is vested with the authority to carry out the provisions of the Reclamation Act. 43 U.S.C. § 373 (1994). However, the Bureau administers the Act under the supervision and direction of the Secretary. *Id*. § 373a.

[2] 32 Stat. 388 (1902) (codified as amended in scattered sections of 43 U.S.C., ch. 12).

[3] 43 U.S.C. §§ 391, 411. The Bureau is also authorized to conduct surveys in preparation for the construction of irrigation works. *Id*. § 411.

[4] Bureau projects may be authorized for several uses in addition to irrigation, either in the authorizing statute for the particular project or under certain sections of the Reclamation Act.

> When a project has multiple purposes, complicated decisions must be made regarding how to operate the project to serve those purposes. The statutes authorizing a project must be consulted first. Then one should ascertain whether there are any joint operating agreements between federal agencies . . .. Relative to this concern, of course, one should always determine who is in the ultimate administrative position of authority for particular types of decisions . . . . Assuming that there is no clear violation of a statutory directive and that the proper official is making the choices, the courts will afford considerable deference to operational decisions.

Amy K. Kelley-Pittman, *Federal Reclamation Law, in* 4 WATERS AND WATER RIGHTS 412 n. 223 (Robert E. Beck ed., 1991).

In addition, any Bureau project built with federal funds is subject to Corps' flood control regulations. 33 U.S.C. § 709 (1994); *see also* 33 C.F.R. § 208.11 (1996) (Corps' flood control regulations). *See infra* § 2.2(1)(D) and *supra* § 2.1(1)(B).

(1) Water Management

(A) Columbia River Basin Projects

The Bureau owns and operates[5] nine major[6] dams and reservoirs in the Columbia River Basin, most notably Grand Coulee[7] on the Columbia and Hungry Horse[8] on the Flathead River in Montana.[9] Water from these major dams and other irrigation works authorized by the Reclamation Act is

[5] 43 U.S.C. § 498 (however, management and operation responsibilities of Bureau projects may be transferred to project beneficiaries who have completed the payments required by the Reclamation Act).

[6] Dams considered "major" are either the largest projects in the Columbia River Basin or "those that have a significant role in river system management." U.S. DEP'T OF ENERGY, BONNEVILLE POWER ADMINISTRATION, U.S. DEP'T OF THE ARMY, CORPS OF ENGINEERS, NORTH PACIFIC DIVISION, U.S. DEP'T OF THE INTERIOR, BUREAU OF RECLAMATION, PACIFIC NORTHWEST REGION, THE COLUMBIA RIVER SYSTEM: THE INSIDE STORY 10 (Sept. 1991).

[7] Grand Coulee was authorized by Congress in 1935. River and Harbor Act of 1935, ch. 8, § 2, 49 Stat. 1028, 1039-40 (1935). The act gave the President the authority to designate an agent to "construct, operate, and maintain the dam." *Id*. at 1040. President Franklin D. Roosevelt designated the Bureau as the agent. *See* Michael C. Blumm, *Hydropower vs. Salmon: The Struggle of the Pacific Northwest's Anadromous Fish Resources for a Peaceful Coexistence with the Federal Columbia River Power System*, 11 ENVTL. L. 211, 227 n. 70 (1981).

[8] Congress ordered the completion of Hungry Horse in 1944, giving control of the dam to the Bureau. Act of June 5, 1944, ch. 234, § 1, 58 Stat. 270 (1944) (codified at 43 U.S.C. § 593a). *See also* Blumm, *supra* note 6, at 232.

[9] *See* NORTHWEST POWER PLANNING COUNCIL, 2 1991 NORTHWEST CONSERVATION AND ELECTRIC POWER PLAN 69 (1991) [hereinafter 1991 POWER PLAN]. Grand Coulee and Hungry Horse are part of the 14 dams in the FCRPS, operated by the Bureau (two dams) and the Corps (12 dams), with the resulting hydropower generated from these projects marketed by the Bonneville Power Administration (BPA). U.S. ARMY CORPS OF ENGINEERS, NORTH PACIFIC DIV. ET AL., COLUMBIA RIVER SYSTEM OPERATION REVIEW: FINAL ENVIRONMENTAL IMPACT STATEMENT, SUMMARY 2, 46 (Nov. 1995) [hereinafter SOR SUMMARY].

Other Bureau dams in the Basin are on the Snake River (Minidoka and Palisades), Boise River (Boise Diversion and Anderson Ranch), Payette River (Black Canyon), and Yakima River (Chandler and Roza). U.S. DEP'T OF ENERGY, BONNEVILLE POWER ADMINISTRATION, U.S. DEP'T OF THE ARMY, CORPS OF ENGINEERS, NORTH PACIFIC DIVISION, U.S. DEP'T OF THE INTERIOR, BUREAU OF RECLAMATION, PACIFIC NORTHWEST REGION, THE COLUMBIA RIVER SYSTEM: THE INSIDE STORY 11 (Sept. 1991).

delivered to various Bureau projects throughout the Basin. There are numerous Bureau projects in the Basin: ten in Idaho,[10] four in Montana,[11] twelve in Oregon,[12] and six in Washington.[13]

Under the Reclamation Act, no project may be constructed unless recommended by the Secretary of the Interior and approved by the "direct order" of the President.[14] Congress need not authorize a particular project, but congressional appropriations are necessary to initiate, complete, or extend any Bureau project.[15] Unless a specific authorizing statute delineates project boundaries, the Secretary of the Interior has some discretion in choosing the irrigable lands and districts to which project water can be applied.[16]

(B) Irrigation

Since 1902, the Bureau has constructed and operated dams, reservoirs, and canals to reclaim, primarily through irrigation, the arid lands in the West, including lands within the Columbia River Basin.[17] Despite the expansion of

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[10] *See* BUREAU OF RECLAMATION, PACIFIC NORTHWEST REGION, RECLAMATION IN THE NORTHWEST: AN OVERVIEW 1994, at 18 (1994). These projects are: Avondale, Boise, Dalton Gardens, Lewiston Orchard, Little Wood River, Mann Creek, Michaud Flats, Minidoka, Palisades, Rathdrum Prairie. *Id*.

[11] *Id*. at 33 (Bitter Root, Frenchtown, Hungry Horse, and Missoula Valley).

[12] *Id*. at 23 (Arnold, Baker, Burnt River, Crescent Lake Dam, Crooked River, Deschutes, Owyhee, The Dalles, Tualatin, Umatilla, Vale, Wapanita). The Bureau operates two other projects in Oregon—Grants Pass and Rogue River Basin—that are not in the Columbia River Basin. *Id*.

[13] *Id*. at 29 (Chief Joseph Dam, Columbia Basin, Okanogan, Spokane Valley, Wapato Indian, Yakima).

[14] 43 U.S.C. § 413.

[15] 43 U.S.C. § 414.

[16] *See* Richard Roos-Collins, *Voluntary Conveyance of the Right to Receive a Water Supply from the United States Bureau of Reclamation*, 13 ECOLOGY L.Q. 773, 807 (1987). However, the Secretary may not recommend a project for Congressional authorization until feasibility studies are complete. Such studies must include information about the proposed project area concerning the water supply, engineering features, construction costs, land prices, and the approximate costs of development. 16 U.S.C. § 412 (1994). After reviewing such studies, the Secretary must make written findings that (1) the project is feasible, (2) the lands reclaimed by the project are "adaptable for actual settlement," and (3) the costs of the project will be returned to the United States. *Id*.

[17] *See* GEORGE C. COGGINS & ROBERT L. GLICKSMAN, 3 PUBLIC NATURAL RESOURCES LAW § 21B.01 (1996); Kelley-Pittman, *supra* note 4, at 382. Reclamation projects are located in seventeen states: Arizona, California, Colorado, Idaho, Kansas, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oklahoma, Oregon, South Dakota, Texas, Utah, Washington, and Wyoming. *See* 43 C.F.R. § 426.4(hh) (1995).

authorized uses for Bureau projects (including hydropower, flood control, and recreation), irrigation remains the principal focus of Bureau activities. The Bureau operates nine major dams[18] and numerous other irrigation works in the Basin.[19] The Bureau is also authorized to construct and operate irrigation works at federal dams operated by the United States Army Corps of Engineers (the Corps).[20] The Bureau may delegate the authority to manage irrigation works to project beneficiaries.[21] The Secretary of the Interior, through the Bureau, is authorized to perform any acts and promulgate any regulations necessary to carry out the provisions of the Reclamation Act.[22]

Water from Bureau projects may not be delivered to water users until the Secretary of the Interior enters into a contract with an irrigation district organized pursuant to state law.[23] The contract must provide that each irrigation district pay for its allocated costs of constructing, operating, and maintaining the irrigation works during the time they are in the control of

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[18] *See* PHILIP R. WANDSCHNEIDER, WHO CONTROLS THE WATER? MANAGING THE COLUMBIA-SNAKE SYSTEM 23-24 (Jan. 1985). The ten dams operated for irrigation purposes by the Bureau are: Grand Coulee, Hungry Horse, Chandler, Roza, Black Canyon, Boise Diversion, Anderson Ranch, Minidoka, Palisades, and American Falls. *Id*.

[19] *See supra* § 2.2(1)(A).

[20] 43 U.S.C. §390. The Secretary of the Army may allow a Corps project to be used for irrigation purposes, so long as lawful existing uses are not "prejudiced." *Id*. If lawful existing uses will not be prejudiced, the Bureau (under the authority of the Secretary of the Interior) may operate and construct irrigation facilities at the dam. *Id*. These works may be undertaken only after the Secretary of the Interior makes a report and findings and Congress authorizes the works. *Id*. Seven of the Corps' major dams in the Basin are utilized for irrigation purposes by the Bureau: John Day, Lower Monumental, Detroit, Foster, Green Peter, Lookout Point, and Hills Creek. *See* WANDSCHNEIDER, *supra* note 18, at 23-24.

[21] 43 U.S.C. § 498. However, before any management authority can be delegated, certain payments required by the Reclamation Act must be made by water users. *Id*. Even after management authority is transferred, title to the irrigation works remains with the Bureau. 43 U.S.C. § 498.

[22] 43 U.S.C. § 373. *See* 43 C.F.R. pt. 426 (rules and regulations for projects governed by federal reclamation law, affective May 13, 1987).

[23] 43 U.S.C. § 423e.

the Bureau.[24] These payments must be completed no later than forty years from the date the contract is approved.[25]

Irrigation districts contract with the Bureau to receive a specified supply of project water, for a specified period and under specified terms.[26] Irrigation districts then deliver the water to irrigators and other end users.[27] The Bureau holds the legal right under state water law to use the water it stores at its projects and then later delivers to irrigation district.[28] Both the Bureau and irrigation districts have been described as "intermediary agents" for end

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[24] *Id*. The Bureau may require contract provisions "to protect the condition of project works and to provide for the proper use thereof, and to protect project lands against deterioration due to improper use of water." *Id*. § 485e. Generally, reclamation contracts specify that irrigation districts must repay their construction obligations within a specified time period; irrigation districts must continue to pay operation and maintenance costs for reserved irrigation works (dams and other water supply facilities that are not transferred to the irrigation districts for operation and maintenance). Letter from John W. Keys, Pacific Northwest Regional Director, U.S. Dep't of the Interior, Bureau of Reclamation, to Brett M. Swift, Northwest Water Law and Policy Project (May 21, 1997) (on file with the Northwest Water Law and Policy Project).

[25] *Id*. The Secretary of the Interior has the discretion to contract for a shorter term of years if she finds it necessary. *Id*. In addition, specific project authorizations often provide for a ten-year development period followed by a 50-year contract repayment period.

All proceeds from contract payments related to irrigation projects (including incidental power features) are deposited in the Reclamation Fund. *Id*. § 392a. The Reclamation Fund was created by Congress to finance surveys, construction, and maintenance of irrigation works and all other expenditures provided for in the Reclamation Act. *Id*. § 391. Other proceeds that must be deposited in the Reclamation Fund include: (1) money from the disposal of federal lands in any of the reclamation states, *id*., (2) money from entrymen or applicants for water rights, *id*. § 392, and (3) proceeds from the lease of reserved or withdrawn federal lands. *Id*. § 394.

The Reclamation Fund is used by the Bureau for a variety of purposes. First, the Bureau may use the Fund to finance the construction and maintenance of irrigation works for the storage, diversion, and development of water. *Id*. § 391. Second, the Fund can also be used to purchase or condemn property rights necessary for reclamation projects. *Id*. § 421. Third, the Bureau may use the Fund to purchase or condemn property necessary for the relocation of highways, roads, railroads, telegraph, telephone, or electric transmission lines; or to exchange or replace water rights necessary to facilitate the efficient use of reclamation projects. *Id*. § 389. *See also infra* § 2.2(4)(A).

[26] Roos-Collins, supra note 16, at 834. However, some irrigation district contracts do not identify a specific amount of water; there are many "spaceholder" contracts in the Columbia River Basin that convey to irrigation districts only a share of reservoir capacity. Letter from John W. Keys, Pacific Northwest Regional Director, U.S. Dep't of the Interior, Bureau of Reclamation, to Brett M. Swift, Northwest Water Law and Policy Project (May 21, 1997) (on file with the Northwest Water Law and Policy Project) (noting that the "actual amount of water available in an entity's storage space depends on water supply conditions and how carefully the entity has managed its storage supplies in the recent past").

[27] *Id*.

[28] COGGINS & GLICKSMAN, supra note 17, at § 21B.02[3][C].

users.[29] These end users are the "ultimate project beneficiaries" and hold "equitable title" to the water from Bureau projects.[30] According to the Ninth Circuit, irrigation districts have the "responsibility for ensuring that recipients of project water . . . [are] complying with federal reclamation law."[31]

The Bureau must encourage non-federal recipients of reclamation water (including irrigation districts) to fully consider and incorporate "prudent and responsible water conservation measures" in their operations, if "such measures are shown to be economically feasible" for the non-federal recipients.[32] Irrigations districts must also develop a water conservation plan.[33] The Bureau and irrigation districts in recent years have struggled to deal with the unauthorized use of reclamation water, often referred to as "water spreading."[34]

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[29] Roos-Collins, *supra* note 16, at 846 (citing Murphy v. Kerr, 296 F. 536, 545 (D.N.M 1923)).

[30] COGGINS & GLICKSMAN, *supra* note 17, at § 21B.02[3][C].

[31] Peterson v. United States Dep't of Interior, 899 F.2d 799, 804 (9th Cir. 1990) (citing United States v. Tulare Lake Canal Co., 535 F.2d 1093, 1094 (9th Cir. 1976) ("In exchange for the government's promise to supply water, the districts undertake to reimburse the United States for an allocated portion of the cost of constructing the project and to withhold water from excess lands within their boundaries for which recordable contracts have not been executed.")). The Ninth Circuit relied on 43 U.S.C. § 423e in interpreting the duties of the irrigation districts. *Id*.

[32] 43 U.S.C. § 390jj(a).

[33] 43 U.S.C. § 390jj(b) (the water conservation plan must contain "definite goals, appropriate water conservation measures, and a time schedule for meeting the water conservation objectives").

[34] Water spreading can occur contrary to federal or state law. Under federal law, reclamation project authorizing legislation or the regulations promulgated therefrom ordinarily specify both authorized uses of project water (i.e. irrigation, hydropower, recreation, etc.) and the boundaries of the project. Water spreading—the use of reclamation project water in contravention of federal law—can occur in three ways: (1) project water is used outside project boundaries; (2) the user of project water does not have a federal contract for the delivery of water to certain lands or water is used in a manner contrary to the terms of the reclamation contract; or (3) water validly delivered is applied to ineligible lands. Reed D. Benson & Kimberley J. Priestley, *Making a Wrong Thing Right: Ending the "Spread" of Reclamation Project Water*, 9 J. ENVTL. L. & LITIG. 92-4 (1994). Water spreading under federal law has been prevalent in the Pacific Northwest. *See* STAFF OF HOUSE OF REPRESENTATIVES COMM. ON NATURAL RESOURCES, 103RD CONG., 2D SESS., TAKING FROM THE TAXPAYER: PUBLIC SUBSIDIES FOR NATURAL RESOURCE DEVELOPMENT 58 (Committee Print 1994) (finding that "[i]n the Pacific Northwest there is a substantial amount of application of water outside project boundaries and on non-irrigable lands").

Water spreading occurs under state law where project water is applied to lands without a water right. There are three ways in which an end-user is able to legally apply reclamation water to her land under state law. First, the user can fit under the primary permit granted by the state to BOR—but such permits are usually not specific enough as to

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Federal reclamation law imposes five substantive requirements on the Bureau in its water management activities. First, the right to use water acquired under the Reclamation Act is appurtenant to the land irrigated.[35] Second, "beneficial use" is the basis, measure, and limit of the water use right.[36] Third, irrigation water cannot be delivered to certain end users who exceed the Reclamation Act's acreage limitations.[37] Fourth, the Bureau must ensure that authorized uses of reclamation water (such as hydropower and municipal and industrial uses) do not adversely affect irrigation.[38] Finally,

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how much water is actually to be delivered to specific lands. Generally, BOR water rights acquired pursuant to state law are for impoundment purposes only, and therefore constitute only a right to store water. Richard Roos-Collins, *Voluntary Conveyance of the Right to Receive a Water Supply from the United States Bureau of Reclamation*, 13 ECOLOGY L.Q. 773, 825 (1987). In most western states, the right to use water is independent of the title to the storage and delivery facilities. *Id.* Second, the end-user may be able to fit under the secondary permit granted by the state to an irrigation district. However, many of the same problems are encountered regarding specificity; the secondary permit delineates neither the amount of water allocated to each individual end-user nor the land to which the water must be applied. Third, an end-user can acquire the right under state law to apply project water to their land by applying for and receiving a permit granted directly to them by the state. Where the primary or secondary permit granted to BOR for storage or the irrigation district for delivery are not specific enough to encompass the individual users of project water, the end-user must apply for a state permit.

[35] 43 U.S.C. § 372.

[36] *Id.*

[37] 43 U.S.C. § 390dd. The Reclamation Act's acreage limitations vary depending on whether the end user is categorized as a "qualified" or "limited" recipient. "Qualified recipients" are either (1) individuals or (2) legal entities which benefit 25 people or less. *Id.* § 390bb(9). Qualified recipients who own over 960 acres are ineligible to receive subsidized "irrigation water" for their excess lands. *Id.* §§ 390bb(5), 390dd(1). Qualified recipients may still receive water from the Bureau for their excess lands but must pay "full cost." *Id.* § 390ee(a)(1); 43 C.F.R. § 426.7(c).

The same limit on the right to receive subsidized water from the Bureau applies to "limited recipients." Limited recipients are legal entities that benefit more than 25 people. 43 U.S.C. § 390bb(7). The acreage limitation for limited recipients is 640 acres. *Id.* § 390dd(2). Any excess lands held by limited recipients are also subject to full cost pricing. *Id.* § 390ee(a)(2); 43 C.F.R. § 426.7(c).

However, both qualified and limited recipients that own excess lands may still receive subsidized water from the Bureau by entering into a recordable contract with the Secretary of the Interior to dispose of their excess lands within a reasonable time. 43 U.S.C. § 390ii(b). This "reasonable time" is determined by the Secretary. *Id.* § 390ii(a). For contracts entered into prior to October 12, 1982, this time period may not exceed ten years from the date the contract is executed. *Id.* For contracts completed after October 12, 1982, the maximum time period is five years from the date the contract is executed. *Id.*

[38] 43 U.S.C. § 485h(c). *See also* City of Fresno v. California, 372 U.S. 627, 631 (1963). While generic reclamation law dictates that other uses of project water are feasible so long as irrigation uses are not adversely affects, specific project authorizations may place other uses of water on par with irrigation. Letter from John W. Keys, Pacific Northwest Regional Director, U.S. Dep't of the Interior, Bureau of Reclamation, to Brett M. Swift, Northwest Water Law

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the Reclamation Act has an express savings clause, directing the Bureau to "proceed in conformity" with state laws,[39] unless such laws conflict with specific congressional directives to the Bureau.[40]

(C) Hydropower

The Reclamation Act authorizes the Bureau to utilize project facilities to produce hydroelectric power.[41] The Secretary of the Interior may sell power or lease power privileges for a period not to exceed forty years.[42] The Secretary establishes the rates for such power and must ensure that the power revenues are sufficient to cover an appropriate share of the costs of annual operation and maintenance of the power project.[43] However, the Secretary must ensure that the use of project facilities for hydropower production "will not impair the efficiency of the project for irrigation purposes."[44]

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and Policy Project (May 21, 1997) (on file with the Northwest Water Law and Policy Project) (noting for example, that the authorization for the Tualatin Project near Portland, Oregon, "place[s] municipal and industrial purposes on par with irrigation).

[39] 43 U.S.C. § 383. The Bureau must comply with state laws relating to the control, appropriation, use, or distribution of water used in irrigation. *Id*.

[40] The Supreme Court has held that the Bureau must follow state law in "all respects not directly inconsistent with . . . [explicit congressional] directives." California v. United States, 438 U.S. 645, 678 (1978). Examples of these congressional directives include: (1) the appurtenancy requirement, *id*. at 668 n. 21, 678 n. 31, (2) the beneficial use requirement, *id*., (3) the acreage limitation, *id*. at 668, n. 21, 671, 678 n. 31; Ivanhoe Irrigation Dist. v. McCracken, 357 U.S. 275, 291 (1958), and (4) the irrigation preference clause. *City of Fresno*, 372 U.S. at 631.

[41] 43 U.S.C. § 522. Congress declared that the Secretary's authority to sell and lease hydropower from Bureau projects is "in addition and alternative to any authority in existing laws relating to particular projects." *Id*. § 485h(c).

[42] 43 U.S.C. § 485h(c). The Secretary must give preference to municipalities, public corporations, and other cooperatives and nonprofit organizations listed in the statute. *Id*.

The Bonneville Power Administration is the authorized agency to market surplus power (power not required for project purposes- generally irrigation pumping) produced at BOR hydroelectric plants in the Columbia River Basin. For a discussion of BPA's role in the Columbia River Basin, see *infra*, § 2.4.

[43] 43 U.S.C. § 485h(c). Hydropower revenues are also used to help pay project costs incurred because of deferred repayment obligations granted to project water users. *See* John M. Volkman, *A River in Common: The Columbia River, the Salmon Ecosystem, and Water Policy*, 61 (draft report to the Western Water Law and Policy Review Commission, on file with the Northwest Water Law and Policy Project) (noting that hydropower ("once viewed as a minor incident" of federal reclamation projects) has become a "primary part of reclamation's economic justification" because "[c]osts not paid by irrigators were paid from hydropower revenues . . .").

[44] 43 U.S.C. § 485h(c).

(D) Flood Control and Navigation

The Corps is the primary flood control authority in the United States.[45] Pursuant to Corps regulations, a number of Bureau projects are operated for flood control purposes.[46]

(E) Municipal and Industrial Uses

The Bureau may allocate reclamation project water to municipal and industrial uses.[47] Any allocation of project water for municipal or industrial use cannot (1) be contrary to the project's authorizing statute[48] or (2) impair the efficiency of the project for irrigation purposes.[49] Contracts between the Bureau and municipal and industrial users cannot exceed forty years, and must include operation and maintenance costs.[50]

(F) Recreation

Individual authorizing statutes for Bureau projects may recognize the use of water for recreational purposes.[51] In addition, the Federal Water Project Recreation Act of 1965[52] requires the Bureau to give "full consideration" to possible recreation uses for any planned project.[53] If the project can "reasonably serve" recreation purposes then the project "shall be constructed,

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[45] 33 U.S.C. § 701a-1.

[46] 33 U.S.C. 709; 33 C.F.R. § 208.11.

[47] 43 U.S.C. § 485h(c). The statute uses the phrase "municipal water supply or miscellaneous purposes," *id*., but "miscellaneous" has been interpreted to include industrial uses. Roos-Collins, *supra* note 16, at 789 n. 65 (citing Environmental Defense Fund, Inc. v. Morton, 420 F. Supp. 1037, 1042 (D. Mont. 1976), *aff'd in part, rev'd in part*, 596 F.2d 848 (90th Cir. 1979)). The Bureau's authority to impound water for municipal and industrial purposes is found at 43 U.S.C. § 390b.

[48] *See* Roos-Collins, *supra* note 16, at 793 n. 88.

[49] 43 U.S.C. §§ 485h(c), 390b.

[50] 43 U.S.C. § 485h(c). Municipal and industrial supply contracts can exceed the statutory 40-year limit pursuant to specific project authorizing legislation.

[51] COGGINS & GLICKSMAN, *supra* note 17, at§ 21B.03[1][C].

[52] 43 U.S.C. §§ 460l-12 to 460l-21 (1994). *See also id*. §§ 460l-31 to 460l-34 for additional sections governing the Bureau's recreation management. Congress declared in 1992 that "[t]here is a Federal responsibility to provide opportunities for public recreation at Federal water projects." *Id*. § 460l-31(1).

[53] 43 U.S.C. § 460l-12(a).

operated, and maintained accordingly."[54] The Bureau may also construct, operate, and maintain public outdoor recreation facilities at existing projects.[55] However, recreation costs at a project cannot exceed costs allocated for other uses (such as irrigation, hydropower, municipal use, navigation, and flood control) at the project.[56]

(2) Fish and Wildlife Protection

(A) The Endangered Species Act

The Endangered Species Act (the ESA)[57] protects species listed as either endangered or threatened[58] and imposes substantive duties on the Bureau. The Bureau must ensure that its activities are not likely to (1) jeopardize the continued existence of listed species or (2) adversely modify the critical habitat of such species.[59] Any proposed action that is likely to jeopardize a listed species or adversely affect its critical habitat requires the Bureau to

[54] 43 U.S.C. § 460l-12(a). Section 460l-12(a) also requires that the Bureau consider fish and wildlife enhancement in planning projects. *Id*. *See infra* § 2.2(2)(C).

[55] 43 U.S.C. § 460l-18(a). The Bureau may also provide for fish and wildlife enhancement facilities at existing projects. *Id*. *See infra* § 2.2(2)(C). This section does not apply to reservoirs within national wildlife refuges. 43 U.S.C. § 460l-18(a). Recreation facilities must still be coordinated with other project purposes. *Id*. The Bureau has property acquisition and disposition powers necessary to provide for recreational use at projects. *Id*. *See infra* § 2.2(4)(A).

[56] 43 U.S.C. § 460l-20. "Cost allocation" refers to the expenses associated with the construction of a particular recreation or fish and wildlife enhancement project. *Id*. The same cost cap applies to fish and wildlife enhancement, but does not apply to the enhancement of "anadromous fisheries, shrimp, or for the conservation of migratory birds protected by treaty." *Id*. *See infra* § 2.2(2)(C).

[57] 16 U.S.C. §§ 1531 to 1544 (1994).

[58] The Secretaries of Interior and Commerce make listing determinations. 16 U.S.C. § 1533(a)(1); *see also* 50 C.F.R. pt. 424 (1995). Interested persons may petition the Secretary to list a species. 16 U.S.C. § 1533(b)(3)(A); *see also* 50 C.F.R. § 424.14.

[59] 16 U.S.C. § 1536(a)(2). The Secretaries of Interior and Commerce must, "to the maximum extent prudent and determinable," designate critical habitat concurrent with the listing of a species. *Id*. § 1533(a)(3)(A); *see also* 50 C.F.R. § 424.12 (criteria for designating critical habitat). The Bureau also has an affirmative obligation under the ESA to take actions to conserve listed species. 16 U.S.C. § 1536(a)(1).

consult with the relevant federal consulting agency, either the United States Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service (NMFS).[60]

Initially, the Bureau must inquire whether a listed or proposed[61] species "may be present in the area" of the Bureau's proposed activity.[62] If the consulting agency finds that a listed species is present in the area,[63] the Bureau must prepare a biological assessment (BA).[64] For a proposed species, the Bureau need only "conference" with the consulting agency if the authorized action is likely to jeopardize the continued existence of any proposed species or result in the destruction or adverse modification of proposed critical habitat.[65] If the BA shows that the Bureau's proposed activity is likely to affect the continued existence of the listed species or adversely affect its critical habitat, formal consultation is required.[66]

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[60] 16 U.S.C. § 1536(a)(2). USFWS (Department of the Interior)(non-marine species) and NMFS (Department of Commerce)(marine species) are the two federal agencies which share responsibility for administering the ESA. 50 C.F.R. § 402.01(b). *See infra* §§ 2.8(2)(A) (USFWS), 2.7(2)(A) (NMFS) for a discussion of the ESA responsibilities of these "consulting agencies."

[61] A "proposed species" is one for which a final listing determination is pending. 50 C.F.R. § 402.02.

[62] 16 U.S.C. § 1536(c)(1); *see also* 50 C.F.R. § 402.12. The Bureau may also initiate "early consultation" with the consulting agency if a prospective federal permit applicant "has reason to believe that the prospective action may affect listed species or critical habitat" and requests that the Bureau enter into early consultation. 50 C.F.R. § 402.11. Prior to the initiation of early consultation the prospective applicant must certify to the Bureau that "(1) it has a definite proposal outlining the action and its effects and (2) it intends to implement its proposal, if authorized. Id. § 402.11(b). The procedures and responsibilities for early consultation are similar to those required for formal consultation except that references to the "applicant" are treated as "prospective applicant" and a "preliminary biological opinion" not a biological opinion is issued by the USFWS or NMFS. Id. § 402.11(d). For a discussion of the formal consultation requirement see *infra* notes 66-69 and accompanying text.

[63] The consulting agency must use "the best scientific and commercial data available" in making this determination. 16 U.S.C. § 1536(c)(1).

[64] 16 U.S.C. § 1536(c)(1). The contents of the BA are "at the discretion of" the Bureau, depending on the nature of the proposed action. 50 C.F.R. § 402.12(f). However, the BA must be based on "the best available scientific and commercial data available." 16 U.S.C. § 1536(a)(2). The BA must be completed within 180 days or a mutually agreed upon date. *Id.* § 1536(c)(1).

[65] 16 U.S.C. § 1536(a)(4); *see also* 50 C.F.R. § 402.10.

[66] 50 C.F.R. § 402.12(k). Formal consultation regulations for USFWS and NMFS are at 50 C.F.R. § 402.14. The Bureau may not "make any irreversible or irretrievable commitment of resources" once formal consultation has begun. 16 U.S.C. § 1536(d); 50 C.F.R. § 402.09.

Action agencies such as the Bureau may also engage in "informal consultation" with consulting agencies to determine whether formal consultation is required. 50 C.F.R. § 402.13. Informal consultation includes all discussions and correspondence between the action and consulting agencies. *Id.* § 402.13(a). The consulting agency may suggest modifications to the proposed action that could be implemented to avoid adverse effects to

Formal consultation results in a biological opinion (BiOp) issued by the consulting agency.[67] If the consulting agency concludes that the Bureau's proposed action is not likely to jeopardize the species, the agency issues a "no jeopardy BiOp."[68] Conversely, if the consulting agency cannot make this determination, it must issue a "jeopardy BiOp," which may include "reasonable and prudent alternatives" to the proposed action that will avoid jeopardy.[69]

If the Bureau relies on and follows the measures specified in the BiOp, it has probably fulfilled its ESA obligations.[70] However, the Ninth Circuit has held that an agency's reliance on a BiOp to satisfy its ESA obligations cannot be arbitrary and capricious.[71] The Ninth Circuit has also ruled that action agencies such as the Bureau are not bound by all the details of a BiOp so long as they take alternative, reasonably adequate measures to ensure the continued existence of listed species.[72]

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the listed species or corresponding critical habitat. *Id*. § 402.13(b).

[67] *See* 16 U.S.C. § 1536(b)(3)(A). Content requirements for BiOps are at 50 C.F.R. § 402.14(h). *See also* 50 C.F.R. § 402.14(g) (listing the consulting agencies' responsibilities during formal consultation, including: (1) the evaluation of the effects of the proposed action and cumulative effects on the listed species or critical habitat, *id*. § 402.14(g)(3), and (2) the use of "the best scientific and commercial data available." *Id*. § 402.14(g)(8)).

[68] 50 C.F.R. § 402.14(h)(3).

[69] 50 C.F.R. § 402.14(h)(3). The consulting agency can also issue a jeopardy BiOp with no reasonable and prudent alternatives. *See id*. (directing that a jeopardy BiOp "shall include reasonable and prudent alternatives, if any"). The Bureau may be required to reinitiate formal consultation with the consulting agency when: (1) the Bureau retains discretionary control over the action and (2) certain new conditions arise or new information becomes available. 50 C.F.R. §§ 402.16(a)-(d).

[70] Environmental Coalition of Broward County, Inc. v. Meyers, 831 F.2d 984 (11th Cir. 1987). *See also* 50 C.F.R. § 402.15 (responsibilities of the action agency following issuance of a BiOp).

[71] Pyramid Lake Tribe of Indians v. United States Dep't of the Navy, 898 F.2d 1410, 1415 (9th Cir. 1990) (action agencies may not solely rely on BiOps to establish conclusively that they have satisfied their ESA obligations; a decision to rely on a BiOp must be shown to not be arbitrary and capricious).

[72] Tribal Village of Akutan v. Hodel, 854 F.2d 651, 660-61 (9th Cir. 1988). *But see* American Rivers v. National Marine Fisheries Service, No. 96-384, slip op. at 28-29 (D. Or. April 3, 1997) (distinguishing *Village of Akutan* and rejecting plaintiff's claim that any deviation from the reasonable and prudent alternatives provided by NMFS' 1994-1998 Biological Opinion for Federal Columbia River Power System Operations triggers a duty to come up with other mitigative measures).

In 1995, NMFS issued a "jeopardy BiOp" concerning the operation of the FCRPS and its effect on the listed Snake River salmon.[73] The BiOp contained "reasonable and prudent alternatives" to the proposed operation of the FCRPS during the years 1994 to 1998, calling for the Bureau to implement several actions deemed necessary to avoid jeopardizing the continued existence of the listed species.[74]

The ESA also prohibits action agencies such as the Bureau from "taking" any endangered species.[75] Taking is defined broadly to include harassing or harming species,[76] but incidental take "statements" (similar to permits) that reduce or minimize the take of threatened or endangered species may be issued by the consulting agency.[77]

(B) The Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act[78] ensures that wildlife conservation receives equal consideration and is coordinated with other features or

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[73] NATIONAL MARINE FISHERIES SERV., U.S. DEP'T OF COMMERCE, ENDANGERED SPECIES ACT- SECTION 7 CONSULTATION: BIOLOGICAL OPINION: REINITIATION OF CONSULTATION ON 1994-1998 OPERATION OF THE FEDERAL COLUMBIA RIVER POWER SYSTEM AND JUVENILE TRANSPORTATION PROGRAM IN 1995 AND FUTURE YEARS (Mar. 2, 1995) [hereinafter 1995 BIOP]. *See infra* § 2.7(2)(A) for more on the listed Snake River salmon.

[74] 1995 BIOP, *supra* note 73, at 91-135 (for all the measures called for in the NMFS BiOp).

[75] The ESA prohibits all persons (including federal agencies) from the "taking" of any endangered fish and wildlife species. 16 U.S.C. § 1538(a)(1). Federal regulations expand this prohibition to threatened species as well. 50 C.F.R. § 17.31(a).

[76] The ESA defines "take" as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in such conduct. 16 U.S.C. § 1532(19). Federal regulations further define "harm" as any act that actually kills or injures wildlife, including "significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering." 50 C.F.R. § 17.3. This regulation was upheld by the Supreme Court. Babbitt v. Sweet Home Chapter, Communities For A Greater Oregon, 115 S. Ct. 2407 (1995).

[77] An incidental take is a taking that results from, but is not the purpose of, "carrying out an otherwise lawful activity conducted by the Federal agency or applicant." 50 C.F.R. § 402.02. An incidental take requires a statement issued by the consulting agency during formal consultation that sets out the terms and conditions that must be complied with by the federal agency. *Id.* § 402.14(i). Incidental take statements may be included in a BiOp. For example, the 1995 BiOp issued by NMFS concerning the effect of the operation of the FCRPS on listed Snake River salmon contained an incidental take statement. *See* 1995 BIOP, *supra* note 73, at 159.

[78] 16 U.S.C. §§ 661 to 666c (1994).

purposes of water resource development.[79] The Act's goal is to protect the loss of and damage to wildlife, and to develop and improve the wildlife resource in connection with water resource developments.[80]

The Bureau must confer with the USFWS when commencing any impoundment, diversion, or channel deepening.[81] The Bureau must give the USFWS recommendations "full consideration," but the final decision lies with the Bureau.[82] The Act allows the Bureau to modify its projects in order to accommodate wildlife conservation[83] and acquire property to aid in wildlife conservation.[84]

(C) The Federal Water Project Recreation Act[85]

When planning a project, the Bureau must give full consideration to the opportunities for fish and wildlife enhancement.[86] If the project can reasonably serve this purpose, then "it shall be constructed, operated, and

[79] 16 U.S.C. § 661.

[80] 16 U.S.C. § 662(a).

[81] 16 U.S.C. § 662(a). *See also* 43 C.F.R. pt. 24 (1995). However, impoundments with a maximum surface area of less than 10 acres are excluded. 16 U.S.C. §662(h). Activities in connection with programs administered primarily for land management and use carried out by federal land management agencies on federal lands are also exempt. *Id*.

[82] 16 U.S.C. § 662(b). The Bureau shall include in its project plan "such justifiable means and measures for wildlife purposes" that the USFWS recommends "to obtain maximum overall project benefits." *Id*. However, project plans are subject to review by the Bureau or Congress. *See id*.

[83] 16 U.S.C. § 662(c) (the Bureau may "modify or add to the structures and operations" of its projects). The Bureau notes that the ideal application of the Fish and Wildlife Coordination Act is in the planning and authorization stage of the project where USFWS recommendations can be incorporated into the project plan prior to Congressional authorization. Letter from John W. Keys, Pacific Northwest Regional Director, U.S. Dep't of the Interior, Bureau of Reclamation, to Brett M. Swift, Northwest Water Law and Policy Project (May 21, 1997) (on file with the Northwest Water Law and Policy Project) (noting that "[i]n reality, once a project has been constructed, there are limited opportunities to change project operations to accommodate new purposes," and that [BOR] "always seeks to operate its projects to accommodate identified fish and wildlife and other needs, so long as it can meet the authorized purposes of the project").

[84] 16 U.S.C. § 663(c) (title, land, and waters may be acquired for wildlife conservation). *See also infra* § 2.2(4)(A).

[85] 43 U.S.C. §§ 460l-12 to 460l-21; *see also id*. §§ 460l-32 to 460l-34. *See also supra* § 2.2(1)(F).

[86] 43 U.S.C. § 460l-12(a).

maintained accordingly."[87] The Bureau is also authorized to provide for fish and wildlife enhancement facilities at existing projects.[88] The Bureau has property acquisition and disposition authority to provide for fish and wildlife enhancement.[89] However, fish and wildlife enhancement costs at a project cannot exceed costs allocated for other uses (such as irrigation, hydropower, municipal use, navigation, and flood control) at the project.[90]

(D) The Northwest Power Act

The Northwest Power Act of 1980 (the NPA)[91] created the Northwest Power Planning Council (the Council), an interstate compact agency comprised of two members from each of the four states in the Columbia River Basin.[92] The Council has responsibilities for both chartering the Northwest's electric future and preserving and restoring the fish and wildlife damaged by hydroelectric development and operations.

The NPA was created "to assure the Pacific Northwest of an adequate, efficient, economical, and reliable power supply."[93] However, this goal is subject to another congressional mandate requiring that federal dam operators and power marketers to "protect, mitigate and enhance the fish and wildlife, including related spawning grounds and habitat, of the Columbia River and its tributaries."[94] The Council, through its Columbia

[87] 43 U.S.C. § 460l-12(a).

[88] 43 U.S.C. § 460l-18(a). This section does not apply to reservoirs within national wildlife refuges. *Id*.

[89] 43 U.S.C. § 460l-18(a). *See also infra* § 2.2(4)(A).

[90] 43 U.S.C. § 460l-20. The cost cap does not apply to the enhancement of "anadromous fisheries, shrimp, or for the conservation of migratory birds protected by treaty." *Id*.

[91] Pacific Northwest Electric Power Planning and Conservation Act of 1980, 16 U.S.C. §§ 839 to 839h (1994).

[92] 16 U.S.C. § 839b(a)(2). Members from each state are appointed according to the appointment laws of their own state. *Id*. § 839b(a)(2)(B).

[93] 16 U.S.C. § 839(2).

[94] 16 U.S.C. § 839(6).

Basin Fish and Wildlife Program (the program),[95] is the entity responsible for achieving Congress's required fish and wildlife protection and enhancement.[96]

The Bureau's responsibilities under the NPA are two-fold. First, the Bureau must exercise its responsibilities consistent with the purposes of the NPA "in a manner that provides equitable treatment for such fish and wildlife with the other purposes" for which Bureau projects are managed and operated.[97] Second, the Bureau must take the Council's program "into account at each

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[95] NORTHWEST POWER PLANNING COUNCIL, COLUMBIA RIVER BASIN FISH AND WILDLIFE PROGRAM (Dec. 14, 1994) [hereinafter 1994 PROGRAM]. Congress enunciated several statutory criteria for the Council's program. Time deadlines were set for creating and amending the program. 16 U.S.C. § 839b(h)(9) (within one year of the receipt of recommendations). The Council must solicit and evaluate fish and wildlife recommendations from state and federal fishery agencies and Indian tribes. *Id*. § 839b(h)(2). The Council must give "due weight" to these recommendations. *Id*. § 839b(h)(7). The Ninth Circuit interpreted this section of the NPA to "require that a high degree of deference be given to fishery managers' interpretations of such provisions and their recommendations for program measures." Northwest Resource Info. Ctr., Inc. v. Northwest Power Planning Council, 35 F.3d 1371, 1388 (9th Cir. 1994), *cert. denied sub nom*. Pacific N.W. Generating Coop. v. Northwest Power Planning Council, 116 S. Ct. 50 (1995). If the Council chooses not to follow a recommendation submitted by the fishery agencies and tribes, the Council must explain its reasons for so doing, in writing and in the program itself. 16 U.S.C. § 839b(h)(7); *see also* Northwest Resource Info. Ctr., 35 F.3d at 1385-86. All program measures must satisfy five statutory criteria: (1) "complement the existing and future activities" of fishery agencies and tribes; (2) be based on the "best available scientific knowledge;" (3) use the alternative (where "equally effective alternative means of achieving the same sound biological objective exist") with the "minimum economic cost;" (4) be consistent with Indian treaty rights; and (5) provide for improved anadromous fish survival by providing river flows "of sufficient quality and quantity" to improve "production, migration, and survival of such fish." 16 U.S.C. §§ 839b(h)(6)(A)-(E).

The NPA was amended in 1996, in an appropriations rider sponsored by Senator Slade Gorton (R-Wa.). Energy and Water Development Appropriations Act, Pub. L. No. 104-206, § 504, 110 Stat. 2984, 3005-06 (1996) (amending § 839b(h)(10) of the NPA). The rider requires the Council to make recommendations to BPA concerning funding priority measures implementing the Council's program. *Id*. at 3005-06 (adding new § 839b(h)(10)(D)(iv)). The Council's recommendations must be based on "sound scientific principles; benefit fish and wildlife; and have a clearly defined objective and outcome with provisions for monitoring and evaluation." *Id*. The Council must establish an Independent Scientific Review Panel which will review fish and wildlife projects proposed for BPA funding. *Id*. (adding new §§ 839b(h)(10)(D)(i)-(ii)). The rider requires the Council to "fully consider" the panel's recommendations on priorities for project funding, and if the Council does not adopt the panel's recommendations, to explain its reasons for rejecting the recommendations in writing. *Id*. (adding a new § 839b(h)(10)(D)(vi)).

[96] 16 U.S.C. § 839b(h)(5) (requiring the Council's program to "consist of measures to protect, mitigate, and enhance fish and wildlife affected by the development, operation, and management" of the Columbia River Basin hydrosystem, while assuring the Pacific Northwest an "adequate, efficient[,] economical, and reliable power supply").

[97] 16 U.S.C. § 839b(h)(11)(A)(i).

relevant stage of decisionmaking processes to the fullest extent practicable."[98] However, the enforceabilty of the Council's program remains unclear.[99]

The Council's program calls for the Bureau to aid in increasing river flows on the Columbia[100] and Snake[101] Rivers to aid in juvenile salmon migration. The Bureau was specifically called upon to purchase water to aid in Snake River

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[98] 16 U.S.C. § 839b(h)(11)(A)(ii).

[99] BPA's former general counsel suggested that the "consistency" provision, 16 U.S.C. § 839b(h)(10), does not require BPA to implement the Council's program. *See Panel Discussion, Colloquium: Who Runs the River?*, 25 ENVTL. L. 417, 422 (1995) (remarks of Harvey Spigal). The Ninth Circuit seems to agree, stating that BPA "must act consistently with the Council's [P]rogram but in the end has final authority to determine its own decisions." Northwest Resource Info. Ctr., Inc. v. National Marine Fisheries Serv., 25 F.3d 872, 874 (9th Cir. 1994). The general counsel for the Council seems to agree as well:

> The Council's authority in the fish and wildlife area is constrained; it can guide, but not command, federal river management. The investment of federal hydropower revenues to help fish and wildlife must be "consistent" with the Council's [P]rogram, but . . . [BPA] actually writes the checks. The Council has no authority over fish and wildlife agencies, land managers, or irrigators. The Council is not toothless, but it cannot command and control.

John M. Volkman & Willis E. McConnaha, *Through a Glass Darkly: Columbia River Salmon, the Endangered Species Act, and Adaptive Management*, 23 ENVTL. L. 1249, 1254 (1993) (citation omitted). *But see* Michael C. Blumm, et. al., *Beyond the Parity Promise: Struggling to Save Columbia Basin Salmon in the 1990s*, 27 ENVTL. L. 21, 64-65 (1997) (arguing that the Council's program is no less enforceable than biological opinions implementing the Endangered Species Act).

[100] 1994 PROGRAM, *supra* note 95, at 5-28 to 5-31. The Council calls for sliding scale monthly flow targets at The Dalles Dam for a three-year period, beginning at 300,000 cubic feet per second (cfs) in the first year and declining to 260,000 cfs and 220,000 cfs. *Id*. at 5-29. John Day Dam is also to be maintained at the minimum irrigation pool (MIP) level to aid in spring salmon migration. *Id*. at 5-29 to 5-30. MIP is the lowest level at which irrigation pumps at a project will operate effectively. *Id*. at 5-29.

[101] 1994 PROGRAM, *supra* note 95, at 5-20 to 5-24. A minimum monthly flow average of 85,000 cfs to 140,000 cfs is in place at Lower Granite for the spring migration. *Id*. at 5-20. The summer monthly flow target at Lower Granite is 50,000 cfs. *Id*. at 5-20. Dworshak may also be utilized to aid in Snake River flow increases. *Id*. at 5-20 to 5-21, 5-23.

The Bureau—along with the Corps, Idaho Power Company, and FERC—must operate Brownlee Dam in a manner to ensure that water is released to assist spring migrants. *Id*. Idaho Power Company, a FERC licensee, must draft Brownlee to provide 137,000 acre-feet for fall chinook migrants. *Id*. at 5-23. An acre-foot of water is the amount of water that covers one acre to a depth of one foot (or 325,850 gallons). *Id*. at G-1. The Bureau (in conjunction with the state of Idaho and BPA) is to provide this water through water efficiency improvements, water marketing transactions, dry-year option leasing, storage buy-backs, and other measures. *Id*. at 5-23 to 5-24 (half to be secured by the Bureau and half by financial incentives provided by BPA and Idaho).

flows.[102] The Bureau is to also: (1) provide flows in the Snake to benefit returning adult salmon;[103] (2) implement actions to aid in improving weak stocks and habitat;[104] (3) improve water use efficiency for instream uses;[105] (4) require fish screen and other passage facilities as a condition for both existing and new water use authorizations;[106] (5) implement measures to

[102] Under the Council's program, the Bureau must provide 1.427 million acre-feet of water to augment flows in the lower Snake River. *Id*. at 5-21 to 5-22 (water may be obtained by purchase from willing sellers; water to be used from April 10 through September of each year). The Bureau may secure this water incrementally. *Id*. at 5-21 (since 1992 the Bureau has been called on by the Council to provide 427,000 acre-feet of water, but the Council's 1994 program called for 500,000 additional acre-feet in 1996, and 500,000 more acre-feet in 1998). BPA is to share equally in the costs of purchasing the additional one million acre-feet. *Id*. at 5-22.

[103] *Id*. at 5-23 to 5-24, 6-4. Idaho Power Company is to draft 100,000 acre-feet from Brownlee every September to help reduce water temperatures for returning adult fish. *Id*. at 6-4. The Bureau is to provide half of this water via water efficiency improvements, water marketing transactions, dry-year option leasing, storage buy-backs, and other measures. *Id*. at 5-23 to 5-24. The other half is to be secured "on a matching basis using financial incentives" provided by BPA. *Id*. at 5-24.

[104] *Id*. at 7-31. The Bureau, along with BPA and the Corps, must fund a status report (to be presented to the Council) on Pacific lamprey populations in the Basin. *Id*. The Bureau is called upon to develop and implement procedures that comply with the Council's habitat goal, which is to "[p]rotect and improve habitat conditions to ensure compatibility with the biological needs of salmon, steelhead[,] and other fish and wildlife species." *Id*. at 7-33 to 7-36.

[105] The Bureau and BPA are to fund and implement four "water leasing demonstration projects" to increase stream flows for salmon and steelhead. *Id*. at 7-48 (one project in the Yakima River Basin, the other three in the Snake River Basin). The Bureau, along with the four states in the Basin, must also review "the adequacy of existing law and its implementation to protect enhanced instream flows for fish. *Id*. (recommendations were due to the Council by December 31, 1995, and on December 31 for every year thereafter).

The Council also charged the Bureau with identifying all cases of water spreading on Bureau projects in the Basin. *Id*. at 7-47. The Bureau must determine the quantities and market value of water that has been spread by water users. *Id*. Then the Bureau must propose "alternative approaches" to address the problem. *Id*. (these approaches include providing incentives for water conservation and making water available for instream uses).

The Council's program also calls for the Bureau to aid in subbasin projects aimed at protecting fish and wildlife. The Bureau must aid the Corps in developing a storage agreement in the Willamette River Subbasin to ensure minimum flows to protect salmon and steelhead. *Id*. at 7-50. In the Umatilla Subbasin, the Bureau must use 6,000 acre-feet of uncontracted water at McKay Dam to enhance Umatilla River flows. *Id*. at 7-51 (in cooperation with fish and wildlife agencies and tribes). The Bureau must also fund studies (done by the Oregon Department of Fish and Wildlife and the Umatilla tribe) to evaluate the "biological effectiveness" of the increased flows on the Umatilla River. *Id*. at 7-52.

[106] *Id*. at 7-55.

protect resident fish;[107] and (6) follow Council conditions aimed at protecting fish and wildlife for any future hydroelectric development.[108]

(3) Environmental Regulation

(A) The National Environmental Policy Act

The National Environmental Policy Act (NEPA)[109] requires the Bureau (and any other federal agency) to complete a detailed statement on the environmental impacts of all "major Federal actions significantly affecting the quality of the human environment."[110] This environmental impact statement (EIS) must examine: (1) the environmental impact of the proposed action; (2) any unavoidable adverse environmental effects; and (3) alternatives to the proposed action.[111] The NEPA process has been codified in regulations promulgated by the Council on Environmental Quality (CEQ).[112] Under these regulations, the Bureau must first determine whether an EIS is necessary for a proposed action.[113] The Bureau must determine

[107] For example, the Bureau must provide flows from Hungry Horse Dam for resident fish mitigation. *Id*. at 10-4 to 10-7 (if the integrated rule curves at Hungry Horse are exceeded for flood control purposes, the Corps must fund "the mitigation of fish losses to the extent those losses are caused by system flood control operations"). The Council also recommended that the Bureau operate other projects (including Grand Coulee Dam) to protect resident fish. *Id*. at 10-11 (Anderson Ranch, Owyhee, Warm Springs, Beulah, Lake Roosevelt). The Bureau must also fund the maintenance of the barrier net system at Banks Lake to protect resident kokanee. *Id*. at 10-14.

[108] *Id*. at 12-1 to 12-6.

[109] 42 U.S.C. §§ 4321 to 4370d (1994).

[110] 42 U.S.C. § 4332(2)(C). For a discussion of what constitutes a "major federal action," see GEORGE C. COGGINS & ROBERT L. GLICKSMAN, 2 PUBLIC NATURAL RESOURCES LAW §§ 10G.03[2] to 10G.04. There has been much litigation surrounding what is a "major" action, *see id*. § 10G.04, and what is a "federal" action. *Id*. § 10G.03[2] (the key factor in determining whether an action is "federal" is the "agency's authority to influence significant nonfederal activity. . . . [T]he federal agency must possess actual power to control the nonfederal activity") (quoting Sierra Club v. Hodel, 848 F.2d 1068, 1089 (10th Cir. 1988)); *see also* 40 C.F.R. § 1508.18 (1996).

[111] 42 U.S.C. §§ 4332(2)(C)(i)-(v). The EIS must also examine the short-term use of the environment in relation to the maintenance of long-term productivity, and any irreversible and irretrievable commitments of resources. *Id*.

[112] CEQ's NEPA regulations can be found at 40 C.F.R. pt. 1500. The CEQ was created by NEPA. *See* 42 U.S.C. §§ 4341 to 4347. CEQ regulations are entitled to substantial deference regarding NEPA's requirements, Andrus v. Sierra Club, 442 U.S. 347, 358 (1979), and are binding on all federal agencies. 40 C.F.R. § 1500.3 (declaring that 40 C.F.R. pts. 1500 to 1508 are binding on federal agencies). In addition, federal agencies must promulgate their own NEPA regulations to supplement the CEQ regulations. 40 C.F.R. § 1507.3(a).

[113] *See* 40 C.F.R. § 1501.4.

whether the proposed action normally requires an EIS under its own NEPA regulations.[114] Bureau actions that normally require an EIS include but are not limited to (1) proposed feasibility planning reports on water resources projects; (2) proposed repayment contracts for irrigation, municipal, domestic, or industrial water; (3) proposed changes to the programmed operation of an existing project; and (4) the proposed construction of a project or major unit thereof.[115] If the activity is one that does not normally require an EIS, the Bureau must prepare an environmental assessment (EA).[116]

An EA is a "concise public document" which determines on a case by case basis if an EIS is necessary.[117] After completion of an EA, the Bureau issues a finding of no significant impact (FONSI) if it determines that the proposed action would create no significant impacts and therefore no EIS is required.[118] Otherwise, the Bureau must initiate the EIS process.[119]

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[114] *Id*. § 1501.4(a). Certain proposed actions deemed "categorical exclusions" are exempt from the NEPA documentation process; such actions require neither an EA nor an EIS. *Id*. §§ 1508.4, 1501.4(a)(2). CEQ defines categorical exclusion as "a category of actions which do not individually or cumulatively have a significant effect on the human environment and which have been found to have no such effect in procedures adopted by a Federal agency in implementation of these regulations." 40 C.F.R. § 1508.4. The Bureau must specify the criteria for any categorical exclusions in its regulations. *Id*. § 1507.3(b)(1), (2).

Activities the Bureau considers categorically excluded from the NEPA process include, but are not limited to: (1) the classification and certification of irrigable lands; (2) the approval, execution, and implementation of water service contracts for minor amount [sic] of long-term water use where the action does not lead to long-term changes and the impacts are localized; (3) the approval of second party water sales for small amounts of water; and (4) inor safety of dam construction activities. Department of the Interior, Department Manual- Bureau of Reclamation 516 DM 6 Appendix 9 (1990) (the manual also identifies numerous other general, planning, project implementation, operations and maintenance, and grant and loan activities that are categorical exclusions from the NEPA process).

[115] DEPARTMENT OF THE INTERIOR, DEPARTMENT MANUAL- BUREAU OF RECLAMATION 516 DM 6 Appendix 9 (1990). While these actions normally require an EIS, agency regulations dictate that under some circumstances an EA/FONSI may suffice.

[116] 40 C.F.R. § 1501.4(b).

[117] 40 C.F.R. § 1508.9. An EA must provide "sufficient evidence and analysis" to determine if an EIS is necessary. *Id*. § 1508.9(a)(1). An EA may also be use to aid in the Bureau's compliance with NEPA when no EIS is required. *Id*. § 1508.9(a)(2).

[118] 40 C.F.R. § 1501.4(e). A FONSI must include the EA (or a summary of it) and any other environmental documents related to the EA. *Id*. § 1508.13.

[119] 40 C.F.R. 1501.4(d).

The first stage of the EIS process involves "scoping."[120] The Bureau must ensure through the scoping process that the EIS adequately considers the environmental impacts of the proposed action.[121] An EIS is prepared in two stages—a draft EIS (DEIS), followed by a final EIS (FEIS)—which may be supplemented as well.[122] Upon completing a DEIS, the Bureau must obtain the comments of federal agencies with jurisdiction or special expertise and other public or private entities concerning the environmental impacts involved.[123] An FEIS must respond to the comments,[124] and is the document relied on by the Bureau in making its final decision.[125] The Bureau's final decision is issued in a record of decision (ROD).[126]

In conjunction with BPA and the Corps, the Bureau issued a FEIS in November of 1995 on the environmental impacts of the operation of the FCRPS, entitled the System Operation Review (SOR).[127] The SOR's preferred alternative—one of thirteen alternatives examined in the

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[120] Scoping is an "early and open process" to (1) determine the scope of issues to be addressed and (2) identify the significant issues related to the proposed action. 40 C.F.R. § 1501.7. The Bureau must invite affected (1) federal, state, and local agencies, (2) Indian tribes, and (3) other interested persons to participate in the scoping process. *Id.* § 1501.7(a)(1).

[121] The Bureau must examine three types of actions (connected, cumulative, and similar), three types of alternatives (no action, other reasonable courses of action, and mitigation measures), and three types of impacts (direct, indirect, and cumulative) to determine the scope of the EIS. 40 C.F.R. § 1508.25(a)-(c).

[122] 40 C.F.R. § 1502.9. *See id.* § 1502.9(c) for circumstances which require the Bureau to supplement an EIS.

[123] 40 C.F.R. § 1503.1(a)(1). The Bureau must request the comments of appropriate state and local agencies, Indian tribes, the public, and any agency that has requested it be notified of actions similar to that proposed. *Id.* § 1503.1(b).

[124] 40 C.F.R. § 1502.9(b).

[125] CEQ's regulations outline the procedures the Bureau must follow in its decisionmaking to comply with NEPA. 40 C.F.R. § 1505.1.

[126] 40 C.F.R. § 1505.2. A ROD must contain certain findings: (1) the decision itself; (2) all the alternatives considered (specifying the alternatives which were considered to be "environmentally preferable"); (3) the factors balanced by the agency in making its decision; and (4) whether "all practicable means to avoid or minimize environmental harm from the alternative selected have been adopted, and if not, why they were not." *Id.* §§ 1505.2(a)-(c). A monitoring and enforcement program for mitigation of the environmental impacts of the decision (if applicable) must also be adopted in the ROD. *Id.* § 1505.2(c). The Bureau may also take further future actions to ensure that its decision is implemented. *Id.* § 1505.3.

[127] U.S. ARMY CORPS OF ENGINEERS, NORTH PACIFIC DIVISION ET AL., COLUMBIA RIVER SYSTEM OPERATION REVIEW: FINAL ENVIRONMENTAL IMPACT STATEMENT (Nov. 1995) (consisting of 20 technical appendices labeled "A" to "T"). A summary of the SOR is also available. SOR SUMMARY, *supra* note 9. The EIS process for the operation of the FCRPS began in 1990. *Id.* at 2.

SOR—[128]consisted of measures consistent with the 1995 NMFS BiOp on the operation of the FCRPS and its effects on listed Snake River salmon.[129]

(4) Land Management

(A) Property Management Powers

The Secretary of the Interior is authorized to acquire any rights or property necessary to carry out the purposes of the Reclamation Act.[130] Specifically, the Secretary may purchase lands or interests in lands for the "relocation of highways, roadways, railroads, telegraph, telephone, or electric transmission lines, or any other properties whatsoever," in connection with the construction, operation, and maintenance of any project.[131] The Secretary may also convey or exchange Bureau property and grant perpetual easements.[132] The Secretary uses Reclamation

Fund monies in acquiring property,[133] and proceeds from any conveyance are deposited in the Fund.[134] In addition, the Bureau may acquire property for recreation[135] and fish and wildlife enhancement and conservation purposes.[136]

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[128] The SOR contained seven strategies, encompassing 13 alternatives. SOR SUMMARY, *supra* note 9, at 13. For a summary of the strategies and alternatives, see *id*. at 14-38.

[129] *Id*. at 34-37 (the preferred alternative also consisted of the measures contained in the USFWS's 1995 BiOp concerning the operation of the FCRPS and its effect on listed white sturgeon). *See infra* §§ 2.7(2)(A) (NMFS BiOp), 2.8(2)(A) (USFWS BiOp).

[130] 43 U.S.C. § 421.

[131] 43 U.S.C. § 389(a).

[132] 43 U.S.C. § 389(c).

[133] 43 U.S.C. § 391.

[134] 43 U.S.C. § 392.

[135] 16 U.S.C. § 460l-18(a). *See supra* § 2.2(1)(F).

[136] 16 U.S.C. §§ 460l-18(a) (fish and wildlife enhancement), 663(c) (ability to acquire title, land, waters, and interests therein for wildlife conservation). *See also supra* §§ 2.2(2)(C), 2.2(2)(B).

2.3 The Federal Energy Regulatory Commission[1]

Under the terms of the Federal Power Act (the FPA),[2] the federal government regulates non-federal hydroelectric projects. The Federal Energy Regulatory Commission (FERC), an independent regulatory agency within the Department of Energy, is the entity designated by Congress to carry out the provisions of the FPA.[3] In addition to the requirements imposed on FERC by the FPA, several other federal statutes govern the agency in fulfilling its responsibilities including the Northwest Power Act of 1980,[4] the Endangered Species Act,[5] the National Environmental Policy Act,[6] and the Clean Water Act.[7]

(1) Water Management

(A) Hydropower Licensing

FERC has jurisdiction over the construction and operation of non-federal hydroelectric projects on four types of waterways.[8] First, FERC has jurisdiction over projects located on "navigable waters of the United States."[9] To fall within the definition of "navigable waters of the United States," a

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[1] This section was adapted from Michael C. Blumm, *Hydroelectric Regulation Under the Federal Power Act*, *in* 4 WATERS AND WATER RIGHTS 377-450 (Robert E. Beck ed., forthcoming 1997).

[2] 16 U.S.C. §§ 791 to 825u (1994).

[3] The FPA originally created the Federal Power Commission (FPC) to carry out the Act's provisions. *See* 16 U.S.C. § 792. However, the FPC was later replaced with FERC. Department of Energy Organization Act of 1977, Pub. L. No. 95-91, §§ 301(b), 401-407, 91 Stat. 565, 578, 582-87 (1977).

[4] Pacific Northwest Electric Power Planning and Conservation Act of 1980, 16 U.S.C. §§ 839 to 839h (1994).

[5] 16 U.S.C. §§ 1531 to 1544 (1994).

[6] 42 U.S.C. §§ 4321 to 4370d (1994).

[7] 33 U.S.C. §§ 1251 to 1387 (1994).

[8] Projects constructed, operated, and maintained in accordance with a valid federal permit or existing right-of-way prior to June 10, 1920 (the date of the enactment of the FPA) are not subject to FPA jurisdiction. 16 U.S.C. §§ 816, 817(1).

[9] 16 U.S.C. § 817(1). The FPA defines "navigable waters" as:

> [T]hose parts of streams or other bodies of water over which Congress has jurisdiction under its authority to regulate commerce with foreign nations and among the several States, and which either in their natural or improved condition notwithstanding interruptions between the navigable parts of such streams or waters by falls, shallows, or rapids compelling land carriage, are used or suitable for use for the transportation of persons or property in interstate or foreign commerce, including therein all such interrupting falls, shallows, or rapids, together with such other parts of streams as shall have been authorized by Congress for improvement by the United States or shall have been recommended to Congress for such improvement after investigation under its authority.

Id. § 796(8).

river must form a highway for commerce with other states or foreign countries by itself or by connecting with other waters.[10] The Supreme Court has also held that "navigable waters" also includes waters which could be made navigable with reasonable improvements.[11]

Second, FERC has exclusive jurisdiction over non-federal projects occupying federal lands.[12] However, FERC may not issue a license in any national park or monument.[13] Third, projects using surplus water or hydropower from a government dam fall within FERC's jurisdiction.[14]

Finally, FERC has jurisdiction over most projects built after 1935 that are located on non-navigable streams. However, to invoke FERC jurisdiction the project must: (1) be located on a waterway subject to Congress's Commerce Clause; (2) affect interstate or foreign commerce; and (3) have undergone construction or major modification after August 26, 1935.[15]

Project owners not subject to one of the four types of "mandatory" FERC jurisdiction mentioned above need not apply for a license. However, FERC

[10] Sierra Pacific Power Co. v. FERC, 681 F.2d 1134, 1137-38 (9th Cir. 1982), *cert. denied*, 460 U.S. 1082 (1983).

[11] United States v. Appalachian Power Co., 311 U.S. 377, 407-08 (1940). Further, a lack of commercial traffic is not "a bar to a conclusion of navigability where personal and private use of boats demonstrates the availability of the stream for the simpler types of commercial navigation." *Id*. at 416. Certain types of recreational boating, such as canoeing, have been deemed sufficient to establish navigability. *See, e.g.*, New York v. FERC, 954 F.2d 56 (2d Cir. 1992); *see also* Blumm, *supra* note 1, at 388 n. 87 (listing more cases). However, FERC has declined to find navigability where the recreational boating involves kayaks or specialized water crafts designed for river running. Pennsylvania Electric Co., 56 F.E.R.C. ¶ 61,435, at 62,549 (1991) (FERC distinguishing this "highly specialized recreational use" from "simpler forms of commercial navigation, which have as their purpose the transportation of persons or property in interstate commerce"); PacifiCorp Electric Operations, 73 F.E.R.C. ¶ 61,365, at 62,141 n. 26 (1995).

[12] 16 U.S.C. § 817(1).

[13] 16 U.S.C. §§ 796(2), 797(e). FERC has exclusive jurisdiction over projects on federal Indian reservations. Escondido Mut. Water Co. v. La Jolla Band of Mission Indians, 466 U.S. 765 (1984). However, Indian tribes must approve the annual charges set by FERC for projects located on reservations. 16 U.S.C. § 803(e)(1).

[14] 16 U.S.C. § 817(1).

[15] 16 U.S.C. § 817(1). *See also* Act of Aug. 26, 1935, §§ 202, 210, 49 Stat. 839, 846 (1935) (1935 amendments to the FPA); Union Elec. Co. v. FPC, 381 U.S. 1796 (1965) (FPA extends to the full reach of Congress's Commerce Clause authority).

has "permissive" jurisdiction to license projects not subject to mandatory FERC jurisdiction, but only upon the project owner's request.[16]

If mandatory jurisdiction exists over a certain project, a FERC license[17] is required unless the project qualifies for an exemption from FERC licensing.[18]

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[16] 16 U.S.C. § 797(e); Swanton Village, Vermont, 70 F.E.R.C. ¶ 61,325, at 61,992-93 (1995) (if none of the four types of mandatory FERC jurisdiction are invoked, § 797(e) "would permit licensing of a hydroelectric project in response to a voluntary application if the project is located on a Commerce Clause water"). Projects licensed pursuant to permissive FERC jurisdiction need not apply for relicensing at the expiration of their license. City of Pasadena Water & Power, 46 F.E.R.C. ¶ 61,004, at 61,011-12 (1989). However, these projects are still subject to state and local regulation. Pennsylvania Electric Co., 56 F.E.R.C. ¶ 61,435, at 62,551 (1991).

[17] There are two types of FERC license applications: Long-form and short-form. Long-form license applications are required for major unconstructed or modified projects with an installed capacity greater than five megawatts. 18 C.F.R. § 4.40 (1996). Short-form license applications are required for minor projects with an installed capacity of five megawatts or less that do not qualify for an exemption from licensing. *Id*. § 4.60(a). *See id*. §§ 4.41 (listing the required contents of a long-form license application), 4.61 (contents for short-form license application). Licenses may be transferred, but not without written approval from FERC. 16 U.S.C. § 801. The FPA lists conditions that must be present in FERC licenses, *id*. § 803, and gives FERC the power to set other license conditions. *Id*. § 803(g). FERC licenses are revocable. *Id*. § 823b(b).

Preliminary permits are also available to license applicants. *Id*. § 798. A preliminary permit does not authorize construction of a project or guarantee a FERC license, but does enable the permittee to engage in feasibility and environmental studies necessary for licensing for up to three years. *Id*. § 798. Preliminary permit holders can also be given priority over other long-form license applicants. *See* 18 C.F.R. §§ 4.37(c)(1)-(3).

FERC must give preference to state and municipal applicants for licenses and preliminary permits as long as FERC deems that the state or municipal plan is "equally well adapted" to "conserve and utilize in the public interest the water resources of the region." 16 U.S.C. § 800(a). Similar criteria may be used by FERC to give preference between other applicants that are not states or municipalities. *Id*.

For a comprehensive examination of the entire FERC licensing process, see Blumm, *supra* note 1, at 393-402.

[18] A project that (1) is not located on federal lands, (2) uses a conduit for hydropower production, and (3) is no more than 15 megawatts, may be exempted (in whole or in part) from FERC licensing procedures. 16 U.S.C. §§ 823a(a), (b) (if a project is operated by a state or local government for water supply purposes, the capacity may be up to 40 megawatts). FERC defines a conduit as any tunnel, canal, pipeline, or ditch operated primarily for water distribution, not hydropower production. 18 C.F.R. § 4.30(a)(2).

Small hydroelectric projects which are located at existing dams and have a proposed capacity of no more than 5,000 kilowatts may also be exempt from FERC licensing. 16 U.S.C. §§ 2705(d), 2708(a)(1). Other small hydroelectric projects that do not qualify for an exemption may still qualify for short-form licensing procedures. *Id*. § 2705(b). However, both types of exempted projects are subject to mandatory conditions set by federal and state fish and wildlife agencies to "prevent loss of, or damage to" fish and wildlife resources. 16 U.S.C. §§ 823a(c), 2705(b), (d). These fish and wildlife conditions are submitted under the process created by the Fish and Wildlife Coordination Act. 16 U.S.C. §§ 661 to 666c (1994). All exempted projects must still complete FERC's three-stage environmental consultation with federal and state fish and wildlife agencies and Indian tribes. 18 C.F.R. § 4.38(a)(4)(ii).

As of late 1994, there were 216 FERC-licensed projects and 117 exempted projects in the four Basin states.[19]

FERC may license projects inconsistent with state laws. The Supreme Court has held that the FPA authorizes, but does not mandate, FERC to require that license applicants provide satisfactory evidence of compliance with state laws.[20] However, states, under the Clean Water Act,[21] may still exercise "veto" power over conditions contained in FERC licenses. Under section 401 of the Clean Water Act, FERC license applicants must obtain state certification that their project will meet state water quality standards.[22] Thus, a state may effectively refuse any FERC license that would violate state water quality standards or "any other appropriate requirement of state law" prescribed in the certification.[23]

The FERC licensing process must comply with the National Environmental Policy Act (NEPA).[24] However, FERC's NEPA compliance begins only after a three-stage environmental consultation process completed prior to the filing

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[19] FEDERAL ENERGY REGULATORY COMMISSION, PROJECTS IN THE NORTHWEST STATES (Oct. 1994) (print-out on file with the Northwest Water Law and Policy Project). In Idaho, there are 141 projects. *Id.* (78 exempted projects, 51 licensed major projects, 12 licensed minor projects, and also 10 preliminary permits issued). Montana has 39 projects. *Id.* (11 exempted projects, 21 major licenses, 7 minor licenses, and also 4 preliminary permits). Oregon has 61 projects. *Id.* (9 exempted projects, 47 major licenses, 5 minor licenses, and 12 preliminary permits). Washington has 92 projects. *Id.* (19 exemptions, 64 major licenses, 9 minor licenses, and also 19 preliminary permits).

[20] First Iowa Hydro-Electric Coop. v. Federal Power Comm'n, 328 U.S. 152, 169 (1946) (interpreting 16 U.S.C. § 802(b) of the FPA). The Supreme Court has also held that states, in issuing state water right permits to a FERC license holder, cannot set minimum stream flow conditions that are contradictory to those in a FERC license. California v. FERC, 495 U.S. 490, 498 (1990).

[21] Clean Water Act, 33 U.S.C. §§ 1251 to 1387 (1994).

[22] 33 U.S.C. § 1341(a)(1).

[23] 33 U.S.C. § 1341(d). The Supreme Court has held that state-imposed minimum streamflows to protect salmon are permissible conditions of a § 401 state water quality certification. PUD No. 1 of Jefferson County v. Washington Dep't of Ecology, 114 S. Ct. 1900, 1908-12 (1994) (finding that § 401 grants states the authority to condition hydroelectric project operations on compliance with state water quality standards).

[24] 42 U.S.C. §§ 4321 to 4370d (1994). *See infra* § 2.3(3)(A) for more on the NEPA process. FERC's NEPA regulations can be found at 18 C.F.R. pt. 380. FERC amended its NEPA regulations in 1991. *See* Blumm, *supra* note 1, at 413-14.

of a FERC license application.[25] FERC license applicants must also prepare an "Exhibit E Environmental Report" for its project to help facilitate the NEPA process.[26]

Licenses may be issued for up to fifty years.[27] All projects licensed by FERC must be "best adapted" to a comprehensive waterway plan.[28] All FERC licenses are subject to certain protective conditions for fish and wildlife prescribed by federal fish and wildlife agencies.[29] FERC licenses located on federal reserved lands are subject to conditions established by federal land managers.[30] FERC licensees must also pay annual license fees.[31]

At the end of the license term, FERC license holders are not "entitled" to a new license, and FERC may issue a license for the project to a different applicant if it wishes.[32] The federal government may take over a project

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[25] FERC's regulations for the three-stage early consultation process are located at 18 C.F.R. § 4.38. *See infra* § 2.3(3)(B) for more on FERC's three-stage early environmental consultation process. *See also* Blumm, *supra* note 1, at 414-16 for a detailed examination of the three-stage consultation process.

[26] *See infra* § 2.3(3)(B) for more on Exhibit E reports.

[27] 16 U.S.C. § 799. A FERC license holder must begin project construction no later than four years after the issuance of the license, or FERC must terminate the license. *Id*. § 806 (two-year limit, with two-year extension available).

[28] 16 U.S.C. § 803(a)(1). These plans must examine multiple project uses. *Id*. (commerce; hydropower; protection, mitigation, and enhancement of fish and wildlife and related spawning grounds and habitat; irrigation; flood control; water supply; and recreation). FERC regulations consider a plan to be a "comprehensive plan" within the meaning of the FPA if it: (1) is prepared by a federal or state agency authorized to prepare such a plan; (2) is a comprehensive study of one or more beneficial waterway uses; (3) includes a description of the standards, data, and methodology employed in preparing the plan; and (4) is filed with FERC. 18 C.F.R. § 2.19. FERC must "consider" the extent to which a project is consistent with a comprehensive waterway plan. 16 U.S.C. § 803(a)(2); 18 C.F.R. § 2.19. FERC does not consider comprehensive waterway plans when issuing preliminary permits. Mt. Morris Hydro Ptns., 47 F.E.R.C. ¶ 62,125 (1989).

[29] *See infra* § 2.3(2)(B).

[30] *See infra* § 2.3(2)(B).

[31] 16 U.S.C. § 803(e). Any costs incurred by fish and wildlife agencies, in carrying out their responsibilities under the FPA, may be included in these charges. *Id*.

[32] *See* Blumm, *supra* note 1, at 438 ("In a relicensing FERC has four options: (1) relicense the project to the current licensee, (2) grant a license to another licensee, (3) grant a nonpower license, or (4) recommend federal takeover.") (citations omitted).

when the license expires,[33] or the project may be relicensed if the government does not invoke its takeover authority.[34]

Relicensing[35] is quite similar to initial licensing, often employing the same processes and requirements.[36] If a project is relicensed, the term of the license cannot be less than thirty years nor more than fifty.[37] Relicensings must be "best adapted" to comprehensive waterway plans,[38] incorporate fish and wildlife agency recommendations,[39] and complete an Exhibit E report.[40]

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[33] 16 U.S.C. § 807(a) (the government must pay the project operator the net investment value and severance damages when exercising its takeover authority). Federal takeover authority does not extend to projects owned by states and municipalities. *Id*. § 828b.

[34] 16 U.S.C. § 808(a)(1). FERC may choose to issue a license for the project to a new licensee. *Id*. If FERC neither relicenses the original project operator nor issues a license to a new licensee, then FERC must issue an annual license to "the then licensee under the terms and conditions of the existing license until the property is taken over or a new license is issued." *Id*.

[35] A relicense is referred to as a "new license," which is different from the first license issued for a project, or an "original license." *See* 18 C.F.R. § 4.30(b)(19); 16 U.S.C. § 808(a). Project operators who wish to relicense must notify FERC of their intention to do so at least five years before the expiration of the existing license. 16 U.S.C. § 808(b)(1); 18 C.F.R. § 16.6(c).

Unlike licensing and preliminary permits, relicensing does not afford a preference for state or municipal applicants. 16 U.S.C. § 800(a) (1986 amendments discontinued the practice of granting state and municipal preferences at relicensing).

[36] *See, e.g.*, 18 C.F.R. §§ 4.50(a) (same requirements for licenses and relicenses for major projects at existing dams), 4.60(a) (same requirements for licenses and relicenses for certain minor and major water projects). FERC's relicensing procedures are located at 18 C.F.R. pt. 16.

[37] 16 U.S.C. § 808(e).

[38] Section 808(a)(2) requires that the license conditions in § 803 of the FPA be incorporated into the relicensing process. 16 U.S.C. § 808(a)(2). The comprehensive waterway plans condition is located at *id*. § 808(3)(a).

[39] 16 U.S.C. § 803(j). *See infra* § 2.3(2)(B). Competing applicants in a relicensing are not comparatively evaluated by FERC on the merits of their fish and wildlife plans. 16 U.S.C. § 808(a)(2)(G). FERC has ruled that fishway conditions prescribed by federal fishery agencies, which apply during an initial licensing, *id*. § 811, also apply during relicensing. Washington Public Service Comm'n, 62 F.E.R.C. ¶ 61,095, at 61,684-85 (1993). However, the Seventh Circuit has been the only federal court to interpret § 811 of the FPA, upholding FERC's determination. Wisconsin Public Service Corp. v. FERC, 32 F.3d 1165 (7th Cir. 1994). *See infra* § 2.3(2)(B).

FERC relicenses on federal land reservations are also subject to conditions imposed by the managing federal land agency. *See, e.g.*, Mega Renewables, 44 F.E.R.C. ¶ 61,395 (1988); City of Pasadena, 46 F.E.R.C. ¶ 61,004 (1989); *see also infra* § 2.3(2)(B) for more on federal land manager conditions.

[40] 18 C.F.R. §§ 4.40(a), (f) (requiring an Exhibit E report for the relicense of a "major modified project" with a capacity of more than 5 megawatts), 4.50(a), 4.51(f), (requiring an Exhibit E report, save for a few exceptions, for the relicense of major projects at existing dams that are proposed to have a capacity of more than 5 megawatts), 4.60(a), 4.61(d) (requiring an Exhibit E report for the relicense of: (1) minor water power projects, (2) any major project at

There are forty-one FERC projects in the four Basin states that will require relicensing between the years 1996 and 2010.[41]

(B) Navigation

Upon the request of the Coast Guard,[42] FERC must require a licensee to construct, operate, and maintain any requested "lights and signals" for navigation purposes.[43] Any navigation facilities at a FERC project are subject to rules and regulations promulgated by the Corps of Engineers, under the supervision of the Secretary of the Army.[44] Licensees who fail to follow these regulations are guilty of a misdemeanor[45] and subject to a fine of no more than $500 for each day during which the offense occurs.[46]

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an existing dam that has a capacity of 5 megawatts or less, and (3) any major unconstructed project or major modified project with a capacity of 5 megawatts or less). *See infra* § 2.3(3)(B).

[41] FEDERAL ENERGY REGULATORY COMM'N, RELICENSE FORECAST 1993-2010, at 6 (Dec. 1993) (15 in Idaho (the Lower Salmon, Bliss, Moyie No. 1 & 2, Upper Salmon, Shoshone Falls, Oneida, C.J. Strike, Cabinet Gorge, Grace & Love, Soda, Malad, Ponds Lodge, Warren, Swan Falls, and Hettinger Projects), 3 in Montana (the Milltown, Big Fork, and Noxon Rapids Projects), 9 in Oregon (the Rock Creek, Powerdale, Rounde Butte & Pelton, Bull Run, Willamette, Hells Canyon, Oak Grove, North Fork, and Trail Bridge & Carmen Projects), and 14 in Washington (the Yale, Mayfield & Mossyrock, Waneta, Box Canyon, Trinity, Chelan, Priest Rapids, Swift No. 1, Swift No. 2, Rocky Reach, Spokane River, Sullivan Lake, Lewis River, and Packwood Lake Projects). Fourteen licenses in the Snake River Basin will expire from 1993 to 2010. *Id*. at 11. Idaho Power Company's licenses for several projects on the Snake River will expire soon: one in 1997 (Lower Salmon), one in 1998 (Bliss), two in 1999 (Upper Salmon and Shoshone Falls), one in 2005 (Hells Canyon), and one in 2010 (Swan Falls). *Id*. at 27-29, 42, 49. Also, Grant County PUD's license for Priest Rapids on the mainstem Columbia River will expire in 2005, and Chelan County PUD's license for Rocky Reach on the mainstem Columbia River will expire in 2006. *Id*. at 42-43.

[42] Section 811 vests this authority in the "Secretary of the Department in which the Coast Guard is operated." 16 U.S.C. § 811.

[43] 16 U.S.C. § 811.

[44] *Id*. The Corps' navigation regulations are at 33 C.F.R. pt. 207 (1996).

[45] 16 U.S.C. § 811.

[46] *Id*. § 825o(b). Section 825o(a) also provides for a maximum fine of $5,000 and two years in prison for "statutory violations." Section 825o(b) contains the penalties for "rules violations." However, it is unclear whether this section applies to § 811 violations, although § 811 does refer to the entirety of § 825o when enunciating the penalties for violations of § 811.

(C) The Wild and Scenic Rivers Act[47]

FERC may not issue licenses "on or directly affecting" rivers designated for protection under the Wild and Scenic Rivers Act.[48] FERC has held that whether or not a FERC project will "directly affect" a designated river is a decision vested in the federal land management agency responsible for administering the river corridor.[49] However, FERC may license projects above or below a designated river (or a tributary) so long as the project does not "unreasonably diminish" the values for which the river was set aside.[50] FERC licenses may not be issued on "study rivers" for three years.[51] Also, rivers nominated for designation by state governors receive a one-year moratorium on FERC licensing.[52]

(2) Fish and Wildlife Protection

(A) The Endangered Species Act

The Endangered Species Act (the ESA)[53] protects species listed as either endangered or threatened[54] and imposes substantive duties on FERC. FERC must ensure that its activities are not likely to (1) jeopardize the continued existence of listed species or (2) adversely modify the critical habitat of such species.[55] Any proposed action that is likely to jeopardize a listed species or adversely affect its critical habitat requires FERC to consult with the

[47] 16 U.S.C. §§ 1271 to 1286 (1994).

[48] 16 U.S.C. § 1278(a).

[49] China Flat Co., 27 F.E.R.C. ¶ 61,024 (1984).

[50] 16 U.S.C. § 1278(a).

[51] 16 U.S.C. § 1278(b) (unless Congress specifies otherwise).

[52] 16 U.S.C. § 1278(b)(ii) (to allow the Secretary of the Interior time to consider the nomination).

[53] 16 U.S.C. §§ 1531 to 1544 (1994).

[54] The Secretaries of Interior and Commerce make listing determinations. 16 U.S.C. § 1533(a)(1); *see also* 50 C.F.R. pt. 424 (1995). Interested persons may petition the Secretary to list a species. 16 U.S.C. § 1533(b)(3)(A); *see also* 50 C.F.R. § 424.14.

[55] 16 U.S.C. § 1536(a)(2). The Secretaries of Interior and Commerce must, "to the maximum extent prudent and determinable," designate critical habitat concurrent with the listing of a species. *Id*. § 1533(a)(3)(A); *see also* 50 C.F.R. § 424.12 (criteria for designating critical habitat). FERC also has an affirmative obligation under the ESA to take actions to conserve listed species. 16 U.S.C. § 1536(a)(1).

relevant federal consulting agency, either the United States Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service (NMFS).[56]

Initially, FERC must inquire whether a listed or proposed[57] species "may be present in the area" of FERC's proposed activity.[58] If the consulting agency finds that a listed species is present in the area,[59] FERC must prepare a biological assessment (BA).[60] For a proposed species, FERC need only "confer" with the consulting agency if the authorized activity is likely to jeopardize the continued existence of any proposed species or result in the destruction or adverse modification of proposed critical habitat.[61] If the BA shows that FERC's proposed activity is likely to affect the continued existence of the listed species or adversely affect its critical habitat, formal consultation is required.[62]

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[56] USFWS (Department of the Interior) (non-marine species) and NMFS (Department of Commerce) (marine species) are the two federal agencies which share responsibility for administering the ESA. 50 C.F.R. § 402.01(b). *See infra* §§ 2.8(2)(A) (USFWS), 2.7(2)(A) (NMFS) for a discussion of the ESA responsibilities of these "consulting agencies."

[57] A "proposed species" is one for which a final listing determination is pending. 50 C.F.R. § 402.02.

[58] 16 U.S.C. § 1536(c)(1); *see also* 50 C.F.R. § 402.12. FERC may also initiate "early consultation" with the USFWS or NMFS if a prospective federal permit applicant "has reason to believe that the prospective action may affect listed species or critical habitat" and requests that FERC enter into early consultation. 50 C.F.R. § 402.11. Prior to the initiation of early consultation the prospective applicant must certify to FERC that "(1) it has a definite proposal outlining the action and its effects and (2) it intends to implement its proposal, if authorized. *Id*. § 402.11(b). The procedures and responsibilities for early consultation are similar to those required for formal consultation except that references to the "applicant" are treated as "prospective applicant" and a "preliminary biological opinion" not a biological opinion is issued by the consulting agency. *Id*. § 402.11(d). For a discussion of the formal consultation requirement see *infra* notes 62-65 and accompanying text.

[59] The consulting agency must use "the best scientific and commercial data available" in making this determination. 16 U.S.C. § 1536(c)(1).

[60] 16 U.S.C. § 1536(c)(1). The contents of the BA are "at the discretion of" FERC, depending on the nature of the proposed action. 50 C.F.R. § 402.12(f). However, the BA must be based on "the best available scientific and commercial data available." 16 U.S.C. § 1536(a)(2). The BA must be completed within 180 days or a mutually agreed upon date. *Id*. § 1536(c)(1).

[61] 16 U.S.C. § 1536(a)(4); *see also* 50 C.F.R. § 402.10.

[62] 50 C.F.R. § 402.12(k). Formal consultation regulations for USFWS and NMFS are at 50 C.F.R. § 402.14. FERC may not "make any irreversible or irretrievable commitment of resources" once formal consultation has begun. 16 U.S.C. § 1536(d); 50 C.F.R. § 402.09.

Action agencies such as FERC may also engage in "informal consultation" with the consulting agencies to determine whether formal consultation is required. 50 C.F.R. § 402.13. Informal consultation includes all discussions and correspondence between the action and consulting agencies. *Id*. § 402.13(a). The consulting agency may suggest modifications to the proposed action that could be implemented to avoid adverse effects to the listed species or corresponding critical habitat. *Id*. § 402.13(b).

Formal consultation results in a biological opinion (BiOp) issued by the consulting agency.[63] If the consulting agency concludes that FERC's proposed action is not likely to jeopardize the species, the agency issues a "no jeopardy BiOp."[64] Conversely, if the consulting agency cannot make this determination, it must issue a "jeopardy BiOp," which may include "reasonable and prudent alternatives" to the proposed action that will avoid jeopardy.[65]

If FERC relies on and follows the measures specified in the BiOp, it has probably fulfilled its ESA obligations.[66] However, the Ninth Circuit has held that an agency's reliance on a BiOp to satisfy its ESA obligations cannot be arbitrary and capricious.[67] The Ninth Circuit has also ruled that action agencies such as FERC are not bound by all the details of a BiOp so long as they take alternative, reasonably adequate measures to ensure the continued existence of listed species.[68]

The ESA also prohibits action agencies such as FERC from "taking" any endangered species.[69] Taking is defined broadly to include harassing or

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[63] *See* 16 U.S.C. § 1536(b)(3)(A). Content requirements for BiOps are at 50 C.F.R. § 402.14(h). *See also* 50 C.F.R. § 402.14(g) (listing the expert agencies' responsibilities during formal consultation, including: (1) the evaluation of the effects of the proposed action and cumulative effects on the listed species or critical habitat, *id*. § 402.14(g)(3), and (2) the use of "the best scientific and commercial data available." *Id*. § 402.14(g)(8)).

[64] 50 C.F.R. § 402.14(h)(3).

[65] 50 C.F.R. § 402.14(h)(3). The consulting agency can also issue a jeopardy BiOp with no reasonable and prudent alternatives. *See id*. (directing that a jeopardy BiOp "shall include reasonable and prudent alternatives, if any"). FERC may be required to reinitiate formal consultation with the consulting agency when: (1) FERC retains discretionary control over the action and (2) certain new conditions arise or new information becomes available. 50 C.F.R. §§ 402.16(a)-(d).

[66] Environmental Coalition of Broward County, Inc. v. Meyers, 831 F.2d 984 (11th Cir. 1987). *See also* 50 C.F.R. § 402.15 (responsibilities of the action agency following issuance of a BiOp).

[67] Pyramid Lake Tribe of Indians v. United States Dep't of the Navy, 898 F.2d 1410, 1415 (9th Cir. 1990) (action agencies may not solely rely on BiOps to establish conclusively that they have satisfied their ESA obligations; a decision to rely on a BiOp must be shown to not be arbitrary and capricious).

[68] Tribal Village of Akutan v. Hodel, 854 F.2d 651, 660-61 (9th Cir. 1988). *But see* American Rivers v. National Marine Fisheries Service, No. 96-384, slip op. at 28-29 (D. Or. April 3, 1997) (distinguishing *Village of Akutan* and rejecting plaintiff's claim that any deviation from the reasonable and prudent alternatives provided by NMFS' 1994-1998 Biological Opinion for Federal Columbia River Power System Operations triggers a duty to come up with other mitigative measures).

[69] The ESA prohibits all persons (including federal agencies) from the "taking" of any endangered fish and wildlife species. 16 U.S.C. § 1538(a)(1). Federal regulations expand this prohibition to threatened species as well. 50 C.F.R. § 17.31(a).

harming species,[70] but incidental take "statements" (similar to permits) that reduce or minimize the take of threatened or endangered species may be issued by the consulting agency.[71]

(B) The Federal Power Act

FERC may issue licenses in federal land reservations so long as FERC: (1) finds that the project will not interfere or be inconsistent with the reservation's purpose and (2) includes in the license any conditions deemed necessary by the agency administering the reservation.[72] The Supreme Court has held that conditions deemed necessary by the land managing agency are mandatory, and must be included in FERC's license.[73] FERC has declared that conditions issued by land management agencies apply to the relicensing process as well.[74] Federal land management agency conditions do not apply to unreserved federal lands, but FERC licenses and exemptions issued after 1992 require a right-of-way permit pursuant to both the FPA[75] and the Federal Land Policy and Management Act (FLPMA).[76]

The FPA requires FERC to include in its licenses "such fishways" as the Secretary of Commerce or Interior shall prescribe.[77] Fishway conditions must

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[70] The ESA defines "take" as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in such conduct. 16 U.S.C. § 1532(19). Federal regulations further define "harm" as any act that actually kills or injures wildlife, including "significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering." 50 C.F.R. § 17.3. This regulation was upheld by the Supreme Court. Babbitt v. Sweet Home Chapter, Communities For A Greater Oregon, 115 S. Ct. 2407 (1995).

[71] An incidental take is a taking that results from, but is not the purpose of, "carrying out an otherwise lawful activity conducted by the Federal agency or applicant." 50 C.F.R. § 402.02. An incidental take requires a statement issued by the consulting agency during formal consultation that sets out the terms and conditions that must be complied with by the federal agency. *Id*. § 402.14(i). Incidental take statements may be included in a BiOp.

[72] 16 U.S.C. § 797(e). Once FERC issues notice that a license application is "ready for environmental analysis," federal land management agencies have 60 days to file their conditions. 18 C.F.R. § 4.34(b). Federal land management agencies must "specifically identify and explain the mandatory terms and conditions or prescriptions and their evidentiary and legal basis." *Id*. § 4.34(b)(1).

[73] Escondido Mutual Water Co. v. La Jolla Band of Mission Indians, 466 U.S. 765, 779 (1984).

[74] *See, e.g.*, Mega Renewables, 44 F.E.R.C. ¶ 61,395 (1988); City of Pasadena, 46 F.E.R.C. ¶ 61,004 (1989).

[75] 16 U.S.C. § 818.

[76] 43 U.S.C. §§ 1761(a)(4), (d) (1994).

[77] 16 U.S.C. § 811.

be issued within sixty days of FERC's public notice that a project is ready for "environmental analysis."[78] However, since 1992, no working definition of "fishway" exists.[79]

Since 1986, FERC must include conditions in its licenses that "adequately and equitably protect, mitigate damages to, and enhance" fish, wildlife, and habitat affected by licensed projects.[80] These conditions are based on recommendations received by federal and state fish and wildlife agencies[81] under the consultation process required by the Fish and Wildlife Coordination Act.[82] If the recommendations are inconsistent with the "purposes and requirements" of the FPA or any other applicable law, FERC must try to solve the inconsistency, giving "due weight" to the recommendations.[83] If FERC does not adopt the recommendations, it must then publish both: (1) why the recommendations are inconsistent with applicable law and (2) how the conditions FERC did adopt will protect, mitigate, and enhance the affected fish, wildlife, and habitat.[84] FERC has promulgated a six-step consultation process for implementing this section of the FPA.[85]

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[78] 18 C.F.R. § 4.34(b).

[79] In 1992, Congress vacated FERC's regulatory definition of "fishway." 1992 Energy Policy Act, Pub. L. No. 102-486, § 1701(b), 106 Stat. 3008 (1992). Congress declared that any future definition must be "concurred in by the Secretary of the Interior and the Secretary of Commerce." *Id*. Congress specifically limited what may constitute a fishway under any future regulatory definition, limiting the items that may constitute a "fishway" under the FPA to "physical structures, facilities, or devices necessary to maintain all life stages of such fish and project operations and measures related to such structures, facilities, or devices which are necessary to ensure the effectiveness of such structures, facilities, or devices for such fish." *Id*.

For a discussion of FERC's previous definition and interpretation of fishway, see Blumm, *supra* note 1, at 429-30 (noting that FERC has traditionally drawn a distinction between fishways and "more far-reaching conditions" intended to "protect, mitigate, or enhance fish resources" which FERC instead considers to be mere recommendations under § 803(j); also noting that FERC had excluded any protective devices for resident fish from the definition of fishway) (citations omitted).

[80] 16 U.S.C. § 803(j)(1).

[81] 16 U.S.C. § 803(j)(1).

[82] 16 U.S.C. §§ 661 to 661c (1994).

[83] 16 U.S.C. § 803(j)(2).

[84] 16 U.S.C. § 803(j)(2).

[85] First, fish and wildlife agencies must submit their recommendations within 60 days of FERC's public notice that a project is ready for "environmental analysis." 18 C.F.R. § 4.34(b). Second, FERC has 45 days (after the filing of the recommendations) to "seek clarification" of the agency recommendations. *Id*. § 4.34(e)(2). Third, FERC may make a "preliminary determination" that the recommendations are inconsistent with the purposes and requirements of the FPA or other applicable law. *Id*. § 4.34(e)(3). Fourth, the agencies have 45 days to file comments responding to FERC's preliminary determination. *Id*. § 4.34(e)(4). Fifth, within 30 days of the filing of the agency's response, there is an opportunity for a

Projects exempted from FERC licensing, are still subject to mandatory conditions by federal and state fish and wildlife agencies.[86] These conditions are submitted pursuant to the processes outlined in the Fish and Wildlife Coordination Act. Also, since 1992, all reasonable and necessary costs incurred by fish and wildlife agencies for any consultation with FERC or its license applicants may be included in FERC's annual license charges.[87]

(C) The Northwest Power Act

The Northwest Power Act of 1980 (the NPA)[88] created the Northwest Power Planning Council (the Council), an interstate compact agency comprised of two members from each of the four states in the Columbia River Basin.[89] The Council is involved in governing both the basin's federal hydroelectric operations and fish and wildlife resource.

The NPA was created "to assure the Pacific Northwest of an adequate, efficient, economical, and reliable power supply."[90] However, this goal is

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meeting or conference to discuss FERC's preliminary determination of inconsistency. *Id*. § 4.34(e)(5) (the meeting may be requested by the agencies or a party to the FERC licensing proceeding). Finally, the process ends when FERC issues an order granting or denying the license application. *Id*. § 4.34(e)(6). In 1995, FERC summarized its procedures under § 803(j):

> We first determine whether each recommendation is supported by substantial evidence in the record; if not, the recommendation is inconsistent with the requirement of . . . [§ 825l(b)] of the FPA that . . . [FERC] orders be supported by substantial evidence. Second, we determine whether a substantial recommendation is inconsistent with the FPA or other applicable law. Any such inconsistency is usually with . . . [FERC's] determinations under the equal consideration/comprehensive development standards of FPA sections . . . [797(e) and 803(a)(1)], in that the recommendation conflicts unduly with another project purpose or value (including the project's economic benefits). Third, we discuss how the fish and wildlife conditions that are adopted in this order will "adequately and equitably protect, mitigate damages to, and enhance, fish and wildlife (including related spawning grounds and habitat)" affected by the project.

Mead Corp., 72 F.E.R.C. ¶ 61,027, at 61,071 (1995).

FERC has also held that agency requests for both (1) no construction or operation of a project and (2) additional pre-licensing studies are not § 803(j) recommendations. 18 C.F.R. § 4.30(b)(9)(ii).

[86] 16 U.S.C. § 823a(c).

[87] 16 U.S.C. § 803(e)(1).

[88] Pacific Northwest Electric Power Planning and Conservation Act of 1980, 16 U.S.C. §§ 839 to 839h (1994).

[89] 16 U.S.C. § 839b(a)(2). Members from each state are appointed according to the appointment laws of their own state. *Id*. § 839b(a)(2)(B).

[90] 16 U.S.C. § 839(2).

subject to another congressional mandate: that federal dam operators and power marketers "protect, mitigate and enhance the fish and wildlife, including related spawning grounds and habitat, of the Columbia River and its tributaries."[91] The Council, through its Columbia Basin Fish and Wildlife Program (the Program),[92] is the entity responsible for achieving Congress's required fish and wildlife protection and enhancement.[93]

FERC's responsibilities under the NPA are two-fold. First, FERC must exercise its responsibilities consistent with the purposes of the NPA "in a manner that provides equitable treatment for such fish and wildlife with the

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[91] 16 U.S.C. § 839(6).

[92] NORTHWEST POWER PLANNING COUNCIL, COLUMBIA RIVER BASIN FISH AND WILDLIFE PROGRAM (Dec. 14, 1994) [hereinafter 1994 PROGRAM]. Congress enunciated strict statutory criteria for the Council's Program. Time deadlines were set for creating and amending the Program. 16 U.S.C. § 839b(h)(9) (within one year of the receipt of recommendations). The Council must solicit and evaluate fish and wildlife recommendations from state and federal fishery agencies and Indian tribes. *Id.* § 839b(h)(2). The Council must give "due weight" to these recommendations. *Id.* § 839b(h)(7). The Ninth Circuit has construed this section of the NPA to "require that a high degree of deference be given to fishery managers' interpretations of such provisions and their recommendations for program measures." Northwest Resource Info. Ctr., Inc. v. Northwest Power Planning Council, 35 F.3d 1371, 1388 (9th Cir. 1994), *cert. denied sub nom.* Pacific N.W. Generating Coop. v. Northwest Power Planning Council, 116 S. Ct. 50 (1995). If the Council chooses not to follow a recommendation submitted by the fishery agencies and tribes, the Council must explain its reasons for so doing, in writing and in the program itself. 16 U.S.C. § 839b(h)(7); *see also* Northwest Resource Info. Ctr., 35 F.3d at 1385-86. All program measures must satisfy five statutory criteria: (1) "complement the existing and future activities" of fishery agencies and tribes; (2) be based on the "best available scientific knowledge;" (3) use the alternative (where "equally effective alternative means of achieving the same sound biological objective exist") with the "minimum economic cost;" (4) be consistent with Indian treaty rights; and (5) provide for improved anadromous fish survival by providing river flows "of sufficient quality and quantity" to improve "production, migration, and survival of such fish." 16 U.S.C. §§ 839b(h)(6)(A)-(E).

The NPA was amended in 1996, in an appropriations rider sponsored by Senator Slade Gorton (R-Wa.). Energy and Water Development Appropriations Act, Pub. L. No. 104-206, § 504, 110 Stat. 2984, 3005-06 (1996) (amending § 839b(h)(10) of the NPA). The rider requires the Council to make recommendations to BPA concerning funding priority measures implementing the Council's Program. *Id.* at 3005-06 (adding new § 839b(h)(10)(D)(iv)). The Council's recommendations must be based on "sound scientific principles; benefit fish and wildlife; and have a clearly defined objective and outcome with provisions for monitoring and evaluation." *Id.* The Council must establish an Independent Scientific Review Panel which will review fish and wildlife projects proposed for BPA funding. *Id.* (adding new §§ 839b(h)(10)(D)(i)-(ii)). The rider requires the Council to "fully consider" the Panel's recommendations on priorities for project funding, and if the Council does not adopt the Panel's recommendations, to explain its reasons for rejecting the recommendations in writing. *Id.* (adding a new § 839b(h)(10)(D)(vi)).

[93] 16 U.S.C. § 839b(h)(5) (requiring the Council's Program to "consist of measures to protect, mitigate, and enhance fish and wildlife affected by the development, operation, and management" of the Columbia River Basin hydrosystem, while assuring the Pacific Northwest an "adequate, efficient[,] economical, and reliable power supply").

other purposes" for which FERC projects are managed and operated.[94] Also, FERC must take the Council's Program "into account at each relevant stage of decisionmaking processes to the fullest extent practicable."[95] However, the enforceability of the Council's Program remains unclear.[96]

The Council's Program calls for FERC and its licensees in the Basin to implement measures to improve juvenile migration, including boosting river flows on the Snake River[97] and improving passage on the Columbia.[98] The

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[94] 16 U.S.C. § 839b(h)(11)(A)(i).

[95] 16 U.S.C. § 839b(h)(11)(A)(ii). The Council also directs FERC to require its applicants (for licenses, relicenses, exemptions, and preliminary permits) in the Basin "to demonstrate in their applications how the proposed project would take this [P]rogram into account to the fullest extent practicable." 1994 PROGRAM, *supra* note 92, at 12-5.

[96] BPA's former general counsel suggested that the "consistency" provision, 16 U.S.C. § 839b(h)(10), does not require BPA to implement the Council's Program. *See Panel Discussion, Colloquium: Who Runs the River?*, 25 ENVTL. L. 417, 422 (1995) (remarks of Harvey Spigal). The Ninth Circuit seems to agree, stating that BPA "must act consistently with the Council's [P]rogram but in the end has final authority to determine its own decisions." Northwest Resource Info. Ctr., Inc. v. National Marine Fisheries Serv., 25 F.3d 872, 874 (9th Cir. 1994). The general counsel for the Council seems to agree as well:

> The Council's authority in the fish and wildlife area is constrained; it can guide, but not command, federal river management. The investment of federal hydropower revenues to help fish and wildlife must be "consistent" with the Council's [P]rogram, but . . . [BPA] actually writes the checks. The Council has no authority over fish and wildlife agencies, land managers, or irrigators. The Council is not toothless, but it cannot command and control.

John M. Volkman & Willis E. McConnaha, *Through a Glass Darkly: Columbia River Salmon, the Endangered Species Act, and Adaptive Management*, 23 ENVTL. L. 1249, 1254 (1993) (citation omitted). *But see* Michael C. Blumm, et. al., *Beyond the Parity Promise: Struggling to Save Columbia Basin Salmon in the 1990s*, 27 ENVTL. L. 21, 64-65 (arguing that the Council's program is no less enforceable than biological opinions implementing the Endangered Species Act).

[97] Idaho Power Company, a FERC licensee, is to draft Brownlee Dam to provide up to 137,000 acre-feet of water for migrating fall chinook. 1994 PROGRAM, *supra note* 92, at 5-23 (Brownlee can be drafted to a minimum elevation of 2,067 feet for this measure; the Bureau, Idaho, and BPA to assist in securing this water). An acre-foot of water is the amount of water that covers one acre to a depth of one foot (or 325,850 gallons). *Id*. at G-1.

[98] The Council's Program identified three Mid-Columbia public utility districts (PUDs) and required the implementation of measures by each PUD. Douglas County PUD must ensure that the juvenile fish bypass system at Wells Dam continues to operate effectively. *Id*. at 5-39 (subject to FERC approval; the bypass system must also operate in accordance with the 1990 Wells Settlement Agreement). Chelan County PUD was to install collection and bypass facilities at Rocky Reach Dam by 1995. *Id*. Also, juvenile fish screens and bypass facilities are to be installed at Rock Island Dam. *Id*. (subject to FERC approval). Chelan County PUD must also develop plans for spill at both projects by March 1 of each year. *Id*. (subject to FERC approval). Grant County PUD must install juvenile fish screens and bypass systems at Wanapum and Priest Rapids Dams. *Id*. (by March 1, 1998, at Wanapum; by March 1, 1997 at Priest Rapids; both subject to FERC approval). Increased spill at both projects is also called for in the Council's Program. *Id*. (subject to FERC approval).

Council also outlined measures to aid in adult salmon migration.[99] FERC is called upon to develop and implement procedures that comply with the Council's habitat goal, which is to "[p]rotect and improve habitat conditions to ensure compatibility with the biological needs of salmon, steelhead[,] and other fish and wildlife species."[100] FERC licensees are also required to implement protective measures in subbasins and tributaries.[101] FERC is called upon to implement measures to protect resident fish.[102] The Council asks FERC to "take into account to the fullest extent practicable" the wildlife policies established in the Program when developing license conditions.[103]

Mid-Columbia PUDs were also called upon to aid in reducing predation and competition. *Id*. at 5-42 to 5-46.

[99] Idaho Power Company is to draft 100,000 acre-feet from Brownlee every September to help reduce water temperatures for the benefit of returning adult salmon. *Id*. at 6-4. An additional 100,000 acre-feet is to be released from Hells Canyon to reduce water temperatures on the Snake River. *Id*.

Mid-Columbia PUDs must also aid in adult salmon migration. Douglas County PUD was to correct all adult fishway deficiencies at Wells Dam by 1996. *Id*. at 6-5. Chelan County PUD was to do the same at Rocky Reach and Rock Island Dams. *Id*. at 6-5 to 6-6. Chelan County PUD is to also fund and operate a hatchery program at Rock Island. *Id*. at 7-19 (subject to FERC approval). Grant County PUD was to correct all adult fishway deficiencies at Priest Rapids (by 1995) and Wanapum (by 1996) Dams. *Id*. at 6-6.

[100] *Id*. at 7-33 to 7-36.

[101] In the Willamette Subbasin, the Eugene Water and Electric Board must fund a study of the lower McKenzie River to determine the amount of flows necessary for spawning and rearing of salmon and steelhead. *Id*. at 7-51 (subject to FERC approval). In the Lewis Subbasin, PacifiCorp must develop a flow plan to benefit salmon and steelhead below Merwin Dam, in conjunction with fish and wildlife agencies, tribes, and the Washington Department of Ecology. *Id*. at 7-53 (subject to FERC approval). If the Council and FERC approve the plan, it is to become a part of the Council's Program. *Id*.

The Council also directs FERC to require any licensee at Enloe Dam to design and construct improvements needed for the future installation of anadromous fish passage facilities. *Id*. at 7-56. If any hydroelectric facilities are ever added at Dryden Dam, the Council directs FERC to require the licensee to reimburse BPA for an equitable portion of fish screens and bypass facilities at the dam. *Id*. at 7-57. At Willamette Falls, Portland General Electric (along with BPA) is to install an adult trapping facility. *Id*. (subject to FERC approval). Several improvements are to be implemented by the Eugene Water and Electric Board at its Leaburg and Walterville projects. *Id*. at 7-58 to 7-59 (subject to FERC approval).

[102] The Council called for FERC to not alter future operations at the Flint Creek project without considering and incorporating the multiple uses of the project, including the needs of resident fish. *Id*. at 10-11 to 10-12 (in an effort to maintain habitat conditions for the survival of resident fish in Georgetown Lake). The Council also required Pacific Power and Light Company to continue to operate the Big Fork project under the provisions in its FERC license. *Id*. at 10-11.

[103] *Id*. at 11-10 to 11-11. The Council noted that FERC must give "equal consideration" to the protection and mitigation of wildlife in licensing and relicensing under § 803(j) of the FPA. *Id*. at 11-10; 16 U.S.C. § 803(j); *see also supra* § 2.3(2)(B). The Council specifically asks FERC to take into account mitigation projects at federal projects developed pursuant to the Council's wildlife section. 1994 PROGRAM, *supra note* 92, at 11-11. The Council requires that FERC ensure that its license conditions both compliment and are consistent with these

The Council also enumerates several protective fish and wildlife measures for any future FERC license, relicense, or exemption.[104]

(3) Environmental Regulation

(A) The National Environmental Policy Act

The National Environmental Policy Act (NEPA)[105] requires FERC (and any other federal agency) to complete a detailed statement on the environmental impacts of any "major Federal actions significantly affecting the quality of the human environment."[106] This environmental impact statement (EIS) must examine: (1) the environmental impact of the proposed action; (2) any unavoidable adverse environmental effects; and (3) alternatives to the proposed action.[107]

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wildlife mitigation projects and "contribute fully and proportionately to regional wildlife mitigation goals." *Id*. The Council will also monitor FERC's licensing and relicensing proceedings and "comment or intervene where appropriate." *Id*.

[104] *Id*. at 12-1 to 12-6.

[105] 42 U.S.C. §§ 4321 to 4370d (1994).

[106] 42 U.S.C. § 4332(2)(C). For a discussion of what constitutes a "major federal action," see GEORGE C. COGGINS & ROBERT L. GLICKSMAN, 2 PUBLIC NATURAL RESOURCES LAW §§ 10G.03[2] to 10G.04 (1996). There has been much litigation surrounding what is a "major" action, *see id*. § 10G.04, and what is a "federal" action. *Id*. § 10G.03[2] (the key factor in determining whether an action is "federal" is the "agency's authority to influence significant nonfederal activity. . . . [T]he federal agency must possess actual power to control the nonfederal activity") (quoting Sierra Club v. Hodel, 848 F.2d 1068, 1089 (10th Cir. 1988)); *see also* 40 C.F.R. § 1508.18 (1996).

Pursuant to the Energy Policy Act of 1992, FERC applicants are allowed to use a third party contractor to prepare an EIS or environmental assessment. 16 U.S.C. § 797d (1994). The applicant must select the third party contractor from a list of contractors deemed qualified by FERC. *Id*. Applicants may submit draft NEPA documents prior to filing the licensing application.

To facilitate the NEPA process, FERC requires license applicants to prepare an Exhibit E Environmental Rep Tort. *See infra* § 2.3(3)(B). Part of the Exhibit E report must identify and assess the impacts of a proposed project on species listed pursuant to the Endangered Species Act (ESA). *See* 18 C.F.R. §§ 4.41(f)(3)(i), 4.51(f)(3)(i), 4.61(d)(2)(i); *see also id*. § 4.34(d). For a discussion of FERC's ESA responsibilities, see *supra* § 2.3(2)(A).

[107] 42 U.S.C. §§ 4332(2)(C)(i)-(v). The EIS must also examine the short-term use of the environment in relation to the maintenance of long-term productivity, and any irreversible and irretrievable commitments of resources. *Id.*

The NEPA process has been codified in regulations promulgated by the Council on Environmental Quality (CEQ).[108] Under these regulations, FERC must first determine whether an EIS is necessary for a proposed action.[109] FERC must determine whether the proposed action normally requires an EIS using its own regulations .[110] If the activity is one that does not normally require an EIS, FERC must prepare an environmental assessment (EA).[111]

An EA is a "concise public document" which determines on a case by case basis if an EIS is necessary.[112] After completion of an EA, FERC issues a finding of no significant impact (FONSI) if it determines that no EIS is required.[113] Otherwise, FERC must initiate the EIS process.[114]

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[108] CEQ's NEPA regulations can be found at 40 C.F.R. pt. 1500. The CEQ was created by NEPA. *See* 42 U.S.C. §§ 4341 to 4347. CEQ regulations are entitled to substantial deference regarding NEPA's requirements, Andrus v. Sierra Club, 442 U.S. 347, 358 (1979), and are binding on all federal agencies. 40 C.F.R. § 1500.3 (declaring that 40 C.F.R. pts. 1500 to 1508

(continued)

are binding on federal agencies). In addition, federal agencies must promulgate their own NEPA regulations to supplement the CEQ regulations. 40 C.F.R. § 1507.3(a). *See* 18 C.F.R. pt. 380 for FERC's NEPA regulations.

[109] *See* 40 C.F.R. § 1501.4.

[110] *Id*. § 1501.4(a). FERC regulations "normally" require an EIS for unconstructed hydro projects. 18 C.F.R. § 380.6(a)(4).

Certain proposed actions deemed "categorical exclusions" are exempt from the NEPA documentation process; such actions require neither an EA nor an EIS. *Id*. §§ 1508.4, 1501.4(a)(2). CEQ defines categorical exclusion as "a category of actions which do not individually or cumulatively have a significant effect on the human environment and which have been found to have no such effect in procedures adopted by a Federal agency in implementation of these regulations." 40 C.F.R. § 1508.4. FERC must specify the criteria for any categorical exclusions in its regulations. *Id*. § 1507.3(b)(1), (2). Examples of FERC categorical exclusions include the issuance of preliminary permits and exemptions for small conduit projects. 18 C.F.R. §§ 380.4(a)(9), (14).

[111] 40 C.F.R. § 1501.4(b). FERC regulations "normally" require only an EA for (1) projects at existing dams, (2) relicensing, and (3) exemptions for small hydropower projects. 18 C.F.R. §§ 380.5(b)(6)-(10).

[112] 40 C.F.R. § 1508.9. An EA must provide "sufficient evidence and analysis" to determine if an EIS is necessary. *Id*. § 1508.9(a)(1). An EA may also be use to aid in FERC's compliance with NEPA when no EIS is required. *Id*. § 1508.9(a)(2). The FPA allows FERC, at the request of the applicant, to hire third parties to complete the EA or EIS. 16 U.S.C. §§ 797d(a), (b).

[113] 40 C.F.R. § 1501.4(e). A FONSI must include the EA (or a summary of it) and any other environmental documents related to the EA. *Id*. § 1508.13.

[114] 40 C.F.R. 1501.4(d).

The first stage of the EIS process involves "scoping."[115] FERC must ensure through the scoping process that the EIS adequately considers the environmental impacts of the proposed action.[116] An EIS is prepared in two stages—a draft EIS (DEIS), followed by a final EIS (FEIS)—which may be supplemented as well.[117] Upon completing a DEIS, FERC must obtain the comments of federal agencies with jurisdiction or special expertise concerning the environmental impacts involved.[118] An FEIS must respond to the comments,[119] and is the document relied on by FERC in making its final decision.[120] FERC's final decision is issued in a record of decision (ROD).[121]

(B) FERC Environmental Consultation Procedures

The FERC licensing process must comply with the National Environmental Policy Act.[122] However, FERC's NEPA compliance begins only after a three-stage environmental consultation process completed prior to the filing of a

[115] Scoping is an "early and open process" to (1) determine the scope of issues to be addressed and (2) identify the significant issues related to the proposed action. 40 C.F.R. § 1501.7. FERC must invite affected (1) federal, state, and local agencies, (2) Indian tribes, and (3) other interested persons to participate in the scoping process. *Id*. § 1501.7(a)(1).

[116] FERC must examine three types of actions (connected, cumulative, and similar), three types of alternatives (no action, other reasonable courses of action, and mitigation measures), and three types of impacts (direct, indirect, and cumulative) to determine the scope of the EIS. 40 C.F.R. § 1508.25(a)-(c).

[117] 40 C.F.R. § 1502.9. *See id*. § 1502.9(c) for circumstances which require FERC to supplement an EIS.

[118] 40 C.F.R. § 1503.1(a)(1). FERC must also request the comments of appropriate state and local agencies, Indian tribes, the public, and any agency that has requested it be notified of actions similar to that proposed. *Id*. § 1503.1(b).

[119] 40 C.F.R. § 1502.9(b).

[120] CEQ's regulations outline the procedures FERC must follow in its decisionmaking to comply with NEPA. 40 C.F.R. § 1505.1.

[121] 40 C.F.R. § 1505.2. Generally, FERC's decision document (ROD) takes the form of a Commission Order. Council on Environmental Quality NEPA regulations require that a ROD or its functional equivalent (in the case of FERC the Commission Order) must contain certain findings: (1) the decision itself; (2) all the alternatives considered (specifying the alternatives which were considered to be "environmentally preferable"); (3) the factors balanced by the agency in making its decision; and (4) whether "all practicable means to avoid or minimize environmental harm from the alternative selected have been adopted, and if not, why they were not." *Id*. §§ 1505.2(a)-(c). A monitoring and enforcement program for mitigation of the environmental impacts of the decision (if applicable) must also be adopted in the ROD. *Id*. § 1505.2(c). FERC may also take further future actions to ensure that its decision is implemented. *Id*. § 1505.3.

[122] 42 U.S.C. §§ 4321 to 4370d (1994). *See supra* § 2.3(3)(A) for more on the NEPA process. FERC's NEPA regulations can be found at 18 C.F.R. pt. 380. FERC amended its NEPA regulations in 1991. *See* Blumm, *supra* note 1, at 413-14.

FERC license application.[123] The first stage requires that applicants notify federal, state, and tribal resource agencies of their plans.[124] The second stage requires the applicant to respond to federal, state, and tribal input by preparing any recommended studies and responding to comments and recommendations.[125] The third stage of the process is the filing of the license application, a copy of which must be provided to every consulting federal or state agency or tribe.[126] Also, each FERC license applicant must prepare an "Exhibit E Environmental Report" for their project to help facilitate the NEPA process. Exhibit E reports are based in part on the required three-stage consultation and include reports on such environmental concerns as water use, fish and wildlife resources, recreational resources, and land use.[127]

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[123] FERC's regulations for the three-stage early consultation process are located at 18 C.F.R. § 4.38. *See* Blumm, *supra* note 1, at 414-16 for a detailed examination of the three-stage consultation process.

[124] 18 C.F.R. § 4.38(b)(1) (listing the detailed information that the license applicant must provide to the agencies and tribes). Within 60 days of the transmission of the information, the applicant must meet with the agencies and tribes (and must also invite the public) and explain the proposal and any potential environmental impacts. *Id*. §§ 4.38(b)(2)-(3). Within 60 days of this meeting, the agencies and tribes must provide the applicant with written comments and any studies deemed by the agencies and tribes as necessary to evaluate the proposed project. *Id*. § 4.38(b)(4).

[125] 18 C.F.R. § 4.38(c).

[126] 18 C.F.R. §§ 4.38(d)(1)-(2).

[127] 18 C.F.R. §§ 4.40(a), 4.41(f) (requiring an Exhibit E report for the license of any major unconstructed project and the license of a "major modified project" with capacity of more than 5 megawatts), 4.50(a), 4.51(f), (requiring an Exhibit E report, save for a few exceptions, for the license of a major project at an existing dam that is proposed to have a capacity of more than 5 megawatts), 4.60(a), 4.61(d) (requiring an Exhibit E report for the license of: (1) minor water power projects, (2) any major project at an existing dam that has a capacity of 5 megawatts or less, and (3) any major unconstructed project or major modified project with a capacity of 5 megawatts or less). The contents of each of the three types of Exhibit E reports vary.

Section 4.41(f) Exhibit E reports must contain a general description of the locale of the project; an "environment assessment" of alternative locations, designs, and energy sources; a literature list; and eight reports on: (1) water use and quality; (2) fish, wildlife, and botanical resources; (3) historic and archaeological resources; (4) socio-economic impacts; (5) geological and soil resources; (6) recreational resources; (7) aesthetic resources; and (8) land use. *Id*. §§ 4.41(f)(1)-(11).

Section 4.51(f) Exhibit E reports are similar to § 4.41(f) Exhibit E reports, but do not require the "environment assessment" of alternatives nor the reports on socio-economic impacts and geological and soil resources, and also combine the aesthetics and land use reports into a single report. *Id*. §§ 4.51(f)(1)-(7).

Section 4.61(d) Exhibit E reports vary according to the type of project to be licensed. Major unconstructed and major modified projects with a capacity of more than 1.5 megawatts but less than 5 megawatts are subject to the requirements of § 4.41(f). *Id*. § 4.61(d)(1). Minor projects and major projects at existing dams with a capacity of 5 megawatts or less must prepare an Exhibit E report that contains descriptions of: (1) the environmental setting of the project, (2) the environmental impacts from proposed construction or development and the proposed operation of the project, and (3) the steps taken by the

(4) Land Management

FERC has no direct federal land management responsibilities. However, FERC may issue licenses in federal land reservations so long as FERC (1) includes in the license any conditions deemed necessary by the federal land management agency administering the reservation, and (2) finds that the licensed project will not conflict with the reservation's purpose.[128] In addition, persons receiving post-1992 FERC licenses or exemptions for projects located on non-reserved federal lands must obtain a right-of-way permit pursuant to both the FPA[129] and the Federal Land Management and Policy Act (FLPMA).[130] Further, the FPA grants FERC licensees the authority to condemn lands necessary to construct, maintain, or operate project structures.[131]

applicant in consulting with federal, state, and local agencies with "expertise in environmental matters." *Id*. §§ 4.61(d)(2)(i)-(iii).

[128] 16 U.S.C. § 797(e). Conditions issued by the land management agencies apply to the relicensing process as well. *See e.g.*, Mega Renewables, 44 F.E.R.C ¶ 61,395 (1988); City of Pasadena, 46 F.E.R.C. ¶ 61,004 (1989). For a more in-depth discussion of FERC's authority to license projects located on federal reservations, see *supra* § 2.3(2)(B).

[129] 16 U.S.C. § 818.

[130] 43 U.S.C. § 1761(a)(4), (d) (1994).

[131] 16 U.S.C. § 814. FERC licensees are liable for damages caused by the construction, maintenance, or operation of project works. *Id*. § 803(c).

2.4 The Bonneville Power Administration

The Bonneville Power Administration (BPA), within the Department of Energy,[1] is responsible for marketing and distributing power produced from federal hydroelectric projects on the Columbia River and its tributaries. This responsibility includes operating the power transmission and distribution system, setting power rates, selling power to customers in the Northwest and outside the region, and acquiring additional power generation resources for future needs. BPA must also encourage energy efficiency and conservation efforts, and protect and enhance fish and wildlife populations affected by the operation of the Federal Columbia River Power System (the FCRPS).[2]

(1) Water Management

(A) Marketing Hydropower Generated from the Federal Columbia River Power System

BPA markets and distributes power produced from federal dams in the Columbia River Basin. The Bonneville Project Act authorizes BPA to market power, construct transmission lines, and set power rates.[3] The Federal Columbia River Transmission Act[4] expressly authorizes BPA to wheel, or transmit, power for others on BPA's existing power grid.[5] The Columbia River Treaty with Canada[6] also guides BPA's power marketing decisions,

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[1] BPA was within the Department of the Interior until 1977, when it came under the control of the newly created Department of Energy. *See* Department of Energy Authorization Act, 42 U.S.C. § 7152 (1994).

[2] The FCRPS consists of 14 federally owned dams on the mainstem Columbia and Snake Rivers. *See* U.S. ARMY CORPS OF ENGINEERS, NORTH PACIFIC DIV. ET AL., COLUMBIA RIVER SYSTEM OPERATION REVIEW: FINAL ENVIRONMENTAL IMPACT STATEMENT, SUMMARY 2, 46 (Nov. 1995) [hereinafter SOR SUMMARY] (12 operated by the Corps, two by the Bureau). BPA markets the power from all of these federal dams. *See id.* In addition, numerous non-federal dams are located in the Basin, and are licensed by FERC. *See supra* § 2.3 for more on FERC's regulatory and licensing responsibilities over non-federal dams.

[3] 16 U.S.C. §§ 832 to 832l (1994). BPA was also authorized to market power at Grand Coulee Dam by executive order. Exec. Order No. 8526, 3 C.F.R. 704 (1938-1943 Comp.), *amended by* Exec. Order No. 12038, 3 C.F.R. 136 (1978 Comp.).

[4] 16 U.S.C. §§ 837g to 838h (1994).

[5] BPA must operate, maintain, and improve the federal power transmission system in the Basin to: (1) transmit power from either federal or non-federal power generating units, (2) provide service to BPA customers, and (3) provide interregional transmission facilities. 16 U.S.C. § 838b. BPA also constructed transmission lines to allow power exchanges with California utilities under the Act. *Id.*

[6] Treaty Between the United States of America and Canada Relating to Cooperative Development of the Water Resources of the Columbia River Basin, Sept. 16, 1964, 15 U.S.T. 1555. The treaty was originally signed in 1961, but was not put into force until 1964.

requiring operating plans for hydroelectric projects covered by the treaty.[7] However, the United States Army Corps of Engineers (Corps) and the Bureau of Reclamation (Bureau) remain the primary operators of FCRPS dams.[8]

The Corps, Bureau, and BPA coordinate the operation of the FCRPS under the Pacific Northwest Coordination Agreement (PNCA).[9] The PNCA provides for the exchange of several types of power among PNCA participants[10] to facilitate integrated coordination of the FCRPS and nonfederal hydroelectric projects in the Columbia River Basin..[11] An annual operating plan is used to guide monthly operations.[12]

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[7] The four treaty projects are Libby, Duncan, Mica, and Keenleyside Dams. *Id*. at ii (Libby is the only dam located in the United States). For a detailed examination of the Columbia River Treaty and the operating plans required by it, see Michael C. Blumm, *Hydropower vs. Salmon: The Struggle of the Pacific Northwest's Anadromous Fish Resources for a Peaceful Coexistence with the Federal Columbia River Power System*, 11 ENVTL. L. 211, 243-52 (1981).

[8] *See* 16 U.S.C. § 832. *See also* 33 C.F.R. § 209.141(e) (1996). The Corps is responsible for operating the projects and providing cost and availability information to the power marketing agencies. *Id*. But "[m]arketing the power declared to be excess to the needs of the projects and recovering Federal investment are the responsibilities of the power marketing agencies." *Id*.

[9] Bonneville Power Admin., Agreement for Coordination of Operations Among Power Systems of the Pacific Northwest, Contract No. 14-02-4822 (1964). The PNCA will expire on June 30, 2003. *Id*. § 1(a). For more discussion regarding the PNCA, *see* Blumm, *supra* note 7, at 245-46, 249-52 (noting that the PNCA was "inspired" by the Columbia River Treaty); BONNEVILLE POWER ADMIN., U.S. DEP'T OF ENERGY ET AL., THE COLUMBIA RIVER SYSTEM: THE INSIDE STORY 22 (Sept. 1991) [hereinafter BONNEVILLE POWER ADMIN.].

[10] The members of the PNCA are BPA, the Corps, the Bureau, 14 public and private utilities, and one private company. BONNEVILLE POWER ADMIN., supra note 9, at 22 (private utilities: Portland General Electric, Pacific Power & Light, Puget Sound Power & Light, Washington Water Power, and Montana power; municipal utilities: Seattle City Light, Tacoma City Light, and Eugene Water & Electric Board; public utility districts (PUDs): Grant County PUD, Chelan County PUD, Douglas County PUD, Pend Oreille County PUD, Snohomish County PUD, and Cowlitz County PUD; and Colockum Transmission Company).

[11] *See* Blumm, *supra* note 7, at 245 (citing BONNEVILLE POWER ADMIN., DRAFT ENVIRONMENTAL IMPACT STATEMENT, THE ROLE OF THE BONNEVILLE POWER ADMINISTRATION IN THE PACIFIC NORTHWEST POWER SUPPLY SYSTEM, INCLUDING ITS PARTICIPATION IN THE HYDRO-THERMAL POWER PROGRAM, app. A, at II-30 (July 22, 1977) and U.S. DEP'T OF ENERGY, REVISED DRAFT ENVIRONMENTAL IMPACT STATEMENT, THE ROLE OF THE BONNEVILLE POWER ADMINISTRATION IN THE PACIFIC NORTHWEST POWER SUPPLY SYSTEM, at IV-13 to IV-14 (1980) [hereinafter 1980 REVISED DEIS]).

[12] *See* 1980 REVISED DEIS, *supra* note 11, at II-14.

BPA must give preference to Pacific Northwest residents for power sales[13] from Columbia River Basin hydroelectric projects.[14] If energy surplus to the needs in the Northwest is available, BPA may then expand its sales to outside the region.[15]

BPA's rates for power sales must recover the electric power production and transmission costs, including the amortization of the federal investment in the FCRPS (and other production and transmission facilities) over a reasonable period.[16] BPA's rates are designed to (1) encourage a diversified use of electricity at the lowest possible cost to consumers, based on sound business principles, and (2) provide revenues to pay principal, premiums, discounts, and expenses connected with issued bonds.[17] Rates must also reflect BPA's total system costs, including fish and wildlife costs, and equitably allocate costs of the transmission system between federal and non-federal power interests utilizing the system.[18] BPA's rates become effective only upon approval by FERC, which conditions rate approval on assurances that the rates will be sufficient to meet BPA's statutory responsibilities.[19]

Under the Northwest Power Act of 1980 (the NPA),[20] BPA must act consistent with a regional electric power and conservation plan (power

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[13] BPA splits power sales into "firm" and "nonfirm" sales. *See* BONNEVILLE POWER ADMIN., *supra* note 9, at 56. Firm power sales are long-term commitments which guarantee that BPA will meet a customer's requirements for a certain period. *See id.* (over 120 public-owned utilities—who get preference for federal hydropower sales--have long-term firm power sales contracts with BPA; firm power is also sold directly to some of the 15 (as of 1991) direct service industries (DSIs) and some federal agencies). Firm energy is available even if the Basin's lowest ever streamflows occur. *Id.* at 50. Nonfirm power sales have no guarantee of "continuous availability, and delivery can be terminated on very short notice." *Id.* at 56 (DSIs have "first call" on nonfirm energy, the remainder is sold to utilities, and preference applies to nonfirm power sales). Nonfirm energy can be produced when streamflows in the Basin are "better than worst case, which is usually what happens." *Id.* at 50 (also referred to as "secondary energy").

[14] 16 U.S.C. § 837a.

[15] 16 U.S.C. § 837a.

[16] 16 U.S.C. §839e(a)(1).

[17] 16 U.S.C. § 838g.

[18] 16 U.S.C. § 838g.

[19] 16 U.S.C. § 839e(a)(2).

[20] Pacific Northwest Electric Power Planning and Conservation Act, 16 U.S.C. §§ 839 to 839h (1994).

plan)[21] promulgated by the Northwest Power Planning Council.[22] The power plan guides BPA's acquisition of energy resources,[23] including the development of an energy conservation and renewable resource program.[24] The power plan must give priority to "cost-effective" resources.[25] In addition to cost-effectiveness, the NPA further directs the power plan to give priority to "conservation"[26] first, "renewable resources"[27] second, "generating resources"[28] third, and "all other resources" fourth.[29] There are some

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[21] NORTHWEST POWER PLANNING COUNCIL, 1991 NORTHWEST CONSERVATION AND ELECTRIC POWER PLAN (1991). The NPA required the Council to promulgate the power plan within two years of the establishment of the Council. 16 U.S.C. § 839b(d)(1). The Council may amend the power plan "from time to time," but must "review" the power plan at least every five years. *Id*.

[22] *See infra* §§ 2.4(2)(B), 3.1 for more on the Council's activities and responsibilities in the basin.

[23] The NPA defines a "resource" as electric power or the "actual or planned load reduction resulting from direct application of a renewable energy resource." 16 U.S.C. § 839a(19).

[24] The energy conservation and renewable resource acquisition requirements for BPA are located at 16 U.S.C. § 839d.

[25] 16 U.S.C. § 839b(e)(1). A cost-effective resource must be "forecast to" (1) be reliable and available within the time it is needed and (2) meet or reduce the electric power demand at an estimated incremental "system cost" no greater than that of the least costly alternative resource that is similarly available and reliable. *Id*. § 839a(4)(A); *see also* Michael C. Blumm & Brad L. Johnson, *Promising a Process for Parity: The Pacific Northwest Electric Power Planning and Conservation Act and Anadromous Fish Protection*, 11 ENVTL. L. 497, 512 n. 66 (1981). "System cost" is defined as an "estimate of all direct costs" of a resource "over its effective life" (including distribution and transmission costs, waste disposal costs, end-of-cycle costs, fuel costs, and certain "quantifiable" environmental costs). 16 U.S.C. § 839a(4)(B).

[26] "Conservation" means "any reduction in electric power consumption as a result of increases in the efficiency of energy use, production, or distribution." 16 U.S.C. § 839a(3).

[27] "Renewable resources" are resources which: (1) utilize solar, wind, hydro, geothermal biomass, or "similar sources of energy" and (2) are either used for electric power generation or will reduce the electric power requirements of a consumer. 16 U.S.C. § 839a(16).

[28] These are generating resources that either utilize waste heat or generate resources of high fuel conversion efficiency. 16 U.S.C. 839b(e)(1).

[29] 16 U.S.C. § 839b(e)(1). The NPA sets out a general scheme that requires the Council, in promulgating the power plan, to give "due consideration" to: (1) environmental quality; (2) compatibility with the existing regional power system; (3) protection, mitigation, and enhancement of fish and wildlife and related spawning grounds and habitat (including sufficient fiver flows to aid in migration); and (4) other criteria set forth in the power plan. *Id*. § 839b(e)(2).

The NPA also enunciated certain contents of the power plan, to be used to "accomplish" the aforementioned priorities: (1) an energy conservation program, (2) recommendations for research and development, (3) a methodology for identifying "quantifiable environmental costs and benefits," (4) a demand forecast of at least 20 years, (5) an analysis of reserve and reliability requirements, (6) the Council's Columbia River Basin Fish and Wildlife Program (created under § 839b(h)), and (7) a methodology for calculating surcharges. *Id*. §§ 839b(e)(3)(A)-(G).

exceptions to the statutory directive that BPA must act consistently with the power plan.[30]

(2) Fish and Wildlife Protection

(A) The Endangered Species Act

The Endangered Species Act (the ESA)[31] protects species listed as either endangered or threatened[32] and imposes substantive duties on BPA. BPA must ensure that its activities, including power sales, are not likely to (1) jeopardize the continued existence of listed species or (2) adversely modify the critical habitat of such species.[33] Any proposed action that is likely to jeopardize a listed species or adversely affect its critical habitat requires BPA to consult with the relevant federal consulting agency, either the United States Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service (NMFS).[34]

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[30] 16 U.S.C. § 839b(d)(2). BPA is required to acquire its resources consistent with the power plan; however, this consistency determination is made by BPA itself. *Id*. § 839d(b)(1). Additionally, BPA may acquire other-than-major resources that are inconsistent with the power plan, so long as BPA determines that the acquisition is consistent with the priority requirements, *id*. § 839b(e)(1), and general scheme, *id*. § 839b(e)(2), outlined by the NPA. *Id*. § 839d(b)(2). BPA has the authority to acquire major resources that are inconsistent with the power plan if (1) BPA determines that the resource is needed to meet BPA's obligations under the NPA and (2) acquisition of the particular resource is authorized subsequently by an act of Congress. *Id*. § 839d(c)(3) (inconsistency determination can be made either by BPA or the Council).

[31] 16 U.S.C. §§ 1531 to 1544 (1994).

[32] The Secretaries of Interior and Commerce make listing determinations. 16 U.S.C. § 1533(a)(1); *see also* 50 C.F.R. pt. 424 (1995). Interested persons may petition the Secretary to list a species. 16 U.S.C. § 1533(b)(3)(A); *see also* 50 C.F.R. § 424.14.

[33] 16 U.S.C. § 1536(a)(2). The Secretaries of Interior and Commerce must, "to the maximum extent prudent and determinable," designate critical habitat concurrent with the listing of a species. *Id*. § 1533(a)(3)(A); *see also* 50 C.F.R. § 424.12 (criteria for designating critical habitat). BPA also has an affirmative obligation under the ESA to take actions to conserve listed species. 16 U.S.C. § 1536(a)(1).

[34] 16 U.S.C. § 1536(a)(2). USFWS (Department of the Interior)(non-marine species) and NMFS (Department of Commerce)(marine species) are the two federal agencies which share responsibility for administering the ESA. 50 C.F.R. § 402.01(b). *See infra* §§ 2.8(2)(A) (USFWS), 2.7(2)(A) (NMFS) for a discussion of the ESA responsibilities of these "consulting agencies."

Initially, BPA must inquire whether a listed or proposed[35] species "may be present in the area" of BPA's proposed activity.[36] If the consulting agency finds that a listed species is present in the area,[37] BPA must prepare a biological assessment (BA).[38] For a proposed species, BPA need only "confer" with the consulting agency if the authorized activity is likely to jeopardize the continued existence of any proposed species or result in the destruction or adverse modification of proposed critical habitat.[39] If the BA shows that BPA's proposed activity is likely to affect the continued existence of the listed species or adversely affect its critical habitat, formal consultation is required.[40]

Formal consultation results in a biological opinion (BiOp) issued by the consulting fishery agency.[41] If the consulting agency concludes that BPA's

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[35] A "proposed species" is one for which a final listing determination is pending. 50 C.F.R. § 402.02.

[36] 16 U.S.C. § 1536(c)(1); *see also* 50 C.F.R. § 402.12. The BPA may also initiate "early consultation" with a consulting agency if a prospective applicant "has reason to believe that the prospective action may affect listed species or critical habitat" and requests that the Bureau enter into early consultation. 50 C.F.R. § 402.11. Prior to the initiation of early consultation the prospective applicant must certify to BPA that "(1) it has a definite proposal outlining the action and its effects and (2) it intends to implement its proposal, if authorized. *Id*. § 402.11(b). The procedures and responsibilities for early consultation are similar to those required for formal consultation except that references to the "applicant" are treated as "prospective applicant" and a "preliminary biological opinion" not a biological opinion is issued by the consulting agency. *Id*. § 402.11(d). For a discussion of the formal consultation requirement see *infra* notes 40-43 and accompanying text.

[37] The consulting agency must use "the best scientific and commercial data available" in making this determination. 16 U.S.C. § 1536(c)(1).

[38] 16 U.S.C. § 1536(c)(1). The contents of the BA are "at the discretion of" BPA, depending on the nature of the proposed action. 50 C.F.R. § 402.12(f). However, the BA must be based on "the best available scientific and commercial data available." 16 U.S.C. § 1536(a)(2). The BA must be completed within 180 days or a mutually agreed upon date. *Id*. § 1536(c)(1).

[39] 16 U.S.C. § 1536(a)(4); *see also* 50 C.F.R. § 402.10.

[40] 50 C.F.R. § 402.12(k). Formal consultation regulations for USFWS and NMFS are at 50 C.F.R. § 402.14. BPA may not "make any irreversible or irretrievable commitment of resources" once formal consultation has begun. 16 U.S.C. § 1536(d); 50 C.F.R. § 402.09.

Action agencies such as the BPA may also engage in "informal consultation" with a consulting agency to determine whether formal consultation is required. 50 C.F.R. § 402.13. Informal consultation includes all discussions and correspondence between the action and consulting agencies. *Id*. § 402.13(a). The consulting agency may suggest modifications to the proposed action that could be implemented to avoid adverse effects to the listed species or corresponding critical habitat. *Id*. § 402.13(b).

[41] *See* 16 U.S.C. § 1536(b)(3)(A). Content requirements for BiOps are at 50 C.F.R. § 402.14(h). *See also* 50 C.F.R. § 402.14(g) (listing the consulting agencies' responsibilities during formal consultation, including: (1) the evaluation of the effects of the proposed action and cumulative effects on the listed species or critical habitat, *id*. § 402.14(g)(3), and (2) the use of "the best scientific and commercial data available." *Id*. § 402.14(g)(8)).

proposed action is not likely to jeopardize the species, the agency issues a "no jeopardy BiOp."[42] Conversely, if the consulting agency cannot make this determination, it must issue a "jeopardy BiOp," which may include "reasonable and prudent alternatives" to the proposed action that will avoid jeopardy.[43]

If BPA relies on and follows the measures specified in the BiOp, it has probably fulfilled its ESA obligations.[44] However, the Ninth Circuit has held that an agency's reliance on a BiOp to satisfy its ESA obligations cannot be arbitrary and capricious.[45] The Ninth Circuit has also ruled that action agencies such as BPA are not bound by all the details of a BiOp so long as they take alternative, reasonably adequate measures to ensure the continued existence of listed species.[46]

In 1995, NMFS issued a "jeopardy BiOp" concerning the operation of the FCRPS and its effect on the listed Snake River salmon.[47] The BiOp contained "reasonable and prudent alternatives" to the proposed operation of the FCRPS during the years 1994 to 1998, calling for BPA to implement

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[42] 50 C.F.R. § 402.14(h)(3).

[43] 50 C.F.R. § 402.14(h)(3). The consulting agency can also issue a jeopardy BiOp with no reasonable and prudent alternatives. *See id.* (directing that a jeopardy BiOp "shall include reasonable and prudent alternatives, if any"). The BPA may be required to reinitiate formal consultation with the consulting agency when: (1) the BPA retains discretionary control over the action and (2) certain new conditions arise or new information becomes available. 50 C.F.R. §§ 402.16(a)-(d).

[44] Environmental Coalition of Broward County, Inc. v. Meyers, 831 F.2d 984 (11th Cir. 1987). *See also* 50 C.F.R. § 402.15 (responsibilities of the action agency following issuance of a BiOp).

[45] Pyramid Lake Tribe of Indians v. United States Dep't of the Navy, 898 F.2d 1410, 1415 (9th Cir. 1990) (action agencies may not solely rely on BiOps to establish conclusively that they have satisfied their ESA obligations; a decision to rely on a BiOp must be shown to not be arbitrary and capricious).

[46] Tribal Village of Akutan v. Hodel, 854 F.2d 651, 660-61 (9th Cir. 1988). *But see* American Rivers v. National Marine Fisheries Service, No. 96-384, slip op. at 28-29 (D. Or. April 3, 1997) (distinguishing *Village of Akutan* and rejecting plaintiff's claim that any deviation from the reasonable and prudent alternatives provided by NMFS' 1994-1998 Biological Opinion for Federal Columbia River Power System Operations triggers a duty to come up with other mitigative measures).

[47] NATIONAL MARINE FISHERIES SERV., U.S. DEP'T OF COMMERCE, ENDANGERED SPECIES ACT- SECTION 7 CONSULTATION: BIOLOGICAL OPINION: REINITIATION OF CONSULTATION ON 1994-1998 OPERATION OF THE FEDERAL COLUMBIA RIVER POWER SYSTEM AND JUVENILE TRANSPORTATION PROGRAM IN 1995 AND FUTURE YEARS (Mar. 2, 1995) [hereinafter 1995 BIOP]. *See infra* § 2.7(2)(A) for more on the listed Snake River Salmon.

several actions deemed necessary to avoid jeopardizing the continued existence of the listed species.[48]

The ESA also prohibits action agencies such as BPA from "taking" any endangered species.[49] Taking is defined broadly to include harassing or harming species,[50] but incidental take "statements" (similar to permits) that reduce or minimize the take of threatened or endangered species may be issued by the consulting agency.[51]

(B) The Northwest Power Act

The Northwest Power Act of 1980 (the NPA)[52] created the Northwest Power Planning Council (the Council), an interstate compact agency comprised of two members from each of the four states in the Columbia River Basin.[53] The Council is involved in governing both the Basin's federal hydroelectric operations and fish and wildlife resource.

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[48] 1995 BIOP, *supra* note 47, at 91-135 (for all the measures called for in the NMFS BiOp).

[49] The ESA prohibits all persons (including federal agencies) from the "taking" of any endangered fish and wildlife species. 16 U.S.C. § 1538(a)(1). Federal regulations expand this prohibition to threatened species as well. 50 C.F.R. § 17.31(a).

[50] The ESA defines "take" as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in such conduct. 16 U.S.C. § 1532(19). Federal regulations further define "harm" as any act that actually kills or injures wildlife, including "significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering." 50 C.F.R. § 17.3. This regulation was upheld by the Supreme Court. Babbitt v. Sweet Home Chapter, Communities For A Greater Oregon, 115 S. Ct. 2407 (1995). BPA activities that could result in the “taking” of a listed species include authorizing the construction of transmission lines.

[51] An incidental take is a taking that results from, but is not the purpose of, "carrying out an otherwise lawful activity conducted by the Federal agency or applicant." 50 C.F.R. § 402.02. An incidental take requires a statement issued by the consulting agency during formal consultation that sets out the terms and conditions that must be complied with by the federal agency. *Id.* § 402.14(i). Incidental take statements may be included in a BiOp. For example, the 1995 BiOp issued by NMFS concerning the effect of the operation of the FCRPS on listed Snake River salmon contained an incidental take statement. *See* 1995 BIOP, *supra* note 47, at 159.

[52] Pacific Northwest Electric Power Planning and Conservation Act of 1980, 16 U.S.C. §§ 839 to 839h (1994). It is important to note that the NPA does not affect existing BPA contracts. See 16 U.S.C. § 839g(b) (nothing in the NPA “shall alter, diminish, or abridge the rights and obligations of the Administrator or any customer under any contract existing as of December 5, 1980").

[53] 16 U.S.C. § 839b(a)(2). Members from each state are appointed according to the appointment laws of their own state. *Id.* § 839b(a)(2)(B).

The NPA was created "to assure the Pacific Northwest of an adequate, efficient, economical, and reliable power supply."[54] However, this goal is subject to another congressional mandate: that federal dam operators and power marketers "protect, mitigate and enhance the fish and wildlife, including related spawning grounds and habitat, of the Columbia River and its tributaries."[55] The Council, through its Columbia Basin Fish and Wildlife Program (the Program),[56] is the entity responsible for achieving Congress's required fish and wildlife protection and enhancement.[57]

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[54] 16 U.S.C. § 839(2).

[55] 16 U.S.C. § 839(6).

[56] NORTHWEST POWER PLANNING COUNCIL, COLUMBIA RIVER BASIN FISH AND WILDLIFE PROGRAM (Dec. 14, 1994) [hereinafter 1994 PROGRAM]. Congress enunciated strict statutory criteria for the Council's Program. Time deadlines were set for creating and amending the program. 16 U.S.C. § 839b(h)(9) (within one year of the receipt of recommendations). The Council must solicit and evaluate fish and wildlife recommendations from state and federal fishery agencies and Indian tribes. *Id*. § 839b(h)(2). The Council must give "due weight" to these recommendations. *Id*. § 839b(h)(7). The Ninth Circuit has construed this section of the NPA to "require that a high degree of deference be given to fishery managers' interpretations of such provisions and their recommendations for program measures." Northwest Resource Info. Ctr., Inc. v. Northwest Power Planning Council, 35 F.3d 1371, 1388 (9th Cir. 1994), *cert. denied sub nom*. Pacific N.W. Generating Coop. v. Northwest Power Planning Council, 116 S. Ct. 50 (1995). If the Council chooses not to follow a recommendation submitted by the fishery agencies and tribes, the Council must explain its reasons for so doing, in writing and in the program itself. 16 U.S.C. § 839b(h)(7); *see also* Northwest Resource Info. Ctr., 35 F.3d at 1385-86. All program measures must satisfy five statutory criteria: (1) "complement the existing and future activities" of fishery agencies and tribes; (2) be based on the "best available scientific knowledge;" (3) use the alternative (where "equally effective alternative means of achieving the same sound biological objective exist") with the "minimum economic cost;" (4) be consistent with Indian treaty rights; and (5) provide for improved anadromous fish survival by providing river flows "of sufficient quality and quantity" to improve "production, migration, and survival of such fish." 16 U.S.C. §§ 839b(h)(6)(A)-(E). *See also id*. § 839b(h)(8) (listing other considerations for the Council to take into account in developing program measures).

The NPA was amended in 1996, in an appropriations rider sponsored by Senator Slade Gorton (R-Wa.). Energy and Water Development Appropriations Act, Pub. L. No. 104-206, § 504, 110 Stat. 2984, 3005-06 (1996) (amending § 839b(h)(10) of the NPA). The rider requires the Council to make recommendations to BPA concerning funding priority measures implementing the Council's program. *Id*. at 3005-06 (adding new § 839b(h)(10)(D)(iv)). The Council's recommendations must be based on "sound scientific principles; benefit fish and wildlife; and have a clearly defined objective and outcome with provisions for monitoring and evaluation." *Id*. The Council must establish an Independent Scientific Review Panel which will review fish and wildlife projects proposed for BPA funding. *Id*. (adding new §§ 839b(h)(10)(D)(i)-(ii)). The rider requires the Council to "fully consider" the panel's recommendations on priorities for project funding, and if the Council does not adopt the panel's recommendations, to explain its reasons for rejecting the recommendations in writing. *Id*. (adding a new § 839b(h)(10)(D)(vi)).

[57] 16 U.S.C. § 839b(h)(5) (requiring the Council's program to "consist of measures to protect, mitigate, and enhance fish and wildlife affected by the development, operation, and management" of the Columbia River Basin hydrosystem, while assuring the Pacific Northwest an "adequate, efficient[,] economical, and reliable power supply").

BPA has four main responsibilities under the NPA.[58] First, BPA must exercise its responsibilities consistent with the purposes of the NPA "in a manner that provides equitable treatment for such fish and wildlife with the other purposes" for which federal projects are managed and operated.[59] Second, BPA must take the Council's program "into account at each relevant stage of decisionmaking processes to the fullest extent practicable."[60] Third, BPA must use its funds and authorities to protect, mitigate, and enhance fish and wildlife to the extent affected by the FCRPS in "a manner consistent with" the Council's program.[61] Finally, BPA must also fund fish and wildlife measures imposed by federal agencies on non-federal hydropower projects if those costs are not attributable to project operation and construction.[62] However, the enforceability of the Council's program remains unclear.[63]

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[58] 16 U.S.C. § 839b(h). Although the NPA imposes certain duties on BPA, it does not affect existing BPA contracts. *Id.* § 839g(i). BPA must also act consistent with a regional electric power and conservation plan promulgated by the Council. *See supra* § 2.4(1)(A).

[59] 16 U.S.C. § 839b(h)(11)(A)(i).

[60] 16 U.S.C. § 839b(h)(11)(A)(ii).

[61] 16 U.S.C. § 839b(h)(10)(A).

[62] 16 U.S.C. § 839b(h)(11)(A)(ii).

[63] BPA's former general counsel suggested that the "consistency" provision, 16 U.S.C. § 839b(h)(10), does not require BPA to implement the Council's Program. *See Panel Discussion, Colloquium: Who Runs the River?*, 25 ENVTL. L. 417, 422 (1995) (remarks of Harvey Spigal). The Ninth Circuit seems to agree, stating that BPA "must act consistently with the Council's [P]rogram but in the end has final authority to determine its own decisions." Northwest Resource Info. Ctr., Inc. v. National Marine Fisheries Serv., 25 F.3d 872, 874 (9th Cir. 1994). The general counsel for the Council seems to agree as well:

> The Council's authority in the fish and wildlife area is constrained; it can guide, but not command, federal river management. The investment of federal hydropower revenues to help fish and wildlife must be "consistent" with the Council's [P]rogram, but . . . [BPA] actually writes the checks. The Council has no authority over fish and wildlife agencies, land managers, or irrigators. The Council is not toothless, but it cannot command and control.

John M. Volkman & Willis E. McConnaha, *Through a Glass Darkly: Columbia River Salmon, the Endangered Species Act, and Adaptive Management*, 23 ENVTL. L. 1249, 1254 (1993) (citation omitted). *But see* Michael C. Blumm, et. al., *Beyond the Parity Promise: Struggling to Save Columbia Basin Salmon in the 1990s*, 27 ENVTL. L. 21, 64-65 (1997) (arguing that the Council's program is no less enforceable than biological opinions implementing the Endangered Species Act).

The Council's program[64] calls for several measures to increase juvenile salmon survival, including increased flows in the Columbia[65] and Snake[66] Rivers, reservoir drawdowns on the Snake River,[67] improved in-river passage via spill and other measures,[68] reduced predation and competition,[69] and the continued out-of-river transportation (by barge and truck) of juveniles.[70] Other fish and wildlife measures in the Council's program are aimed at (1) improved adult salmon migration,[71] coordinated hatchery and habitat improvements,[72] control of salmon harvest,[73] and protection of resident fish[74] and wildlife.[75]

BPA must fund and perform many of the measures contained in the Council's program.[76] BPA fish and wildlife funds provide more than 200 million dollars per year for mitigation measures including direct funding for projects under the Council's program (100 million); reimbursements to other federal agencies for operation and maintenance costs (35 million); and repayments to the United States Treasury for capital costs (75-85 million). In addition, Bonneville absorbs the costs of dam operations such as water releases for flow augmentation and spills, variously valued at 150, 160, or 183 million

[64] For more on the Council's program, see *infra* §§ 3.1(2)(A), 3.1(4)(A).

[65] 1994 PROGRAM, *supra* note 56, at 5-28 to 5-34 (BPA specifically to aid in securing water for summer migrants).

[66] 1994 PROGRAM, *supra* note 56, at 5-20 to 5-24. In particular, BPA was to share equally (with the Bureau) in the costs of securing water to aid in Snake River flows, *id*. at 5-22, and replace any lost power at Brownlee Dam due to fish and wildlife measures. *Id*. at 5-23.

[67] *Id*. at 5-24 to 5-28.

[68] *Id*. at 5-36 to 5-41.

[69] *Id*. at 5-42 to 5-46.

[70] *Id*. at 5-46 to 5-48.

[71] *Id*. at 6-1 to 6-6.

[72] *Id*. at 7-1 to 7-63.

[73] *Id*. at 8-1 to 8-13.

[74] *Id*. at 10-1 to 10-20.

[75] *Id*. at 11-1 to 11-16.

[76] See 16 U.S.C. § 839b(h)(10(A) (1994) (directing the administrator to use the Bonneville Power Administration fund to "protect, mitigate, and enhance fish and wildlife to the extent affected by the development and operation of any hydroelectric project of the Columbia River and its tributaries in a manner consistent with the [Council's program]"). BPA expenditures pursuant to the Council's program are "in addition to, not in lieu of, other expenditures authorized or required from other entities under other agreements or provisions of law." *Id*.

dollars.[77] Taken together, these are the dominant elements in Columbia River fish and wildlife mitigation funding.

The rising costs of administering the Council's program and the NMFS BiOp (promulgated under the ESA to avoid jeopardizing listed Snake River salmon by operation of the FCRPS) led BPA to ask Congress in 1996 to "cap" its fish and wildlife costs. This resulted in a memorandum of agreement (MOA)[78] which set a fixed amount of $252 million annually through 2001 to cover BPA's fish and wildlife mitigation expenses, plus an unfixed amount to cover the cost of river operations necessary to implement the Endangered Species Act and the Council's program.[79]

(3) Environmental Regulation

(A) The National Environmental Policy Act

The National Environmental Policy Act (NEPA)[80] requires BPA (and any other federal agency) to complete a detailed statement on the environmental impacts of any "major Federal actions significantly affecting the quality of

[77] Letter from John Etchart, Chairman, Northwest Power Planning Council, to Don Young, Chairman, U.S. House Committee on Resources (Mar. 21, 1996) (on file with the Northwest Power Planning Council).

[78] Memorandum of Agreement Among the Department of the Army, the Department of Commerce, the Department of Energy, and the Department of Interior Concerning the Bonneville Power Administration's Financial Commitment for Columbia River Basin Fish and Wildlife Costs (Sept. 16, 1996) [hereinafter Federal MOA].

[79] *Id*. §§ IV(a), V(a). The MOA negotiators estimated that the costs of implementing actions in the NMFS BiOp in an average water year would be $183 million—meaning that with the $252 million in out-of-pocket expenditures, the total cost to BPA in an average water year for fish and wildlife costs would be $435 million. Telephone Interview with Angus Duncan (Sept. 25, 1996) (former Chairman of the Council and its chief negotiator during the MOA negotiations). *See also* Michael C. Blumm et al., *Beyond the Parity Promise: Struggling to Save Columbia Basin Salmon in the Mid-1990s*, 27 Envtl. L. 21, 103 (1997) (section VI.C. of the article discussing the history of BPA's efforts to set limits on its fish and wildlife costs in 1995 and 1996).

The MOA also allows BPA to tap a contingency fund consisting of several hundred million dollars in U.S. Treasury credits, available under limited circumstances. Federal MOA, *supra* note 78. Use of the $325 million contingency fund is limited to circumstances dictated by adverse water conditions, court orders, natural disasters declared by the President, and "fisheries emergencies jointly declared by resolution of the Secretaries of the Interior and Commerce." *Id*. Access to the contingency funds is also limited "in the aggregate" to 15 million per year. *Id*.

[80] 42 U.S.C. §§ 4321 to 4370d (1994).

the human environment."[81] This environmental impact statement (EIS) must examine (1) the environmental impact of the proposed action, (2) any unavoidable adverse environmental effects, and (3) alternatives to the proposed action.[82]

The NEPA process has been codified in regulations promulgated by the Council on Environmental Quality (CEQ).[83] Under these regulations, BPA must first determine whether an EIS is necessary for a proposed action.[84] BPA must determine whether the proposed action normally requires an EIS under its own NEPA regulations .[85] If the activity is one that does not normally require an EIS, BPA must prepare an environmental assessment (EA).[86]

An EA is a "concise public document" which determines on a case by case basis if an EIS is necessary.[87] After completion of an EA, BPA issues a

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[81] 42 U.S.C. § 4332(2)(C). For a discussion of what constitutes a "major federal action," see GEORGE C. COGGINS & ROBERT L. GLICKSMAN, 2 PUBLIC NATURAL RESOURCES LAW §§ 10G.03[2] to 10G.04 (1996). There has been much litigation surrounding what is a "major" action, *see id. §* 10G.04, and what is a "federal" action. *Id*. § 10G.03[2] (the key factor in determining whether an action is "federal" is the "agency's authority to influence significant nonfederal activity. . . . [T]he federal agency must possess actual power to control the nonfederal activity") (quoting Sierra Club v. Hodel, 848 F.2d 1068, 1089 (10th Cir. 1988)); *see also* 40 C.F.R. § 1508.18.

[82] 42 U.S.C. §§ 4332(2)(C)(i)-(v). The EIS must also examine the short-term use of the environment in relation to the maintenance of long-term productivity, and any irreversible and irretrievable commitments of resources. *Id*.

[83] CEQ's NEPA regulations can be found at 40 C.F.R. pt. 1500. The CEQ was created by NEPA. *See* 42 U.S.C. §§ 4341 to 4347. CEQ regulations are entitled to substantial deference regarding NEPA's requirements, Andrus v. Sierra Club, 442 U.S. 347, 358 (1979), and are binding on all federal agencies. 40 C.F.R. § 1500.3 (declaring that 40 C.F.R. pts. 1500 to 1508 are binding on federal agencies). In addition, federal agencies must promulgate their own NEPA regulations to supplement the CEQ regulations. 40 C.F.R. § 1507.3(a). *See* 33 C.F.R. pt. 230 for the Corps' NEPA regulations.

[84] *See* 40 C.F.R. § 1501.4.

[85] *Id*. § 1501.4(a). Certain proposed actions deemed "categorical exclusions" are exempt from the NEPA documentation process; such actions require neither an EA nor an EIS. *Id*. §§ 1508.4, 1501.4(a)(2). CEQ defines categorical exclusion as "a category of actions which do not individually or cumulatively have a significant effect on the human environment and which have been found to have no such effect in procedures adopted by a Federal agency in implementation of these regulations." 40 C.F.R. § 1508.4. The Corps must specify the criteria for any categorical exclusions in its regulations. *Id*. § 1507.3(b)(1), (2).

[86] 40 C.F.R. § 1501.4(b).

[87] 40 C.F.R. § 1508.9. An EA must provide "sufficient evidence and analysis" to determine if an EIS is necessary. *Id*. § 1508.9(a)(1). An EA may also be use to aid in the Corps' compliance with NEPA when no EIS is required. *Id*. § 1508.9(a)(2).

finding of no significant impact (FONSI) if it determines that no EIS is required.[88] Otherwise, BPA must initiate the EIS process.[89]

The first stage of the EIS process involves "scoping."[90] BPA must ensure through the scoping process that the EIS adequately considers the environmental impacts of the proposed action.[91] An EIS is prepared in two stages—a draft EIS (DEIS), followed by a final EIS (FEIS)—which may be supplemented as well.[92] Upon completing a DEIS, BPA must obtain the comments of federal agencies with jurisdiction or special expertise concerning the environmental impacts involved.[93] An FEIS must respond to the comments,[94] and is the document relied on by BPA in making its final decision.[95] BPA's final decision is issued in a record of decision (ROD).[96]

In conjunction with the Corps and the Bureau, BPA issued a FEIS in November of 1995 on the environmental impacts of the operation of the

[88] 40 C.F.R. § 1501.4(e). A FONSI must include the EA (or a summary of it) and any other environmental documents related to the EA. *Id*. § 1508.13.

[89] 40 C.F.R. 1501.4(d).

[90] Scoping is an "early and open process" to (1) determine the scope of issues to be addressed and (2) identify the significant issues related to the proposed action. 40 C.F.R. § 1501.7. The Corps must invite affected (1) federal, state, and local agencies, (2) Indian tribes, and (3) other interested persons to participate in the scoping process. *Id*. § 1501.7(a)(1).

[91] The Corps must examine three types of actions (connected, cumulative, and similar), three types of alternatives (no action, other reasonable courses of action, and mitigation measures), and three types of impacts (direct, indirect, and cumulative) to determine the scope of the EIS. 40 C.F.R. § 1508.25(a)-(c).

[92] 40 C.F.R. § 1502.9. *See id*. § 1502.9(c) for circumstances which require the Corps to supplement an EIS.

[93] 40 C.F.R. § 1503.1(a)(1). The Corps must request the comments of appropriate state and local agencies, Indian tribes, the public, and any agency that has requested it be notified of actions similar to that proposed. *Id*. § 1503.1(b).

[94] 40 C.F.R. § 1502.9(b).

[95] CEQ's regulations outline the procedures the Corps must follow in its decision making to comply with NEPA. 40 C.F.R. § 1505.1.

[96] 40 C.F.R. § 1505.2. A ROD must contain certain findings: (1) the decision itself; (2) all the alternatives considered (specifying the alternatives which were considered to be "environmentally preferable"); (3) the factors balanced by the agency in making its decision; and (4) whether "all practicable means to avoid or minimize environmental harm from the alternative selected have been adopted, and if not, why they were not." *Id*. § 1505.2(a)-(c). A monitoring and enforcement program for mitigation of the environmental impacts of the decision (if applicable) must also be adopted in the ROD. *Id*. § 1505.2(c). The Corps may also take further future actions to ensure that its decision is implemented. *Id*. § 1505.3.

FCRPS, entitled the System Operation Review (SOR).[97] The SOR's preferred alternative—one of thirteen alternatives examined in the SOR[98]—consisted of the measures contained in the 1995 NMFS BiOp on the operation of the FCRPS and its effects on listed Snake River salmon.[99]

BPA must comply with NEPA for several activities, including (1) offers of long-term contracts for power delivery pursuant to the Northwest Power Act,[100] (2) implementation of second phase of long-range cooperative plan to meet forecasted energy needs of the Pacific Northwest,[101] (3) construction of proposed power lines,[102] and (4) entering into contracts to supply interruptible power and to construct a transmission line.[103]

(4) Land Management

(A) Property Management Powers

The Bonneville Project Act authorizes BPA to market power, construct transmission lines, and set power rates. BPA can condemn and acquire property the administrator deems necessary to carry out the purposes of the

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[97] U.S. ARMY CORPS OF ENGINEERS, NORTH PACIFIC DIVISION ET AL., COLUMBIA RIVER SYSTEM OPERATION REVIEW: FINAL ENVIRONMENTAL IMPACT STATEMENT (Nov. 1995) (consisting of 20 technical appendices labeled "A" to "T"). A summary of the SOR is also available. SOR SUMMARY, *supra* note 2. The EIS process for the operation of the FCRPS began in 1990. *Id*. at 2.

[98] The SOR contained seven strategies, encompassing 13 alternatives. SOR SUMMARY, *supra* note 2, at 13. Summaries of the strategies and alternatives can be found at *id*. at 14-38.

[99] *Id*. at 34-37 (the preferred alternative also consisted of the measures contained in the USFWS's 1995 BiOp concerning the operation of the FCRPS and its effect on listed white sturgeon). *See infra* §§ 2.7(2)(A) (NMFS BiOp), 2.8(2)(A) (USFWS BiOp).

[100] Forelaws on Board v. Johnson, 743 F.2d 677, 683 (9th Cir. 1985), *cert. denied*, 478 U.S. 1004 (1986) (holding that 145 contracts of 20-year duration entered into pursuant to the Northwest Power Act constituted "significant federal actions affecting the environment" thereby requiring an EIS).

[101] Natural Resources Defense Council, Inc. v. Munro, 626 F.2d 134, 135 (9th Cir. 1980) (holding that BPA must complete an EIS prior to implementing "phase 2" of its Hydro-Thermal Power Program).

[102] Columbia Basin Land Protection Assoc. v. Schlesinger, 643 F.2d 585, 592-96 (9th Cir. 1981) (upholding adequacy of BPA environmental impact statement for construction of proposed power lines).

[103] Sierra Club et al. v. Hodel, 544 F.2d 1036, 1044 (9th Cir. 1976) (holding that "[b]y entering into a contract to supply the power to the project and to construct the transmission lines to the plant, [BPA] has so federalized the entire project that it has become "major federal action" requiring a federally responsible environmental impact statement").

Act.[104] The act authorizes BPA to acquire lands, easements, rights-of-way, franchises, electric transmission lines, substations, and appurtenant facilities and structures.[105] Alternatively, upon approval by the president of the United States, the administrator of BPA is authorized to dispose of property.[106]

[104] 16 U.S.C. § 832a(c).

[105] *Id*. § 832a(c), (d). The United States will be the owner of all property acquired or condemned by the administrator. *Id*.

[106] *Id*. § 832a(e) ("before the sale, lease, or disposition of real property or transmission lines, as herein provided, the administrator shall secure the approval of the President of the United States").

2.5 The United States Forest Service[1]

The United States Forest Service, within the United States Department of Agriculture, is the federal agency responsible for the management of national forest lands in the Columbia River Basin. Its responsibilities include authorizing and monitoring timber harvest, grazing, mining, recreation, and any other activities that occur on national forest lands. Several statutes govern the Forest Service in fulfilling these responsibilities, including the National Forest Management Act,[2] the Federal Land Policy and Management Act,[3] the Endangered Species Act,[4] and the National Environmental Policy Act.[5]

(1) Water Management

The Forest Service has no direct control over flood control, navigation, or hydropower except as dictated by agency land management responsibilities. However, the Forest Service does, under certain circumstances, have rights to, or management authority over, water resources or activities that affect water resources on national forest lands. First, each national forest has federally reserved rights to a certain amount of water in order to satisfy the primary purpose for which the forest was established. Second, the Forest Service, like any other appropriator, has the ability to apply to the appropriate state agency for a state water right. Third, the Forest Service has used its control over rights-of-way authorization to limit the adverse affects of activities on forest water resources.

(A) Federal Reserved Water Rights for National Forest Lands

As with any other federal reservation, national forests within the Columbia River Basin possess a certain amount of water reserved under federal law.[6]

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[1] Portions of this section were adapted from GEORGE C. COGGINS AND ROBERT L. GLICKSMAN, PUBLIC NATURAL RESOURCES LAW (1996).

[2] 16 U.S.C. §§ 1600 to 1616 (1994).

[3] 43 U.S.C. §§ 1701 to 1784 (1994).

[4] 16 U.S.C. §§ 1531 to 1544 (1994).

[5] 42 U.S.C. §§ 4321 to 4370d (1994).

[6] Arizona v. California, 373 U.S. 546, 601 (1963). Certain wilderness areas and wild and scenic rivers under the management authority of the Forest Service may have additional reserved rights. The nature and extent of such rights are often under dispute. *See* Michael C. Blumm, *Reserved Water Rights*, *in* 4 WATERS AND WATER RIGHTS 244-46 (Robert E. Beck ed., 1996). A 1979 Solicitor's opinion, which was later renounced, concluded that the Wilderness Act of 1964 reserved water rights necessary to carry out the preservation-oriented purposes of the Act, including those required for recreation. 86 I.D. 553, 608-09 (1979), rev'd by Solicitor's

Federal reserved water rights are unique because they are federally created, require no diversion, and are granted priority dates equal to the date of the reservation.[7] However, the amount of water actually reserved is limited to the quantity needed to fulfill the primary purposes of the reservation.[8] Under the 1897 Organic Act, each national forest has a sufficient amount of federal reserved water to (1) conserve water flows and (2) furnish a continuous supply of timber for the people.[9] The Forest Service has had little success asserting rights to instream flows for the watershed conservation purposes established by the Organic Act.[10]

The McCarran Amendment (Amendment)[11] waived federal sovereign immunity, allowing states to include federal reserved rights in general

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Opinion on Federal Reserved Water Rights in Wilderness Areas, 96 I.D. 211 (Supp. III 1988). The Departments of Interior and Agriculture later suspended the 1988 Solicitor's Opinion (holding that a wilderness designation did not included reserved rights) in order to review the 1988 policy and allow for public comment. 58 Fed. Reg. 68,629 (Dec. 28, 1993).

The Wild and Scenic Rivers Act (WSRA) reserves water rights for designated rivers "in quantities . . . necessary to accomplish these purposes." 16 U.S.C. § 1284(c) (1994) ("purposes" referring to the reasons why a particular river is designated as wild, scenic, or recreational under the WSRA). The Interior Department intreprets the above statutory provision as reserving a sufficient amount of water to protect the aesthetic, recreational, scientific, biotic, or historic features that led to the river's inclusion in the system. 86 I.D. 553, 608-09 (1979).

[7] *See* Blumm, *supra* note 6, at 213-15. Because the Organic Act of 1897 was enacted at such an early date, federal reserved water rights established pursuant to the Act take priority over most rights established according to state law procedures.

[8] United States v. New Mexico, 438 U.S. 696, 702 (1978). *See also* Cappaert v. United States, 426 U.S. 128, 141 (1976) (the quantity of water is "that amount necessary to fulfill the purpose of the reservation, no more").

[9] United States v. New Mexico, 438 U.S. at 707-8. The Multiple Use Sustained Yield Act of 1960 (MUSYA) broadened the purposes for which national forests were to be managed, but such uses have been deemed secondary, with no reserved water rights attached thereto. *Id*. at 714-15.

[10] United States v. Denver, 656 P.2d 1, 22 (Colo. 1982) (recognizing that timber production and watershed protection are purposes enumerated under the original Organic Act of 1897, but finding that the Forest Service had failed to establish instream flows were necessary for these purposes). *But see* United States v. Jesse, 744 P.2d 491 (Colo. 1987). The Forest Service argued that instream flows are necessary for "fluvial geomorphology" purposes; that "strong, recurring instream water flows are necessary to maintain efficient stream channels and to secure favorable conditions of water flows . . ." *Id*. at 498. The Colorado Supreme Court did not rule on the sufficiency of the claim, but did allow the Forest Service the chance to show that instream flows are necessary to fulfill the original purposes of the Organic Act. *Id*. at 503. A Colorado water court later denied Forest Service claims for reserved rights for channel maintenance instream flows on the Arapahoe, Pike, Roosevelt, and San Isabel National Forests. In the Matter of Reserved Water Rights in the Platte River, No. W-8439-76 (Colo. Water Div. 1, Feb. 12, 1993).

[11] 43 U.S.C. § 666 (1994).

stream adjudications determining the rights to water from a river system or other source.[12] The Amendment applies only to general stream adjudications which are comprehensive procedures established to join all possible claimants within a watershed, not claims initiated against the United States by individual appropriators.[13]

A number of general stream adjudications are currently moving forward in the Columbia River Basin including the Snake River Basin in Idaho, the Yakima River Basin in Washington, and the entire state of Montana.[14] The Forest Service has made, and continues to make, claims for both consumptive and instream uses pursuant to reserved rights in McCarran Amendment proceedings throughout the Columbia River Basin.[15]

(B) Forest Service Water Rights Claimed Under State Law

The Forest Service also has water rights obtained pursuant to state law in the Columbia River Basin. The Forest Service must seek flows for secondary reservation purposes, such as fish and wildlife, in accordance with state

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[12] *Id*. § 666(a). While the McCarran Amendment contains no explicit reference to "reserved" rights, the Supreme Court held that such rights are governed by the Amendment. United States v. Dist. Ct. In & For Cty. of Eagle, 401 U.S. 520, 524 (1971). The Amendment may also require the federal government to assert reserved rights in state court when there is a general stream adjudication in order to preserve the priority of such rights. *See* United States v. Bell, 724 P.2d 631, 643 (Colo. 1986) (holding that "[t]he doctrine of res judicata bars the United States from re-opening reserved water rights adjudications even where prior claims have not been adjudicated or the United States erroneously has omitted certain claims").

[13] The Amendment applies only to general stream adjudications. Dugan v. Rank, 372 U.S. 609, 618 (1963). It is possible for a state to establish a comprehensive administrative adjudication process that would suffice as a "suit" under the Amendment, as long as judicial review is available. United States v. Oregon, 44 F.3d 758, 765-67 (9th Cir. 1994).

[14] *See* Dar Crammond, *Counting Raindrops: Prospects for Northwestern Water Right Adjudications, Appendices* A-D (1996) (a study for the Northwest Water Law and Policy Project).

[15] *Id*. *See also* Teresa Rice, *Beyond Reserved Rights: Water Resource Protection for the Public Lands*, 28 IDAHO L. REV. 715, 750 (1992) (noting that federal land management agencies are "actively participating in state adjudications").

law.[16] While western water law under the doctrine of prior appropriation has traditionally frowned on instream flows,[17] recent statutory developments at the state level have provided the federal government with the legal impetus to secure such rights.[18] However, the utility of water rights acquired by the Forest Service pursuant to state law is tempered by the relatively late priority date of such rights.[19]

(C) Rights-Of-Way

Under certain circumstances, the Forest Service may use its control over access to national forest lands to impose conditions on various water uses. The Federal Land Policy and Management Act of 1976[20] (FLPMA) authorizes the Forest Service to grant or renew rights-of-way over, upon, under, or

[16] *See supra* notes 8-10, and accompanying text for a discussion of the Organic Act's primary purposes for which federal reserved rights exist. For example, MUSYA broadened the original purposes of the Organic Act to ensure that national forests were managed for multiple-uses such as outdoor recreation, range, and wildlife and fish. 16 U.S.C. § 528. Such uses have been declared "secondary" by the Supreme Court, and therefore the Forest Service must obtain a water right under state law to secure flows to protect such uses. United States v. New Mexico, 438 U.S. 696, 715 (1978). The Forest Service manual directs the agency to obtain non-reserved federal water rights pursuant to state law. FOREST SERVICE MANUAL § 2541.03 (1991).

[17] Western water law's doctrine of prior appropriation is based on the concept of "use it or lose it." Traditionally, only consumptive uses were deemed "beneficial" under state law; water had to be diverted from its source and used out of stream for purposes such as irrigation, livestock, mining, or domestic watering. Under the traditional system, water could not be appropriated for instream flows because such use did not require a diversion and was not recognized as "beneficial" under state water law.

[18] *See* Blumm, *supra* note 6, at 273. Traditionally, many western states routinely denied applications to secure water rights for instream purposes because such rights could not exist according to state water laws. *Id*. Many states have now amended their water code to allow for instream flows. *See e.g.*, Or. Rev. Stat. §§ 537.332 to 537.360 (1995) (establishing a permit procedure whereby certain state resource agencies may apply to the Oregon Water Resources Department to establish an instream water right). In addition, some prior appropriation states have affirmed federal applications for instream rights even where no specific instream statutory provisions exist. State v. Morros, 766 P.2d 263 (Nev. 1988) (holding that Nevada's definition of beneficial use includes recreation, therefore eliminating the need for a diversion to establish an appropriative right for the BLM to use water under state law).

[19] Late priority dates have little significance in many areas of the West where rivers and streams have been overappropriated for years. However, having a late-priority water right is not without benefits; right holders can protest proposed water transfers that would injure existing rights and assert priority when high streamflow conditions exist.

[20] 43 U.S.C. §§ 1710-1784 (1994).

through national forest lands for various purposes.[21] FLPMA requires the Forest Service to insert terms and conditions in each right-of-way granted to "minimize damage to scenic and esthetic values and fish and wildlife habitat and otherwise protect the environment," and to "require compliance with applicable air and water quality standards."[22] Further, the National Forest Management Act[23] (NFMA) requires right-of-way grants to adhere to the standards and guidelines established by the corresponding forest land and resource management plan.[24]

The Forest Service has used its authority over right-of-way permits to impose minimum streamflows (bypass flows) as a pre-condition to the grantee's access to national forest lands in order to satisfy conservation goals established by national forest plans.[25] Forest Service use of bypass flow conditions in right-of-way permits has been controversial, and Congress recently enacted legislation that imposed a moratorium on the use of bypass flows, pending completion of a task force study on the utility and legality of such permit conditions.[26]

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[21] 43 U.S.C. § 1761(a). In regards to water, right-of-ways are granted to access "reservoirs, canals, ditches, flumes, laterals, pipes, pipelines, tunnels, and other facilities and systems for the impoundment, storage, transportation, or distribution of water." *Id*.

[22] 43 U.S.C. § 1765(a).

[23] 16 U.S.C. §§ 1600-1616 (1994).

[24] 16 U.S.C. § 1604(i). Rights-of-way in existence prior to the development of a forest land and resource management plan must be made consistent with the subsequent plan as soon as practicable. *Id*.

[25] *See* Blumm, *supra* note 6, at 304. The Forest Service has claimed that by-pass flow conditions are necessary for stream channel maintenance and fish. *See supra* note 10, and accompanying text. In deciding that the Organic Act's implied reservation of water rights for securing "favorable conditions of water flow" was unnecessary for channel maintenance, a District Court in Colorado noted that the Forest Service has "broad powers to regulate the construction of irrigation structures within the national forests and, as a practical matter, to control the ability of others to make diversions within the forests." In the Matter of the Amended Application of the United States for Reserved Water Rights in the Platte River, District Court, Water Division No. 1, Colorado, Case No. W-8439-76 (Feb. 12, 1993).

[26] See Pub. L. No. 104-127 § 389, 110 Stat. 888, 1022 (imposing an 18-month moratorium on the use of bypass flows and authorizing the task force); Pub. L. No. 104-180, § 736, 110 Stat. 1569, 1607 (extending the moratorium to 20 months or until the authorized task force report is finished).

(2) Fish and Wildlife Protection

(A) The Endangered Species Act

The Endangered Species Act (ESA)[27] protects species listed as either endangered or threatened[28] and imposes substantive duties on the Forest Service. The Forest Service must ensure that its activities are not likely to (1) jeopardize the continued existence of listed species or (2) adversely modify the critical habitat of such species.[29] Any proposed action that is likely to jeopardize a listed species or adversely affect its critical habitat requires the Forest Service to consult with the relevant federal "consulting agency,"[30] either the United States Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service (NMFS).[31]

Initially, the Forest Service must inquire whether a listed or proposed[32] species "may be present in the area" of the Forest Service's proposed activity.[33] If the consulting agency finds that a listed species is present in the

[27] 16 U.S.C. §§ 1531 to 1544 (1994).

[28] The Secretaries of Interior and Commerce make listing determinations. 16 U.S.C. § 1533(a)(1); *see also* 50 C.F.R. pt. 424 (1995). Interested persons may petition the Secretary to list a species. 16 U.S.C. § 1533(b)(3)(A); *see also* 50 C.F.R. § 424.14.

[29] 16 U.S.C. § 1536(a)(2). The Secretaries of Interior and Commerce must designate critical habitat concurrent with the listing of a species. *Id*. § 1533(a)(3)(A); *see also* 50 C.F.R. § 424.12 (criteria for designating critical habitat).

The Forest Service also has an affirmative obligation under the ESA to take actions to conserve listed species. 16 U.S.C. § 1536(a)(1).

[30] 16 U.S.C. § 1536(a)(2).

[31] USFWS (Department of the Interior) (non-marine species) and NMFS (Department of Commerce) (marine species) are the two federal agencies which share responsibility for administering the ESA. 50 C.F.R. § 402.01(b). *See infra* §§ 2.8(2)(A) (USFWS), 2.7(2)(A) (NMFS) for more on the ESA responsibilities of these "consulting agencies."

[32] A "proposed species" is one for which a final listing determination is pending. 50 C.F.R. § 402.02.

[33] 16 U.S.C. § 1536(c)(1); *see also* 50 C.F.R. § 402.12. The Forest Service may also initiate "early consultation" with a consulting agency if a prospective federal permit applicant "has reason to believe that the prospective action may affect listed species or critical habitat" and requests that the Forest Service enter into early consultation. 50 C.F.R. § 402.11. Prior to the initiation of early consultation the prospective applicant must certify to the Forest Service that "(1) it has a definite proposal outlining the action and its effects and (2) it intents to implement its proposal, if authorized. *Id*. § 402.11(b). The procedures and responsibilities for early consultation are similar to those required for formal consultation except that references to the "applicant" are treated as "prospective applicant" and a "preliminary biological opinion" not a biological opinion is issued by the USFWS or NMFS. *Id*. § 402.11(d). For a discussion of the formal consultation requirement, see *infra* notes 37, 39-41, and accompanying text.

area,[34] the Forest Service must prepare a biological assessment (BA).[35] For a proposed species, the Forest Service need only "confer" with the consulting agency if the authorized action is likely to jeopardize the continued existence of any proposed species or result in the destruction or adverse modification of proposed critical habitat.[36] If the BA shows that the Forest Service's proposed activity is likely to affect the continued existence of the listed species or adversely affect its critical habitat, formal consultation is required.[37] Forest Service land and resource management plans (LRMPs) governing timber, range, and road building projects constitute "ongoing agency action" and therefore require consultation even if a species is formally listed after the adoption of the LRMP.[38] Further, the Forest Service must consult with NMFS or the FWS where proposed projects such as individual timber sales or any other on-the-ground activities authorized pursuant to the LRMP would adversely affect a listed species or its habitat.

Formal consultation results in a biological opinion (BiOp) issued by the consulting agency.[39] If the consulting agency concludes that the Forest Service's proposed action is not likely to jeopardize the species, the agency

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[34] The consulting agency must use "the best scientific and commercial data available" in making this determination. 16 U.S.C. § 1536(c)(1).

[35] 16 U.S.C. § 1536(c)(1). The contents of the BA are "at the discretion of" the Forest Service, depending on the nature of the proposed action. 50 C.F.R. § 402.12(f). However, the BA must be based on "the best available scientific and commercial data available." 16 U.S.C. § 1536(a)(2). The BA must be completed within 180 days or a mutually agreed upon date. *Id*. § 1536(c)(1).

[36] 16 U.S.C. § 1536(a)(4); *see also* 50 C.F.R. § 402.10.

[37] 50 C.F.R. § 402.12(k). Formal consultation regulations for USFWS and NMFS are at 50 C.F.R. § 402.14. The Forest Service may not "make any irreversible or irretrievable commitment of resources" once formal consultation has begun. 16 U.S.C. § 1536(d); 50 C.F.R. § 402.09. Action agencies such as the Forest Service may also engage in "informal consultation" with a consulting agency to determine whether formal consultation is required. 50 C.F.R. § 402.13. Informal consultation includes all discussions and correspondence between the action and consulting agency. *Id*. § 402.13(a). The consulting agency may suggest modifications to the proposed action that could be implemented to avoid adverse effects to the listed species or corresponding critical habitat. *Id*. § 402.13(b).

[38] Pacific Rivers Council v. Thomas, 30 F.3d 1050, 1053-54 (9th Cir. 1994).

[39] *See* 16 U.S.C. § 1536(b)(3)(A). Content requirements for BiOps are at 50 C.F.R. § 402.14(h). *See also* 50 C.F.R. § 402.14(g) (listing the expert agencies responsibilities during formal consultation, including: (1) the evaluation of the effects of the proposed action and cumulative effects on the listed species or critical habitat, *id*. § 402.14(g)(3), and (2) the use of "the best scientific and commercial data available," *id*. § 402.14(g)(8)).

issues a "no jeopardy BiOp."[40] Conversely, if the consulting agency cannot make this determination, it must issue a "jeopardy BiOp," which may include "reasonable and prudent alternatives" to the proposed action that will avoid jeopardy.[41]

If the Forest Service relies on and follows the measures specified in the BiOp, it has probably fulfilled its ESA obligations.[42] However, the Ninth Circuit has held that Forest Service's reliance on a BiOp to satisfy its ESA obligations cannot be arbitrary and capricious.[43] The Ninth Circuit has also ruled that action agencies such as the Forest Service are not bound by all the details of a BiOp so long as they take alternative, reasonably adequate measures to ensure the continued existence of listed species.[44]

The ESA also prohibits the Forest Service and other federal agencies from "taking" any endangered species.[45] Taking is defined broadly to include

[40] 50 C.F.R. § 402.14(h)(3).

[41] 50 C.F.R. § 402.14(h)(3). The consulting agency may also issue a jeopardy BiOp with no reasonable and prudent alternatives. See id. (directing that a jeopardy BiOp "shall include reasonable and prudent alternatives, if any").

The Forest Service may also be required to reinitiate formal consultation with the consulting agency when: (1) the Forest Service retains discretionary control over the action and (2) certain new conditions arise or new information becomes available. 50 C.F.R. § 402.16(a)-(d).

[42] Environmental Coalition of Broward County, Inc. v. Meyers, 831 F.2d 984 (11th Cir. 1987). *See also* 50 C.F.R. § 402.15 (responsibilities of the action agency following issuance of a BiOp).

[43] Pyramid Lake Tribe of Indians v. United States Dep't of the Navy, 898 F.2d 1410, 1415 (9th Cir. 1990) (action agencies may not solely rely on BiOps to establish conclusively that they have satisfied their ESA obligations; a decision to rely on a BiOp must be shown to not be arbitrary and capricious).

[44] Tribal Village of Akutan v. Hodel, 854 F.2d 651, 660-61 (9th Cir. 1988). *But see* American Rivers v. National Marine Fisheries Service, No. 96-384, slip op. at 28-29 (D. Or. April 3, 1997) (distinguishing *Village of Akutan* and rejecting plaintiff's claim that any deviation from the reasonable prudent alternatives provided by NMFS' 1994-1998 Biological Opinion for the Federal Columbia River Power System Operations triggers a duty to come up with other mitigative measures).

[45] Section 9 of the ESA prohibits all persons (including federal agencies) from the "taking" of any endangered fish and wildlife species. 16 U.S.C. § 1538(a)(1). Federal regulations expand this prohibition to threatened species as well. 50 C.F.R. § 17.31(a).

harassing or harming species,[46] but incidental take "statements" (similar to permits) that reduce or minimize the take of threatened or endangered species may be issued by the consulting agency.[47]

(B) Forest Service Fish and Wildlife Obligations under MUSYA and NFMA

In addition to the requirements imposed by the ESA, the Forest Service has a duty under both the Multiple-Use Sustained-Yield Act[48] (MUSYA) and the National Forest Management Act[49] (NFMA) to manage national forest lands for the benefit of fish and wildlife resources.[50] In directing the Forest Service to manage for multiple-use purposes, MUSYA explicitly includes wildlife and fish as a co-equal resource for which national forest lands must be managed.[51] Further, NFMA requires the Forest Service to "provide for diversity of plant and animal communities based on the suitability and

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[46] The ESA defines "take" as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in such conduct. 16 U.S.C. § 1532(19). Federal regulations further define "harm" as any act that actually kills or injures wildlife, including "significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering." 50 C.F.R. § 17.3. This regulation was upheld by the Supreme Court. Babbitt v. Sweet Home Chapter, Communities For A Greater Oregon, 115 S. Ct. 2407 (1995).

[47] An incidental take is a taking that results from, but is not the purpose of, "carrying out an otherwise lawful activity conducted by the Federal agency or applicant." 50 C.F.R. § 402.02. An incidental take requires a permit issued by the consulting agency during formal consultation. *Id*. § 402.14(i). Incidental take permits may be included in a BiOp.

[48] 16 U.S.C. §§ 528-531 (1994).

[49] 16 U.S.C. §§ 1600-1614 (1994).

[50] The duties of the Forest Service concerning fish and wildlife resources on national forest lands focus primarily on protection and enhancement of habitat. GEORGE C. COGGINS & ROBERT L. GLICKSMAN, 3 PUBLIC NATURAL RESOURCES LAW § 18.02[4][b][iii] (1996). Generally, states have control over hunting regulations and the taking of game species even on national forest lands. *Id*. Section 1732(b) of the Federal Land Policy and Management Act (FLPMA) preserves this jurisdictional relationship between the Forest Service and state wildlife regulators, but allows the Forest Service to establish additional protective measures for reasons of public safety, administration, or compliance with federal law. 43 U.S.C. § 1732(b). *See also* 16 U.S.C. 528 ("[n]othing herein shall be construed as affecting the jurisdiction or responsibilities of the several states with respect to wildlife and fish in the national forests").

[51] 16 U.S.C. § 528. The Forest Service must manage national forest lands for fish and wildlife purposes co-equal with the other enumerated multiple-use purposes: outdoor recreation, range, timber, and watershed. *Id*. The inclusion of wildlife and fish as a multiple-use purpose under MUSYA is a general directive; the statute gives Forest Service planners little guidance as to how this is to be accomplished. *See infra* § 2.5(4)(A).

capability of the specific land area in order to meet overall multiple-use objectives," and to incorporate such concerns into each individual forest land and resource management plan.[52]

(3) Environmental Regulation

(A) The National Environmental Policy Act

The National Environmental Policy Act (NEPA)[53] requires the Forest Service to complete a detailed statement on the environmental impacts of any "major Federal actions significantly affecting the quality of the human environment."[54] This environmental impact statement (EIS) must examine: (1) the environmental impact of the proposed action; (2) any unavoidable adverse environmental effects; (3) alternatives to the proposed action.[55]

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[52] 16 U.S.C. § 1604(g)(3)(B). Forest Service regulations state that "[f]ish and wildlife habitat shall be managed to maintain viable populations of existing native and desired non-native vertebrate species in the planning area. 36 C.F.R. § 219.19 (1996). The regulations define a "viable population" as "one which has the estimated numbers and distribution of reproductive individuals to ensure its continued existence is well distributed in the planning area." *Id*. In order to ensure that viable populations of native and non-native vertebrate species are preserved in the planning area, the Forest Service planning process identifies management indicator species "selected because their population changes are believed to indicate the effects of management activities." *Id*.

[53] 42 U.S.C. §§ 4321 to 4370d (1994).

[54] 42 U.S.C. § 4332(2)(C). For a discussion of what constitutes a "major federal action," see GEORGE C. COGGINS, 2 PUBLIC NATURAL RESOURCES LAW §§ 10G.03[2] to 10G.04 (1996). There has been much litigation surrounding what is a "major" action, *see id*. at § 10G.03[2], and what is a "federal" action. *Id*. at § 10G.04 (the key factor in determining whether an action is "federal" is the "agency's authority to influence significant nonfederal activity. . . . [T]he federal agency must possess actual power to control the nonfederal activity") (quoting Sierra Club v. Hodel, 848 F.2d 1068, 1089 (10th Cir. 1988)); *see also* 40 C.F.R. § 1508.18 (1996).

[55] 42 U.S.C. § 4332(2)(C)(i)-(v). Each EIS must also examine the short-term use of the environment in relation to the maintenance of long-term productivity and any irreversible and irretrievable commitments of resources. *Id*.

The NEPA process has been further defined by regulations promulgated by the Council on Environmental Quality (CEQ).[56] Initially, the Forest Service must determine whether an EIS is necessary for a proposed action.[57] Using its own regulations the Forest Service must determine whether the proposed action normally requires an EIS.[58] Forest Service actions that normally require an EIS include but are not limited to (1) revising a national forest land and resource management plan, (2) proposing that Congress designate wilderness or a wild and scenic river, (3) proposals to "substantially" alter the undeveloped character of an inventoried roadless area where the road and harvest units impact 5,000 acres in only one part of the roadless area, (4) approving the aerial application of chemical pesticides on an operational

[56] CEQ's NEPA regulations can be found at 40 C.F.R. pt. 1500. The CEQ was created by NEPA. *See* 42 U.S.C. §§ 4341 to 4347. CEQ regulations are entitled to substantial deference regarding NEPA's requirements, Andrus v. Sierra Club, 442 U.S. 347, 358 (1979), and are binding on all federal agencies. 40 C.F.R. § 1500.3 (declaring that 40 C.F.R. pts. 1500 to 1508 are binding on federal agencies). In addition, federal agencies must promulgate their own NEPA regulations to supplement the CEQ regulations. 40 C.F.R. § 1507.3(a). For Forest Service NEPA regulations, see 57 Fed. Reg. 43,180 (1992) (codified at FOREST SERVICE HANDBOOK 1909.15). It should be noted that the Forest Service NEPA handbook is not a legally binding agency regulation. *See* Southwest Center for Biological Diversity v. U.S. Forest Service, 100 F.3d 1443, 1450 (9th Cir. 1996) (holding that the Forest Service Manual and Handbook "does not have the independent force and effect of law").

[57] *See* 40 C.F.R. § 1501.4.

[58] *Id*. § 1501.4(a). Certain proposed actions deemed "categorical exclusions" are exempt from the NEPA documentation process; such actions require neither an EA nor an EIS. *Id*. §§ 1508.4, 1501.4(a)(2). CEQ defines categorical exclusion as "a category of actions which do not individually or cumulatively have a significant effect on the human environment and which have been found to have no such effect in procedures adopted by a Federal agency in implementation of these regulations." 40 C.F.R. § 1508.4. The Forest Service must specify the criteria for any categorical exclusions in its regulations. *Id*. § 1507.3(b)(1), (2). The Forest Service identifies the following agency actions as categorically excluded from the EIS/EA process: (1) prohibiting certain activities to provide for short-term resource protection or to protect public health and safety; (2) policies to establish Forest Service-wide administrative procedures, program processes, or instructions; (3) repairing and maintaining administrative sites; (4) repairing and maintaining roads, trails, and landline boundaries; (5) repairing and maintaining recreation facilities and sites; (6) acquiring land or an interest in land; (7) selling or exchanging land and resources where the land uses remain essentially the same; and (8) approving, modifying, or continuing minor, short-term special uses of national forest lands. *See* 57 Fed. Reg. 43,208 (1992) (codified at FOREST SERVICE HANDBOOK § 1909.15 ch. 31.1b) (listing the categories of Forest Service actions excluded from NEPA documentation requirements). In addition to those categories excluded by the Forest Service, the Secretary of Agriculture excludes the following activities from NEPA documentation: policies that relate to routine activities such as personnel, organizational changes, or other similar administrative functions; inventories, research activities, and studies limited in context and intensity; activities pertaining solely to the funding of programs; educational and informational programs; law enforcement activities; activities that are advisory to other agencies; and activities related to trade representation. *Id*.

basis, or (5) approving the use of 1,500 acres or more of national forest lands as an all-season recreation resort complex.[59] If the activity is one that does not normally require an EIS, the Forest Service must prepare an environmental assessment (EA).[60]

An EA is a "concise public document" which determines if an EIS is necessary.[61] After the completion of the EA, if the Forest Service determines that no EIS is required, it issues a finding of no significant impact (FONSI).[62] Otherwise, the Forest Service must initiate the EIS process.[63]

The first stage of the EIS process involves "scoping."[64] The Forest Service must ensure through the scoping process that the EIS adequately considers the environmental impacts of the proposed action.[65] An EIS is prepared in two stages--a draft EIS (DEIS) followed by a final EIS (FEIS)—and may be

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[59] *See* 57 Fed. Reg. 43,200 (1992) (codified at FOREST SERVICE HANDBOOK § 1909.15 ch. 20.6) (listing the classes of Forest Service actions that require an EIS). An EIS is required for Forest Service activities classified as class 1-4 actions: class 1 actions are those for which an EIS is required by law; class 2 actions propose to carry out or approve the aerial application of pesticides on an operational basis; class 3 actions would substantially alter the undeveloped character of an inventoried roadless area of 5,000 acres or more; and class 4 actions are proposals to take major federal action that would significantly affect the environment. *Id*.

[60] 40 C.F.R. § 1501.4(b).4

[61] 40 C.F.R. § 1508.9. The EA must provide "sufficient evidence and analysis" to determine if an EIS is necessary. *Id*. § 1508.9(a)(1). An EA may also be use to aid in the Forest Service's compliance with NEPA when no EIS is required. *Id*. § 1508.9(a)(2).

[62] 40 C.F.R. § 1501.4(e). The FONSI must include the EA (or a summary of it) and any other environmental documents related to the EA. *Id*. § 1508.13. *See also* 57 Fed. Reg. 43,211 (1992) (codified at FOREST SERVICE HANDBOOK § 1909.15 ch. 43.1) (Forest Service FONSI regulations).

[63] 40 C.F.R. 1501.4(d). *See also* 57 Fed. Reg. 43,211 (1992) (codified at Forest Service Handbook § 1909.15 ch. 43.2) (dictating that where the Forest Service determines after the EA process that the proposed action would have a significant effect on the environment the agency must prepare a notice of intent to prepare an EIS).

[64] Scoping is an "early and open process" to (1) determine the scope of issues to be addressed and (2) identify the significant issues related to the proposed action. 40 C.F.R. § 1501.7. The Forest Service must invite affected (1) federal, state, and local agencies; (2) Indian tribes; and (3) interested persons to participate in the scoping process. *Id*. § 1501.7(a)(1).

[65] The Forest Service must examine three types of actions (connected, cumulative, and similar), three types of alternatives (no action, other reasonable courses of action, and mitigation measures), and three types of impacts (direct, indirect, and cumulative) to determine the scope of the EIS. 40 C.F.R. § 1508.25(a)-(c).

supplemented as well.[66] Upon completing a DEIS, the Forest Service must obtain the comments of federal agencies with jurisdiction or special expertise concerning the environmental impacts involved.[67] The FEIS must respond to the comments,[68] and is the document relied on by the Forest Service in making its final decision.[69] The Forest Service's final decision is issued in a record of decision (ROD).[70]

(B) The Clean Water Act and Best Management Practices

Under section 313 of the federal Clean Water Act (CWA),[71] the Forest Service must comply with water pollution control and abatement measures established by the CWA.[72] This duty extends to best management practices (BMPs) established by individual states pursuant to water quality management plans (WQMPs) developed as part of the state's in-depth

[66] 40 C.F.R. § 1502.9. *See id.* § 1502.9(c) for circumstances which require the Forest Service to supplement an EIS.

[67] 40 C.F.R. § 1503.1(a)(1). The Forest Service must also request the comments of appropriate state and local agencies, Indian tribes, the public, and any agency that has requested it be notified of actions similar to that proposed. *Id.* § 1503.1(b).

[68] 40 C.F.R. § 1502.9(b).

[69] CEQ regulations outline the procedures the Forest Service must follow in its decision making to comply with NEPA. 40 C.F.R. § 1505.1.

[70] 40 C.F.R. § 1505.2. The ROD must contain certain findings: (1) the decision itself; (2) all the alternatives considered (specifying the alternatives which were considered to be "environmentally preferable"); (3) the factors balanced by the agency in making its decision; and (4) whether "all practicable means to avoid or minimize environmental harm from the alternative selected have been adopted, and if not, why they were not." *Id.* § 1505.2(a)-(c). A monitoring and enforcement program for mitigation of the environmental impacts of the decision (if applicable) must also be adopted in the ROD. *Id.* § 1505.2(c). The Forest Service may also take further future actions to ensure that its decision is implemented. *Id.* § 1505.3.

[71] 33 U.S.C. §§ 1251 to 1387 (1994).

[72] Id. § 1323.

planning process to deal with nonpoint sources of water pollution.[73] In addition, Section 319 of the CWA gives states the authority to review federal financial assistance programs and development projects to ensure consistency with state nonpoint source control measures.[74] Reports by the

[73] The CWA attempts to regulate nonpoint sources of water pollution through state planning processes. Id. §§ 1288, 1313, 1329. Sections 208 and 303 establish a planning process whereby states develop a program to address nonpoint source pollution; both sections are treated as one planning process by the Environmental Protection Agency (EPA). 40 C.F.R. §§ 130.2(k), 130.6 (1996). For a discussion of state nonpoint source programs and their effect on water pollution occurring on federal lands, see COGGINS & GLICKSMAN, *supra* note 50, at § 11A.03. For a brief discussion of each of the four major basin state CWA programs, see *infra* §§ 4.1(2) (Idaho), 4.2(2) (Montana), 4.3(2) (Oregon), and 4.4(2) (Washington).

Best Management Practices (BMPs) are measures employed to meet nonpoint source needs, including "structural and nonstructural controls and operation and maintenance procedures." 40 C.F.R. § 130.2. States are directed to develop BMP's specifically aimed at alleviating nonpoint source runoff caused by silvicultural and mining projects, activities known to occur on national forest lands. 33 U.S.C. § 1288(b)(2)(F)-(H). *See also* 40 C.F.R. § 130.6(c)(4)(iii)(D)-(E).

The CWA grants states the power to designate non-state entities to carry out BMPs established pursuant to the state WQMPs. 33 U.S.C. § 1288(c)(1). Management Agency Agreements (MAAs) have been entered into between the Forest Service and Idaho, Oregon, and Washington designating the Forest Service as the managing agency (for the enforcement of BMP's and state water quality standards) for national forest lands in those states, and officially recognizing the sufficiency of the Forest Service BMPs. *See* Washington State Department of Ecology and U.S. Dep't of Agriculture Forest Service, Nonpoint Source Pollution Responsibilities and Activities Memorandum of Agreement (Dec. 1990); Oregon Department of Environmental Quality and U.S. Dep't of Agriculture Forest Service, Nonpoint Source Pollution Responsibilities and Activities Memorandum of Agreement (Dec. 1990). States must certify that such agreements will not result in the breach of state water quality standards. 33 U.S.C 1288(b)(3)-(4). *See also* 40 C.F.R. § 130.6(c)(5).

The Ninth Circuit has recognized the substantive duty of the Forest Service to comply with state water quality standards. *See* Marble Mountain Audubon Soc'y v. Rice, 914 F.2d 179, 182 (9th Cir. 1990) (Forest Service is required to comply with state designated water quality standards); Northwest Indian Cemetery Protective Ass'n v. Peterson, 795 F.2d 688, 697 (9th Cir. 1986) (BMPs are merely a means to achieve state water quality standards; compliance with BMPs is not sufficient in itself to satisfy the CWA if state water quality standards are still violated).

[74] 33 U.S.C. § 1329(b)(2)(F). EPA has decided that the following Forest Service activities are "federal development projects" subject to state review under section 319: (1) Forest Plans (LRMPs), (2) Resource Area Analysis, (3) Integrated Management Plans, (4) Timber Activities/Sales, and (5) Watershed Management. OFFICE OF WATER, U.S. ENVIRONMENTAL PROTECTION AGENCY, DRAFT FEDERAL CONSISTENCY GUIDANCE at App. F.2 (SELECTED FEDERAL ASSISTANCE PROGRAMS) (Aug. 1988).

states and Environmental Protection Agency (EPA) estimate that approximately 16,731 stream miles are water quality impaired in national forests in the Columbia River Basin.[75]

The Forest Service's own regulations prescribe that management concerns regarding compliance with the CWA be incorporated into the planning process on national forest lands.[76]

In addition, by mandating that timber be harvested only where the land is suitable for such practice, NFMA attempts to ensure that the removal of timber from national forest lands does not detrimentally affect water quality.[77] The Forest Service also requires any person conducting mineral operations or oil and gas leasing activities to comply with regulations established pursuant to the CWA.[78] When by agreement with a particular state the Forest Service has assumed managerial control over the

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[75] U.S. DEP'T OF AGRICULTURE FOREST SERVICE, U.S. DEP'T OF THE INTERIOR BUREAU OF LAND MANAGEMENT, STATUS OF THE INTERIOR COLUMBIA BASIN: SUMMARY OF SCIENTIFIC FINDINGS 103 (Nov. 1996). The Forest Service and BLM note that these estimates are based only on "existing and accessible data;" such findings "likely do not reflect the actual extent and distribution of impairment." *Id.* at 101.

[76] 36 C.F.R. § 219.23(d) (1996).

[77] 16 U.S.C. § 1604(g)(3)(E). *See also* COGGINS & GLICKSMAN, *supra* note 50, at §§ 20.03[4][b], 21.02[3][b] (examining NFMA's watershed and water quality protections). NFMA stipulates that timber is to be harvested only where "protection is provided for streams, streambanks, shorelines, lakes, wetlands, and other bodies of water from detrimental changes in water temperatures, blockages of water courses, and deposits of sediment, where harvests are likely to seriously and adversely affect water conditions or fish habitat." 16 U.S.C. § 1604(g)(3)(E)(iii).

The Forest Service must also be concerned with other authorized activities that occur on national forest lands that may adversely affect water quality. A federal district court in Oregon recently concluded that the Forest Service must obtain state certification prior to issuing a grazing permit in order to ensure that grazing activities do not adversely affect state water quality standards. *See* Oregon Natural Desert Association v. Thomas, 940 F.Supp. 1534, 1541 (D. Or. 1996) (holding that grazing-caused water pollution constituted a "discharge" under the CWA and therefore state CWA section 401 certification was "required before the [Forest Service] issued a cattle grazing permit on the Camp Creek allotment"). *Oregon Natural Desert Association v. Thomas* is currently on appeal to the Ninth Circuit.

[78] 36 C.F.R. §§ 228.8(b), 228.112(c)(2).

implementation and monitoring of BMPs, the Forest Service guarantees that BMPs developed by the agency will meet, at a minimum, the substantive state BMP requirements.[79]

(4) Land Management

The primary role of the Forest Service in the Columbia River Basin is that of land manager. The agency manages national forest lands in the basin according to various statutes[80] including: The Organic Act of 1897;[81] the Multiple-Use Sustained-Yield Act of 1960;[82] the Rangelands Renewable Resources Planning Act of 1974, as amended by the National Forest Management Act of 1976;[83] and the Federal Land Policy and Management Act of 1976.[84] In addition, the Forest Service must manage certain federal reserves adjacent to and within national forest boundaries; the agency

[79] USDA Forest Service Pacific Northwest Region, General Water Quality Best Management Practices 2 (Nov. 1988). In addition, the courts will require achievement of state water quality standards on national forest lands regardless of Forest Service compliance with its own BMPs. Northwest Indian Cemetery Protective Ass'n v. Peterson, 795 F.2d 688, 697 (9th Cir. 1986)

The Forest Service has a "nonpoint source system of management" consisting of: (1) the selection and design of BMPs based on site-specific conditions, technical, economic and institutional feasibility, and the water quality standards of those waters potentially impacted; (2) implementation and enforcement of BMPs; (3) monitoring to ensure that practices are correctly applied as designed; (4) monitoring to determine the effectiveness of practices in meeting design expectations and in attaining water quality standards; (5) evaluation of monitoring results and mitigation where necessary to minimize impacts from activities where BMPs do not perform as expected; and (6) adjustment of BMP design standards and application when it is found that beneficial uses are not being protected and water quality standards are not being achieved to the desired level. *Id*. at 2. The Forest Service develops general BMPs to minimize the effects of activities such as timber harvest, road systems, fire suppression and fuels management, watershed management, mining, recreation, vegetative manipulation, and range management. *Id*. at 9-78. These generic BMPs serve as programmatic guidelines for the specific category of use (eg., timber harvest, range management), with modifications made at the project level depending on the impact of the particular activity. *Id*. at 2.

[80] In addition to the statutes listed, there are several areas in the Columbia River Basin where land management is influenced by special legislation; these areas include the Columbia River Gorge National Scenic Area (CRGNSA), the Hells Canyon National Recreation Area (HCNRA), and the Sawtooth National Recreation Area (SNRA). At times, these special areas and their authorizing statutes and implementing regulations conflict with and often override generic national forest land management laws. *See* 16 U.S.C. §§ 544 to 544p (1994) (CRGNSA); *id*. §§ 460gg to 460gg-13 (HCNRA); *and id*. §§ 460aa to 460aa-14 (SNRA).

[81] 16 U.S.C. §§ 473 to 482 (partially repealed 1976) (1994).

[82] 16 U.S.C. §§ 528 to 531 (1994).

[83] 16 U.S.C. §§ 1600 to 1616 (1994).

[84] 43 U.S.C. §§ 1732(b), 1751-1753, 1765-1771 (1994).

manages such lands under the statutes listed above and specific statutes such as the Wilderness Act of 1964,[85] and the Wild and Scenic Rivers Act.[86]

(A) Forest Service Planning under MUSYA and NFMA

Under MUSYA, Congress requires national forest lands be managed simultaneously for multiple uses.[87] The five statutory uses for national forest lands are (1) outdoor recreation, (2) range, (3) timber, (4) watershed, and (5) wildlife and fish.[88] In addition, MUSYA directs that the renewable resources found on national forest lands be developed and administered to preserve the "sustained yield" of products and services obtained from such resources.[89] While the Act provides a broad outline under which the Forest Service must manage according to the multiple-use and sustained-yield concepts, there are few guidelines to define the agency's managerial discretion.[90] However, since 1976, Forest Service management has been further defined and clarified by the detailed prescriptions contained in NFMA.

FMA outlines a land use planning process the Forest Service must follow when developing a plan to guide regional[91] and local activities on national

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[85] 16 U.S.C. §§ 1131 to 1136 (1994).

[86] 16 U.S.C. §§ 1271 to 1286 (1994).

[87] 16 U.S.C. § 528.

[88] *Id*.

[89] 16 U.S.C. § 529. MUSYA defines "sustained yield" as the "achievement and maintenance in perpetuity of a high level annual or regular periodic output of the various renewable resources of the national forests without impairment of the productivity of the land." *Id*. § 531(b).

[90] *See* COGGINS & GLICKSMAN, *supra* note 50, at § 16.01[2][b] (noting that neither the courts nor the Forest Service has interpreted MUSYA as imposing "concrete limitations on agency discretion"). The Ninth Circuit opined that the statutory definition of multiple-use under MUSYA "breathes discretion at every pore." Perkins v. Bergland, 608 F.2d 803, 806 (9th Cir. 1980).

[91] The national forest system is administratively broken down into "regions," 36. C.F.R. § 200.2 (1996). Each national forest unit is located within a particular region. *Id*. There are three forest service regions within the Columbia River Basin: (1) the "Northern Region," (Region 1) has its regional office in Missoula, Montana, and consists of national forest units in northern Idaho and Montana; (2) the "Intermountain Region" (Region Four) headquarters are in, Ogden, Utah, and includes national forest units in Utah, Nevada, and central and eastern Idaho; (3) national forests in Washington and Oregon are in the "Pacific Northwest Region" (Region 6), which has its regional office in Portland, Oregon. *Id*.

forest lands.[92] The process mandates that each national forest within a region develop a Land and Resource Management Plan (LRMP).[93] Each national forest LRMP serves as a programmatic document which both identifies and categorizes various uses of forest service lands, and establishes broad standards and guidelines governing forest uses to which individual projects at the district level must adhere.[94] NFMA directs the Forest Service to utilize a "systematic interdisciplinary approach" that achieves "consideration of physical, biological, economic, and other sciences" when developing the LRMP[95] Further, the planning process for a national forest unit must incorporate the multiple-use and sustained-yield directives of MUSYA, and provide for the coordination of outdoor recreation, range, timber, watershed, wildlife and fish, and wilderness projects and activities.[96]

The Forest Service has promulgated regulations to govern the development and revision of a forest LRMP.[97] NFMA requires that the forest planning process adhere to the environmental evaluation procedures of NEPA, and the

[92] 16 U.S.C. § 1604. In addition to the regional and local emphasis on planning, NFMA retained portions of the Rangeland Renewable Resources Reform Act that included requirements for a national planning process for national forest lands. *Id*. §§ 1601 to 1606. First, the Forest Service must complete a renewable resource assessment every ten years that analyzes, inventories, describes, and discusses the policy issues surrounding renewable resources on national forest lands. *Id*. § 1601(a). Second, the agency must submit to the President every five years a renewable resource program documenting the planning objectives governing the protection, management, and development of the national forest system for the next 45-year period. *Id*. § 1602. Third, the Forest Service must submit an annual evaluation report to Congress providing information regarding the implementation of the agency's Program during the previous year. *Id*. § 1606.

[93] 16 U.S.C. § 1604(a). The development of the LRMP must be coordinated with parallel planning processes of state and local governments, and other federal agencies. *Id*. LRMPs must be revised when conditions within the forest unit have "significantly changed" or at least every fifteen years. *Id*. § 1604(f). In addition, NFMA requires public participation in the development, review, and revision of LRMPs. *Id*. § 1604(d).

[94] *See* COGGINS AND GLICKSMAN, *supra* note 50, at § 10F.05[3][e] (noting that the Forest Service must conform future permits, contracts, and other authorized actions to NFMA LRMPs). While the standards and guidelines established by the LRMP serve as "floor" requirements for the various categories of forest activity, more stringent controls may be attached to a certain activity at the project level after further analysis of its site-specific impacts.

[95] 16. U.S.C. § 1604(b).

[96] Id. § 1604(e)(1).

[97] 36 C.F.R. § 219 (1996). *See also* 16 U.S.C. § 1604(g) (directing the Forest Service to promulgate forest planning regulations).

agency's regulations prescribe how this is to be accomplished.[98] In addition to procedural requirements, NFMA also contains substantive provisions including limits on clearcutting as a method of timber harvest.[99] Further, in the land management planning context, NFMA requires the Forest Service to promulgate regulations to provide for the diversity of plant and animal communities[100] and to ensure that timber harvest occurs only where the lands are physically suited for such practice.[101]

Beyond timber and wildlife, the Forest Service has adopted regulations that identify numerous other activities and practices and prescribe how management of these various uses will be incorporated into a LRMP.[102] These activities include vegetation management practices, evaluation of roadless areas, wilderness management, the grazing resource,[103] the recreation resource, the mineral resource, the water and soil resource, cultural and historical resources, and research natural areas.[104] As of

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[98] 16 U.S.C. § 1604(g)(1). *See also* 36 C.F.R. § 219.12(f) (dictating that the Forest Service follow NEPA procedures in developing forest plan alternatives). For the Forest Service's NEPA regulations as they pertain to the planning process, see *id*. §§ 219.7(b)-(c) and 219.10(b). For a discussion of the Forest Service's general obligations under NEPA, see *supra* § 2.5(3)(A).

[99] 16 U.S.C. § 1604(g)(3)(F). For regulations governing even-aged management, see 36 C.F.R. § 219.27(d).

[100] 16 U.S.C. § 1604(g)(3)(B). For agency regulations further defining Forest Service obligations under the diversity provision, see 36 C.F.R. §§ 219.19 and 219.26.

[101] 16 U.S.C. § 1604(g)(3)(E). For the physical suitability regulations, see 36 C.F.R. § 219.14.

[102] 36 C.F.R. §§ 219.15 to 219.26.

[103] Livestock grazing is a major activity on national forest lands. Forest Service livestock grazing regulation is governed by numerous statutes, each directing the agency to manage or regulate forage allocation in a particular manner. *See* COGGINS & GLICKSMAN, *supra* note 52, at § 19.04[2][a]-[g] (identifying grazing management directives under MUSYA, NFMA, FLPMA, the Organic Act, the National Forest Grazing Act, and the Public Rangelands Improvement Act). For the agency regulations governing grazing activities on national forest lands including specifics regarding the formulation and implementation of allotment management plans (AMPs), permit issuance, and the modification and cancellation of permits, see 36 C.F.R. Part 222. For agency regulations requiring the integration of grazing practices into the forest planning process, see 36 C.F.R. § 219.20 (1996).

The Forest Service authorized just over two million animal unit months (AUMs) (for cattle, sheep, domestic horses, wild horses, and wild burros) of grazing use on national forest lands in Idaho, Montana, Oregon, and Washington (some of the authorized grazing use in Montana, Oregon, and Washington is outside of the Columbia River Basin). USDA FOREST SERVICE, REPORT OF THE FOREST SERVICE: 1995 FISCAL YEAR 124 (June 1996) (figure compiled from Forest Service table documenting authorized grazing use on national forest lands by state).

[104] 36 C.F.R. §§ 219.15 to 219.26.

September 1995, the Forest Service has developed and is managing in accordance with formally adopted LRMPs in every national forest in the Columbia River Basin.[105]

Land use planning for national forest lands in the Columbia River Basin has been influenced by recent administrative strategies dealing with (1) the development of standards and guidelines for the management of late-successional and old-growth timber within the range of the northern spotted owl, (2) the development of temporary standards and guidelines for various aquatic and riparian habitat relied upon by anadromous and non-anadromous fish, and (3) the proposed implementation of ecosystem-based standards and guidelines that will be applied to national forest lands throughout the region.

(1) The Northwest Forest Plan and Timber Salvage Rider.—In 1993, the Forest Service embraced "ecosystem management" as an operating philosophy.[106] The Clinton Administration initiated this movement to a new management paradigm in response to the virtual cease of timber harvest and other national forest operations in the Pacific Northwest due to litigation over the adverse effects of logging on the northern spotted owl.[107] The effects

[105] USDA FOREST SERVICE, REPORT OF THE FOREST SERVICE: 1995 FISCAL YEAR 73 (June 1996). Columbia Basin national forests with completed LRMPs include: the Deschutes, Wallowa-Whitman, Umatilla, Mt. Hood, Malheur, Willamette, and Ochoco national forests in Oregon; the Okanogan, Wenatchee, Gifford Pinchot, and Colville national forests in Washington; the Boise, Targhee, Caribou, Payette, Challis, Sawtooth, Salmon, Nez Perce, Idaho Panhandle, and Clearwater national forests in Idaho; and the Flathead, Kootenai, Bitterroot, Deerlodge, Helena, and Lolo national forests in Montana. *Id*.

[106] USDA Forest Service, Ecosystem Management: 1993 Annual Report Of The Forest Service 2 (May 1994). The Forest Service defines "ecosystem" as "[a] unit comprising interacting organisms considered together with their environment (e.g., marsh, watershed, and lake ecosystems);" and "ecosystem management" as "[a] strategy or plan to manage ecosystems to provide for all associated organisms, as opposed to a strategy or plan for managing individual species." FOREST ECOSYSTEM MANAGEMENT TEAM, U.S. DEP'T OF AGRIC., FOREST ECOSYSTEM MANAGEMENT: AN ECOLOGICAL, ECONOMIC, AND SOCIAL ASSESSMENT IX-10, IX-11 (July 1993).

[107] *Id*. at 93, at II-1. The problems with environmental compliance were primarily associated with Forest Service and BLM attempts to protect the northern spotted owl and marbled murrelet (species listed as threatened under the ESA), and preserve the habitat associated with late-successional and old growth forests. *Id*. at II-5.

The Administration commissioned the Forest Ecosystem Management Assessment Team (FEMAT) to analyze various management schemes and select the best alternative available to satisfy all laws and still produce economic and social benefits. *Id*. at I-1. FEMAT was comprised of various scientists and technical experts from the Forest Service, BLM, EPA, USFWS, NPS, NMFS, and various universities. *Id*.

of the switch to ecosystem management were felt immediately in the Pacific Northwest, as the agency quickly developed permanent guidelines to protect and manage habitat for late-successional and old-growth related species within the range of the northern spotted owl.

The Northwest Forest Plan (Plan)[108] was adopted by a Record of Decision (ROD) issued jointly by the Forest Service and BLM in April 1994.[109] The Plan amended all the Forest Service regional guides for those portions of the Pacific Northwest Region (Region 6) within the range of the northern spotted owl[110] as well as each individual forest plan (LRMP) within the range of the owl.[111] The Plan replaced any standards and guidelines in existing LRMPs that conflicted with those adopted by the ROD, except where the individual forest LRMP was more restrictive or provided greater protection for late-successional forest related species.[112]

The Plan establishes standards and guidelines regulating activity within certain designated land allocation categories, with the impact and severity of such measures varying depending on the type of land designation.[113] For the more than 24 million acres of federal land included in the planning area, the Forest Service and BLM identified seven land allocation categories:

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[108] The Northwest Forest Plan has been variably labeled since its inception as "the President's Plan," "the Clinton Forest Plan," and "Option 9." The official label is now the Northwest Forest Plan.

[109] FOREST SERVICE, U.S. DEPT. OF AGRIC., RECORD OF DECISION FOR AMENDMENTS TO FOREST SERVICE AND BUREAU OF LAND MANAGEMENT PLANNING DOCUMENTS WITHIN THE RANGE OF THE NORTHERN SPOTTED OWL AND STANDARDS AND GUIDELINES FOR MANAGEMENT OF HABITAT FOR LATE-SUCCESSIONAL AND OLD-GROWTH FOREST RELATED SPECIES WITHIN THE RANGE OF THE NORTHERN SPOTTED OWL (1994). [hereinafter SPOTTED OWL ROD]

[110] *Id*. at 12. Most of the national forests affected by the plan are located in the western portions of Washington, Oregon, and northern California, along with parts of some forests in the eastern portion of Washington and Oregon. The California national forests (Lassen and Modoc) affected by the plan are located outside the basin in the Forest Service's Pacific Southwest Region. *Id*

[111] *Id*. National Forests completely within the range of the northern spotted owl are located west of the cascade mountain range in Washington (Gifford Pinchot, Mount Baker-Snoqualmie, and Olympic) and Oregon (Mount Hood, Rogue River, Siuslaw, Siskiyou, Umpqua, and Willamette). *Id*. National Forests partially within the range of the owl are located east of the Cascades in Washington (Okanogan and Wenatchee) and Oregon (Deschutes). *Id*.

[112] *Id*.

Id. at 1.

(1) congressionally reserved areas; (2) late successional reserves; (3) adaptive management areas (AMAs); (4) managed late successional areas; (5) administratively withdrawn areas; (6) riparian reserves; and (7) matrix lands. [114]

The Northwest Forest Plan also developed an aquatic conservation strategy (ACS).[115] Developed primarily to protect salmon and steelhead, the ACS has

[114] Congressionally reserved areas comprise 7,320,600 acres, 30% of the federal land within the owl's range. *Id*. at 6. These lands have been previously reserved by Congress for specific purposes such as national parks and monuments, wilderness areas, wild and scenic rivers, national wildlife refuges. Id.

Late successional reserves comprise 7,430,800 acres, 30% of the owl's range on federal lands. *Id*. These lands are meant to serve as habitat for late-successional and old growth dependent species. *Id*. at A-4, C-9 to C-21. The ROD contemplates limited stand management in such areas so long as approved by the Regional Ecosystem Office. *Id*.

Adaptive management areas constitute 1,521,800 acres, six percent of the federal lands within the owl's range. *Id*. at 6. The purpose of these areas is to give the federal land management agencies the chance to test new management approaches to achieve a balance of ecological, economic, and social goals. *Id*. at A-4, C-21 to C-22.

Managed late successional areas comprised 102,200 acres under the original plan, only one percent of the federal lands within the range of the owl. *Id*. at 4. Managed late successional areas are similar to late successional reserves except they are located in the drier national forests where fire is a regular occurrence. *Id*. at A-4, C-22 to C-28. Some harvest and salvage of timber is allowed in such areas. *Id*.

Administratively withdrawn areas comprise 1,477,100 acres, six percent of the federal lands within the owl's range. *Id*. at 7. These are areas identified in current forest plans, including recreation/visual areas, back country, and other areas where management prescriptions preclude timber harvest. *Id*. at A-4, C-29.

Riparian reserves comprise 2,627,500 acres, 11% of the federal lands within the owl's range. *Id*. at 7, C-30 to C-38. Riparian reserves "provide an area along all streams, wetlands, ponds, lakes, and unstable and potentially unstable areas where riparian-dependent resources receive primary emphasis." Id. at A-5.

Matrix lands comprise 3,975,300 acres, 16% of the federal lands within the owl's range. *Id*. at 7. Most of the timber harvest under the plan occurs in areas designated as matrix that are suitable for such practices. *Id*. at C-39. Timber harvest in the Matrix areas must comply with the requirements of current LRMPs. *Id*.

For a full review of the Forest Service NEPA process in selecting the preferred alternative (Option 9) for the Northwest Forest Plan, see FOREST SERVICE, U.S. DEP'T OF AGRIC., 1 FINAL SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT ON MANAGEMENT OF HABITAT FOR LATE-SUCCESSIONAL AND OLD GROWTH FOREST RELATED SPECIES WITHIN THE RANGE OF THE NORTHERN SPOTTED OWL (Feb. 1994).

[115] SPOTTED OWL ROD, *supra* note 109, B-11 to B-34.

four main components: riparian reserves,[116] key watersheds,[117] watershed analysis,[118] and watershed restoration.[119] The ACS applies various standards and guidelines to each of the four components, and ongoing and proposed forest activities as well as other management actions must be based on the "restoration and maintenance criterion" established by the ACS.[120]

Land management on national forests in the Columbia River Basin was further complicated in 1995 when Congress passed an Emergency Appropriations Bill,[121] and attached thereto a "rider" creating the

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[116] Riparian reserves are "portions of the landscape were riparian-dependent and stream resources receive primary emphasis and where special standards and guidelines apply." *Id*. at B-12. For such areas, a designated amount of land adjacent to the water is set aside with the specific amount depending on whether the stream or water body is categorized as fish-bearing, permanently flowing nonfish-bearing, a constructed pond, reservoir, or wetland greater than one acre, a lake or natural pond, or a seasonally flowing or intermittent stream, wetland less than an acre, or unstable/potentially unstable area. *Id*. at B-14. In an area designated as a riparian reserve, standards and guidelines disallow programmed timber harvest, and manage roads, grazing, mining, and recreation in accordance with the overall objectives of the ACS. *Id*.

[117] The ROD emphasized that a system of key watersheds that serve as refugia for aquatic species is vital to the conservation and restoration of anadromous fish runs. *Id*. at B-18. Key watersheds under the plan are divided into Tier 1 and Tier 2 categories: Tier 1 key watersheds are identified as directly contributing to anadromous fish and bull trout conservation; Tier 2 key watersheds may or may not have at-risk fish, but are singled out for high water quality. *Id*. In addition, key watersheds are to be given the highest priority for watershed restoration programs, and there are to be no new roads built inside a roadless area and no net increase of roads in non-roadless areas within a key watershed. *Id*. at B-19.

[118] Watershed analysis is required in key watersheds, non-key watersheds with inventoried roadless areas, and riparian reserve areas in order to ascertain whether management of such areas is in accordance with the ACS objectives. *Id*. at B-20. The analysis is a "systematic procedure" whereby watersheds are characterized, and information gleamed from such analysis is used to develop management prescriptions in such areas, institute monitoring programs, refine riparian reserve boundaries, and develop restoration projects. *Id*. at B-21. Watershed analysis is required in key watersheds, required in roadless areas prior to management approved activities, and recommended for all other watersheds. *Id*.

[119] The primary goal of watershed restoration under the plan is to improve fish habitat, riparian habitat, and water quality. *Id*. at B-30. The focus of such programs is the removal or upgrading of roads, the restoration of large conifers in riparian reserves, and the restoration of channel complexity. *Id*. at B-31.

[120] *Id*. at C-1. For example, where riparian reserves overlap on to other designated areas (e.g., late succession reserves, managed late successional areas, matrix lands), the more restrictive riparian reserve standards and guidelines are added to those provided for the other designations. *Id*. In addition, key watersheds and the standards and guidelines governing activities and management may also overlay any of the land designations. *Id*.

[121] Emergency Supplemental Appropriations for Additional Disaster Assistance, for Anti-Terrorism Initiatives, for Assistance in the Recovery from the Tragedy that Occurred at Oklahoma City, and Recissions Act (Emergency Appropriations Act), Pub. L. No. 104-19, §§ 2001-2002, 109 Stat. 194, 240-47 (1995) (to be codified at 16 U.S.C. § 1611).

"Emergency Salvage Timber Sale Program."[122] The "salvage rider" directed the Forest Service to allow timber harvest on national forest lands under certain circumstances; timber harvest authorized pursuant to the rider was deemed by Congress to comply with all environmental laws. Specifically, the salvage rider directed the forest service to release timber sales in three instances: strictly salvage sales,[123] Option 9 sales,[124] and section 318 sales.[125] The authority granted to the Forest Service to expedite or re-initiate certain timber contracts under the Salvage Rider expired December 31, 1996.[126]

(2) PACFISH and INFISH.—Following the development of the Northwest Forest Plan, the Forest Service designed two temporary strategies to establish interim standards and guidelines to protect anadromous and non-anadromous fish habitat. These "Eastside" strategies focus on the aquatic ecosystems that exist on National Forest and some BLM lands in the Columbia River Basin east of the Cascades and outside of the geographic

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[122] Pub. L. No. 104-19, § 2001, 109 Stat. 240.

[123] The Forest Service was directed to achieve a salvage timber sale volume above programmed levels (as established by forest LRMPs) during the emergency time period. Id. § 2001(b)(1). In addition, for sales granted pursuant to the salvage provision, the agency need only prepare one environmental document to satisfy all environmental laws. Id. § 2001(c)(1)(A). The breadth of such documentation is solely up to the discretion of the action agency (Forest Service or BLM), it does not have to consult with other federal agencies. Idaho Conservation League v. Thomas, 917 F.Supp. 1458, 1464, (Dist. Idaho 1995), *aff'd*, 91 F.3d 1345, 1349-50 (9th Cir. 1996).

[124] Option 9 was the selected alternative for the Northwest Forest Plan. *See supra* § 2.5(4)(A)(1). The Salvage Rider called for expedited procedures for the award of timber sales within the geographic range covered by the Northwest Forest Plan, and specifically exempted such sales from all court orders and environmental laws. Pub. L. 104-19, § 2001(d), 109 Stat. 244. One district court analyzed the § 2001(d) language and agreed that the Salvage Rider exempts all Option 9 sales from compliance with environmental laws. Oregon Natural Resources Council v. Thomas, No. 95-6272-HO, slip op. at 7 (D. Or. Dec. 4, 1995), *aff'd*, 92 F.3d 792, 796 (9th Cir. 1996).

[125] This section refers to "all timber sale contracts offered or awarded in any unit of the national forest system or district of the BLM subject to Section 318...." prior to the enactment of the 1995 Salvage Rider. Pub. L. 104-19, § 2001(k)(1), 109 Stat. 246. An Oregon District Court has held that the Act did in fact commission the release of all "offered" sales between 1989 and 1995. Northwest Forest Resources Council v. Glickman, No. 95-6244-HO, slip op. at 24 (D. Or Jan. 10, 1995), *aff'd*, 82 F.3d 825 (9th Cir. 1996). In addition, the court held that the term "offered" did not exclude canceled and enjoined sales. *Id*. at 13-19.

[126] Proposed extensions or modifications of the salvage rider were considered by Congress in 1996. *See Forest amendments may dominate money bill on Senate floor*, Public Lands News (Resources Publishing Co., Washington D.C.), September 19, 1996, at 1-2; *Permanent Salvage Rider faces first test in Senate panel*, Public Lands News (Resources Publishing Co., Washington D.C.), May 2, 1996, at 5-6.

range of the northern spotted owl.[127] The first was titled "Interim Strategies for Managing Anadromous Fish-producing Watersheds in Eastern Oregon and Washington, Idaho, and Portions of California" (PACFISH).[128] PACFISH has affected land management decisions in thirteen national forests within the Columbia River Basin in Idaho (Bitterroot, Clearwater, Nez Perce, Boise, Challis, Payette, Salmon, and Sawtooth), Oregon (Malheur, Ochoco, Umatilla, and Wallowa-Whitman), and Washington (Okanogan).[129]

The PACFISH strategy amended existing forest plans to add new riparian goals,[130] interim Riparian Management Objectives (RMOs),[131] and more stringent standards and guidelines to be applied to projects and activities within Riparian Habitat Conservation Areas (RHCAs).[132] The new standards and guidelines apply to proposed and on-going projects existing only in the

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[127] This section focuses only on PACFISH and INFISH; however, in 1994 the Forest Service amended national forest plans east of the cascade mountains for the Continuation of Interim Management Direction Establishing Riparian, Ecosystem and Wildlife Standards for Eastside Forests. These amendments created a screening process that provided for the consideration of the historic range of variability for ecosystem management planning, riparian areas, and late successional and old growth wildlife species prior to project approval and implementation. Both PACFISH and INFISH override the riparian portions of the "Eastside Screens," but the ecosystem and wildlife sections remain in place. These additional protections will remain in place until superseded by the long term planning direction forthcoming from Interior Columbia Basin Ecosystem Management Project (ICBEMP). For a brief discussion of the ICBEMP, see *infra* § 2.5(4)(A)(3).

[128] USDA FOREST SERVICE & USDI BUREAU OF LAND MANAGEMENT, ENVIRONMENTAL ASSESSMENT FOR THE IMPLEMENTATION OF INTERIM STRATEGIES FOR MANAGING ANADROMOUS FISH-PRODUCING WATERSHEDS IN EASTERN OREGON AND WASHINGTON, IDAHO, AND PORTIONS OF CALIFORNIA (March 1995) [hereinafter PACFISH]. The EA stated that PACFISH and the Northern Spotted Owl FSEIS together "provide an aquatic and riparian management strategy for all anadromous fish-producing watersheds on FS- and BLM-administered lands in the western contiguous United States." *Id*. at 12.

[129] *Id*. at 13.

[130] Riparian goals "establish a common set of characteristics of healthy, functioning watersheds, riparian areas, and associated fish habitats." *Id*. at 16. The focus of such goals is to restore and maintain water quality, stream integrity, channel processes, sediment regime, instream flows, natural timing and the variability of the water table elevation in meadows and wetlands, and the diversity and productivity of native and desired non-native plant, vertebrate, and invertebrate communities. *Id*.

[131] RMOs establish "measurable habitat parameters" that define good anadromous fish habitat and provide an indicator of progress towards attainment of goals. *Id*. RMOs include the number of deep pools per mile of stream, water temperature, width-to-depth ratio, the amount of woody debris in forested ecosystems, and stream bank stability and lower bank angle in non-forested ecosystems. *Id*.

[132] Standards and guidelines under PACFISH focus on the management of timber, roads, grazing, recreation, minerals, fire and fuels, general riparian areas, and land uses governed by leases, permits, rights-of-way, and easements. *Id*. RHCAs identify those areas within a particular watershed that are most sensitive to management. *Id*.

RHCAs.[133] The standards and guidelines in current LRMPs govern activities that occur, or are proposed to occur, outside of the designated RHCAs.[134] In addition, PACFISH calls for the designation of key watersheds that receive priority for watershed analysis and restoration projects and the development of a watershed analysis program used to identify areas in need of immediate corrective management.[135]

The second "Eastside" strategy was described as the Inland Native Fish Strategy (INFISH).[136] INFISH established an interim strategy to reduce the risk of loss of populations of resident fish and reduce negative impacts to aquatic areas in twenty-two national forests in eastern Oregon and Washington, Idaho, western Montana, and parts of Nevada.[137] Like PACFISH, INFISH amends existing forest plans, adding new management requirements or replacing those that are not as stringent in the geographically covered area.[138]

The Forest Service implements the interim direction established by INFISH through RMOs, RHCAs, standards and guidelines, and monitoring requirements.[139] The INFISH strategy also identifies a network of priority watersheds within the geographic area affected by the plan.[140] Within these watersheds, biologists and resource specialists use a screening process

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[133] *Id.*

[134] *Id.*

[135] RHCAs within a key watershed include a larger area than non-key watersheds. *Id.* Findings pursuant to watershed analysis provide the basis for adjustments to interim RMOs and RHCAs. *Id.*

[136] USDA FOREST SERVICE, DECISION NOTICE AND FINDING OF NO SIGNIFICANT IMPACT FOR THE INLAND NATIVE FISH STRATEGY (1995).[hereinafter INFISH DECISION NOTICE] *See also* USDA FOREST SERVICE, INLAND NATIVE FISH STRATEGY ENVIRONMENTAL ASSESSMENT (1995).

[137] INFISH DECISION NOTICE, *supra* note 136, at 1. Geographically, INFISH does not affect lands covered by the Northwest Forest Plan or PACFISH. *Id.*

[138] *Id.*

[139] The Forest Service used the same RMOs developed for PACFISH noting that findings were applicable to inland native fish and could apply where watershed analysis had not been completed (recognizing that the "components of good habitat can vary across specific geographic areas"). *Id.* at A-2.

RHCAs are also defined similarly to PACFISH, and the standards and guidelines established by INFISH apply not only to activities that occur in RHCAs, but also those occurring outside such areas that are identified by the NEPA process as potentially degrading a particular RHCA. *Id.* at A-6. Monitoring requirements are to be used to "verify that the standards and guidelines were applied during the project implementation. *Id.* at A-15.

[140] *Id.* at A-13. The Forest Service used specific criteria to select priority watersheds: (1) watersheds with excellent habitat or strong assemblages of inland native fish, with a priority on bull trout populations; (2) watersheds that provide for meta-population objectives; or (3) degraded watersheds with high restoration potential. *Id.*

developed in conjunction with the United States Fish & Wildlife Service (USFWS) to review proposed or new projects.[141] In addition, ongoing projects are reviewed if determined by the Forest Service to pose an unacceptable risk to native fish.[142]

Unlike the Northwest Forest Plan discussed above, both PACFISH and INFISH are temporary in nature, intended to provide "interim" direction for the management of riparian habitat on certain national forest and BLM lands. Both strategies were issued as non-significant amendments to existing land use plans primarily because of their interim nature.[143] The Interior Columbia Basin Ecosystem Management Project, discussed immediately below, will provide long-term management strategies for anadromous and non-anadromous fish habitat located on Columbia River Basin national forests east of the Cascades.

(3) The Interior Columbia Basin Ecosystem Management Project.—Long-term management direction for national forests and BLM districts east of the Cascades in Washington, Oregon, Idaho, Montana, and small portions of Nevada, Utah, and Wyoming is forthcoming in the form of two major EISs referred to collectively as the Interior Columbia Basin Ecosystem

[141] *Id.* at 3.

[142] *Id.*

[143] Under NFMA, there is a specific process whereby the Forest Service is able to amend Regional Guides and individual forest plans. 16 U.S.C. § 1604(f)(4). How in depth this process becomes (whether there needs to be an EIS or an EA/FONSI will suffice) depends on the nature of the amendment, and whether it is determined to be "significant" or "non-significant." 36 C.F.R. § 219.10(f). Neither NFMA nor its implementing regulations define "significant," leaving the determination entirely up to the Forest Service. The Forest Service Handbook requires that the agency examine four factors in determining the significance of a particular action: (1) the timing; (2) the location and size of the area affected in relation to the rest of the planning area; (3) the goals objectives and outputs; and (4) other factors, including the ability of the Forest Service to adapt to changing conditions in the short-term until the adoption of a longer-term solution. USDA FOREST SERVICE, LAND AND RESOURCE MANAGEMENT PLANNING HANDBOOK 1909.12, § 5.32 (1992).

Management Project.[144] When adopted, these plans will serve as a "blueprint" for the future management of over 75 million acres of Forest Service and BLM lands within the Columbia Basin by amending current Forest Service and BLM land use plans with ecosystem-based direction at the regional and sub-regional (forest) level, and replacing the standards and guidelines established by PACFISH and INFISH with long-term devices to protect aquatic resources.[145]

(B) Forest Service Planning: Wilderness Areas

The Wilderness Act of 1964[146] charges that the federal agency in charge of managing a particular wilderness tract "be responsible for preserving the wilderness character" of such lands.[147] The Forest Service has promulgated regulations incorporating the Wilderness Act's substantive requirements into

[144] The entire project is broken into two major plans: (1) the Eastside EIS, which includes all national forests and BLM districts in Washington and Oregon and the Nez Perce and Payette National Forest in Idaho; and (2) the Upper Columbia River EIS, which includes the remaining national forests and BLM districts in Idaho, and certain forests and districts in Montana, Nevada, Utah, and Wyoming. USDA Forest Service and USDOI Bureau of Land Management, The Leading Edge: Newsletter of the Interior Columbia Basin Ecosystem Management Project (Oct. 31, 1996).

The Forest Service and BLM released the scientific framework and assessment in the fall of 1996; the draft environmental impact statements (DEIS) were released in May, 1997, and the final environmental impact statements (FEIS) and records of decision are scheduled for release in the fall of 1997. *Id*.

[145] USDA FOREST SERVICE, CONSIDERING ALL THINGS: INTERIOR COLUMBIA BASIN ECOSYSTEM MANAGEMENT PROJECT, EXECUTIVE SUMMARY 6 (1996). The Forest Service stresses that forest plans must be amended in the Columbia River Basin because of declining salmon runs, costly wildfires, pest out-breaks, runaway noxious weeds, declining soil fertility, legal challenges, and unpredictable resource flow. *Id*.

[146] 16 U.S.C. §§ 1131-1136 (1994).

[147] *Id*. § 1133(b). Management authority over a particular wilderness area rests with whichever federal department or agency had jurisidiction over the designated lands prior to the wilderness designation. *Id*.

the agency's planning process.[148] Both the Act and the Forest Service regulations restrict or disallow the following activities in wilderness areas, subject to valid existing rights: mining; motorized equipment and vehicles; grazing; measures necessary to control fire, insects and diseases; and logging.[149] The Forest Service manages numerous wilderness areas throughout the Columbia Basin.[150]

(C) Forest Service Planning: Wild & Scenic River Corridors

The Forest Service is responsible for the management of rivers designated pursuant to the Wild and Scenic Rivers Act (WSRA).[151] The agency has three primary duties under the Act. First, it is responsible for classifying each river

[148] 36 C.F.R. §§ 219.18, 293.1 to 293.17 (1996). In addition to lands actually designated under the Wilderness Act, the Forest Service must also devote planning resources to examining the effects of proposed activities on the following: (1) roadless areas; (2) areas contiguous to existing wilderness, primitive areas, or administratively proposed wilderness; (3) areas contiguous to roadless and undeveloped areas in other Federal ownership that have identified wilderness potential; (4) and areas designated by Congress for wilderness study, administrative proposals pending before Congress, and other legislative proposals endorsed by the President. *Id*. § 219.17. Courts have been adamant in requiring the Forest Service to take into account the affects that proposed activities could have on future wilderness designations. *See* Parker v. United States, 309 F.Supp. 593 (D. Colo. 1970), aff'd, 448 F.2d 793 (10th Cir. 1971), cert. denied, 405 U.S. 989 (1972) (holding that where certain national forest lands are contiguous to a wilderness area and of wilderness character "it thwarts the purpose and spirit of the [Wilderness] Act to allow the Forest Service to take abortive action which effectively prevents a Presidential and Congressional Decision"); California v. Block, 690 F.2d 753 (9th Cir. 1982) (holding that the Forest Service violated NEPA procedures in the agency's roadless area review and evaluation (RARE) process by not adequately examining the site-specific impact of designating an area non-wilderness and failing to consider a broad enough range of alternatives).

[149] See 16 U.S.C. §§ 1133(a)-(d); and 36 C.F.R. §§ 293.6 to 293.17. There is no express statutory language prohibiting logging- but the legislative history, general provisions of the Act, and the specific ban on road building and motorized equipment establish that commercial logging is prohibited within an area designated as wilderness. *See* COGGINS & GLICKSMAN, supra note 50, at § 14B.04[2] (1996).

[150] USDA FOREST SERVICE, LAND AREAS OF THE NATIONAL FOREST SYSTEM 89-103 (Jan. 1996).

[151] 16 U.S.C. §§ 1271-1286 (1994). *See id*. § 1274(d). Pursuant to the 1986 Amendments to the Act, the Forest Service must develop a "comprehensive management plan" for rivers designated after January 1, 1986. *Id*. In addition, the Forest Service must review within ten years plans developed for rivers designated prior to January 1, 1986, to ensure conformity with new management requirements. Id. § 1274(d)(2). *See also* Wilderness Soc'y v. Tyrrel, 918 F.2d 813 (9th Cir. 1990).

designated under the Act that falls within its management authority.[152] Second, the Forest Service has authority to condemn and purchase lands within the designated river corridor.[153] Third, the agency must develop a "comprehensive management plan" for each particular river designated under the Act, to ensure "the protection of the river values."[154] The Forest Service approaches planning within a designated river corridor as a three-tiered process with the standard NEPA analysis, the incorporation of adjacent lands within the NFMA land use planning process, and the development of a specific Wild and Scenic River Management Plan that incorporates the substantive requirements of the WSRA.[155]

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[152] 16 U.S.C. § 1274(b). The authority to manage a particular section of river is generally granted by the Act which formally adds the river to the wild and scenic river system. *See eg.*, The 47-mile segment of the Clackamas River in Oregon is "to be administered by the Secretary of Agriculture" (Forest Service). *Id*. § 1274(a)(70).

The Forest Service must classify a designated river under its control as wild, scenic, or recreational. *Id*. § 1273. To be classified as "wild" under the Act a river must be "free of impoundments and generally inaccessible except by trail, with watershed or shorelines essentially primitive and waters unpolluted.... representing vestiges of primitive America." *Id*
. § 1273(b)(1). A "scenic" river is one "free of impoundments, with shorelines and watersheds still largely primitive and undeveloped, but accessible in places by roads." *Id*. § 1273(b)(2). "Recreational" rivers are those that "are readily accessible by road or railroad, that may have some development along their shorelines, and that may have undergone some impoundment or diversion in the past." *Id*. § 1273(b)(3).

[153] 16 U.S.C. § 1277. Designated river corridors can include private lands, but agency management prescriptions do not apply to such lands. *Id*. § 1283(b). Therefore, the Act grants limited authority to land management agencies to acquire lands within a corridor. The Forest Service may purchase easements up to an average of 100 acres per mile and/or condemn private property except where more than fifty percent of the land in the corridor is already publicly owned (federal, state, or local ownership). *Id*. For a discussion of some of the problems associated with the "checkerboarded" land ownership scheme within designated river corridors, see Coggins & Glicksman, supra note 50, at § 15.04[1][b] (1996).

[154] 16 U.S.C. § 1274(d)(1). Each designated river corridor must be managed to protect and enhance the values for which it was designated, and other agency authorized activities cannot substantially interfere with such values. *Id*. § 1281(a). Each individual river plan emphasizes both the values for which a particular river was designated, and what activities would substantially interfere with those values. *Id*. The Act specifically requires the Forest Service to manage adjacent lands to carry out the purposes of each designated river, and directs the agency to cooperate with the EPA and appropriate state water pollution control agencies. *Id*. § 1283(a),(c). In addition, the Act has specific provisions governing water development projects and mineral development. *Id*. §§ 1278, 1280.

[155] Usda Forest Service, Metolius River, Wild And Scenic River Management Plan 8-9 (Oct. 1995).

2.6 The Bureau of Land Management[1]

The Bureau of Land Management (BLM), within the United States Department of the Interior, is the federal agency responsible for the management of "public lands" in the Columbia River Basin.[2] Its duties include authorizing and monitoring timber harvest, grazing, access, recreation, and any other activities that occur on public lands in the basin.[3] Several statutes govern the BLM in fulfilling these responsibilities, including the Federal Land Policy and Management Act,[4] the Endangered Species Act,[5] and the National Environmental Policy Act.[6]

(1) Water Management

The BLM has no direct control over flood control, navigation, or hydropower except as dictated by agency land management responsibilities. However, the BLM does, under certain circumstances, have rights to, or management authority over, water resources or activities that affect such resources. First, while BLM lands have no reserved water rights, public lands that have been withdrawn subsequent to the enactment of the Federal Land Policy and Management Act[7] (FLPMA) for a specific purpose may include such rights. Second, the BLM, like any other appropriator, can apply to the appropriate state agency for a state water right. Third, the BLM has the ability to use its control over rights-of-way authorization to limit adverse affects on public land water resources.

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[1] Portions of this section were adapted from GEORGE C. COGGINS AND ROBERT L. GLICKSMAN, PUBLIC NATURAL RESOURCES LAW (1996).

[2] The Federal Land Policy and Management Act defines "public lands" to mean any lands or interest in land "owned by the United States within the several States and administered by the Secretary of the Interior through the Bureau of Land Management." 43 U.S.C. § 1702(e) (1994).

[3] Typically, the public lands managed by the BLM are not reserved. However, the BLM does manage some federally reserved wilderness areas and wild and scenic river corridors in the basin. *See infra* §§ 2.6(4)(B)-(C) (discussing BLM land management procedures for wilderness areas and wild and scenic river corridors).

[4] 43 U.S.C. §§ 1701 to 1784 (1994).

[5] 16 U.S.C. §§ 1531 to 1544 (1994).

[6] 42 U.S.C. §§ 4321 to 4370d (1994).

[7] 43 U.S.C. §§ 1701-1784 (1994).

(A) Federal Reserved Water Rights for BLM Lands

Federal reserved lands are guaranteed a certain amount of water under federal law.[8] The quantity of water reserved for such lands is the amount necessary to fulfill the primary purposes of the reservation.[9] The Interior Department maintains that BLM lands generally do not possess reserved water rights because such lands have not been reserved or dedicated to a particular purpose.[10] The Interior Department also claims that power site withdrawals, lands classified for grazing, wild horse ranges, and the Oregon and California timber lands do not have reserved water rights.[11] In addition, FLPMA did not reserve water for BLM public lands.[12]

FLPMA does grant the BLM limited authority to withdraw lands from the public domain for a specific purpose.[13] Lands administratively withdrawn by the BLM pursuant to FLPMA have reserved rights sufficient to fulfill the purposes of the reservation.[14] Further, lands withdrawn pursuant to certain executive orders for public springs, water holes, and oil shale purposes also

[8] Arizona v. California, 373 U.S. 546, 601 (1963).

[9] United States v. New Mexico, 438 U.S. 645 (1978). *See also* Cappaert v. United States, 426 U.S. 128, 141 (1976) (the quantity of water is "that amount necessary to fulfill the purpose of the reservation, no more"). Federal reserved water rights are unique because they are federally created, require no diversion, and are granted priority dates equal to the date of the reservation. *See* Michael C. Blumm, *Reserved Water Rights, in* 4 WATERS AND WATER RIGHTS 213-15 (Robert E. Beck ed., 1996).

[10] 86 I.D. 553, 588 (1979). The Tenth Circuit has agreed with this interpretation. Sierra Club v. Watt, 659 F.2d 203 (D.C. Cir. 1981).

[11] 86 I.D. at 590-94 (1979). *See also* United States v. Denver, 656 P.2d 1, 33-34 (Colo. 1982) (no reserved water for geothermal power production).

[12] 86 I.D. at 594; Sierra Club v. Watt, 659 F.2d 203 (D.C. Cir. 1981).

[13] 43 U.S.C. §§ 1714(b)-(d) (1994).

[14] However, all withdrawals occurred subsequent to 1976 and therefore have late priority dates, and limited impact on overappropriated streams.

have limited reserved rights.[15] In addition, both Wilderness Areas[16] and Wild and Scenic Rivers[17] under BLM management control have reserved water rights.

In managing waters reserved for BLM lands, the agency must comply with the McCarran Amendment (Amendment).[18] The Amendment waived federal sovereign immunity, allowing states to include federal reserved rights in general stream adjudications determining the rights to water from a river system or other source.[19] The Amendment extends only to general stream adjudications which are comprehensive procedures established to join all possible claimants within a watershed, not claims initiated against the United States by individual appropriators.[20]

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[15] *See* Blumm, *supra* note 9, at 267 (examining public lands reserved for public springs and water holes under the 1926 executive order known as Public Water Reserve 107, and lands withdrawn for oil shale purposes under 1916 and 1930 executive orders).

[16] A 1979 Solicitor's opinion that was later renounced concluded that the Wilderness Act of 1964 reserved water rights necessary to carry out the preservation-oriented purposes of the Act, including those required for recreation. 86 I.D. 553, 608-09 (1979), rev'd by Solicitor's Opinion on Federal Reserved Water Rights in Wilderness Areas, 96 I.D. 211 (Supp. III 1988). The nature and extent of such rights are often under dispute. *See* Blumm, *supra* note 9, at 244-46.

The original Wilderness Act did not designate any BLM lands as wilderness, and therefore all wilderness reserved rights for BLM lands have priority dates later than 1964. In recent years, Congress has eliminated arguments over the existence of reserved rights for certain wilderness lands by providing specific statutory language either reserving or not reserving water for the reservation. *See e.g.*, The Arizona Desert Wilderness Act of 1990 expressly reserved "a quantity of water sufficient to fulfill the purposes of this title." Act of Nov. 28, 1990, Pub. L. No. 101-628 (1990).

[17] The Wild and Scenic Rivers Act reserves water rights for designated rivers "in quantities . . . necessary to accomplish these purposes." 16 U.S.C. § 1284(c) (1994) ("purposes" referring to the reasons why a particular river is designated as wild, scenic, or recreational under the WSRA). The Interior Department interprets the above statutory provision as reserving a sufficient amount of water to protect the aesthetic, recreational, scientific, biotic, or historic features that led to the river's inclusion in the system. 86 I.D. 553, 608-09 (1979).

[18] 43 U.S.C. § 666 (1994).

[19] *Id*. § 666(a). While the McCarran Amendment contains no explicit reference to "reserved" rights, the Supreme Court has held that such rights are governed by the Amendment. United States v. Dist. Ct. In & For Cty. of Eagle, 401 U.S. 520, 524 (1971). The Amendment also requires the federal government to assert reserved rights in state court when there is a general stream adjudication. *See* United States v. Bell, 724 P.2d 631, 643 (Colo. 1986) (holding that "[t]he doctrine of res judicata bars the United States from re-opening reserved water rights adjudications even where prior claims have not been adjudicated or the United States erroneously has omitted certain claims").

[20] The Amendment extends only to general stream adjudications. Dugan v. Rank, 372 U.S. 609, 618 (1963). In addition, it is possible for a state to establish a comprehensive administrative adjudication process that would suffice as a "suit" under the Amendment, as long as judicial review is available. United States v. Oregon, 44 F.3d 758, 765-67 (9th Cir. 1994).

A number of general stream adjudications are currently moving forward in the Columbia River Basin including the Snake River Basin in Idaho, the Yakima River Basin in Washington, and the entire state of Montana.[21] Federal reserved water rights for BLM lands are being claimed in each of the state adjudications.[22]

(B) BLM Water Rights Claimed Under State Law

The BLM also has water rights in the Columbia River Basin obtained pursuant to state law. The BLM must seek to secure flows for waters traversing through non-reserved public lands in accordance with state law.[23] While western water law under the doctrine of prior appropriation has traditionally frowned on instream flows,[24] recent statutory developments at the state level have provided the federal government with the legal impetus to secure such rights.[25] However, the utility of water rights acquired by the

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[21] Dar Crammond, *Counting Raindrops: Prospects for Northwestern Water Right Adjudications, Appendices* A-D (1996) (a study for the Northwest Water Law and Policy Project).

[22] *See* Crammond, *supra* note 21, at A-16 (BLM made numerous claims in the Snake River Basin adjudication (SBRA) to reserved rights for stock watering claims for springs located in the Big Lost River Basin). *See also* Teresa Rice, *Beyond Reserved Rights: Water Resource Protection for the Public Lands*, 28 IDAHO L. REV. 715, 750 (1992) (noting that federal land management agencies are "actively participating in state adjudications"). The BLM has filed 2,240 water rights claims in the first three test basins of the SBRA. U.S. DEP'T OF THE INTERIOR, BUREAU OF LAND MANAGEMENT, 1996 IDAHO UPDATE (Dec. 1996).

[23] Bureau of Land Management Manual § 7250.06A (1991) (recognizing state sovereignly in the water rights context, and requiring the agency to comply with state law permit procedures to obtain water rights for non-reserved lands).

[24] Western water law's doctrine of prior appropriation is based on the concept of "use it or lose it." Traditionally, only consumptive uses were deemed "beneficial" under state law; water had to be diverted from its source and used out of stream for purposes such as irrigation, livestock, mining, or domestic watering. Under the traditional system, water could not be appropriated for instream flows because such use did not require a diversion and was not recognized as "beneficial" under state water law.

[25] *See* Blumm, *supra* note 9, at 273. Traditionally, many western states have routinely denied applications to secure water rights for instream purposes because such rights could not exist according to state water laws. *Id*. Many states have now amended their water code to allow for instream flows. *See e.g.*, Or. Rev. Stat. §§ 537.332 to 537.360 (1995) (establishing a permit procedure whereby certain state resource agencies may apply to the Oregon Water Resources Department to establish an instream water right). In addition, some prior appropriation states have affirmed federal applications for instream rights even where no specific instream statutory provisions exist. *See* State v. Morros, 766 P.2d 263, 267 (Nev. 1988) (holding that Nevada's definition of beneficial use includes recreation, therefore eliminating the need for a diversion to establish an appropriative right for the BLM to use water under state law).

BLM pursuant to state law is tempered by the relatively late priority date of such rights.[26]

The BLM has actively pursued the establishment of minimum stream flows in Idaho.[27] In addition, the BLM currently tracks state water rights applications and files a protest or objects where the issuance of state permit will have adverse affects on public lands in both Idaho and Montana.[28]

(C) Rights-Of-Way

In certain instances, the BLM is able to use its control over access to certain federal public lands to impose conditions on various water uses. Under the Federal Land Policy and Management Act of 1976[29] (FLPMA), the BLM is authorized to grant or renew rights-of-way over, upon, under, or through public lands for various purposes.[30] FLPMA requires BLM to insert terms and conditions in each right-of-way granted to "minimize damage to scenic and esthetic values and fish and wildlife habitat and otherwise protect the environment," and "require compliance with applicable air and water quality standards."[31] Further, while FLPMA does not explicitly require that right-of-ways adhere to the standards and guidelines established by the corresponding land use plan, the Act and its implementing regulations require the BLM to enforce conditions necessary to manage efficiently right-of-way lands or adjacent lands.[32] Unlike the Forest Service, the BLM has not

[26] Water rights with late priority dates have little significance in many areas of the West where rivers and streams have been over-appropriated for years. However, having a late-priority water right is not without benefits; right holders can protest proposed water transfers that would injure existing rights and assert priority when high streamflow conditions exist.

[27] *See* Rice, *supra* note 22, at 760 (noting attempts by BLM to secure minimum stream flows in Idaho on Badger Creek and Wet Creek, small tributaries of the Lost River Basin). For more on Idaho's minimum streamflow program, see *infra* § 4.1(1)(D).

[28] *See* Rice, *supra* note 22, at 765. BLM district offices in Idaho track state water permit applications where the point of diversion of place of use exists on federal lands. *Id*. at 766. In addition, the BLM has promulgated supplemental manual provisions outlining procedures whereby districts in Montana can formally contest state water right applications that adversely affect BLM programs or lands. *Id*. at 767. *See also* BUREAU OF LAND MANAGEMENT MANUAL SUPPLEMENT, MONTANA STATE OFFICE, §§ 7250.3.32(D), 7250.4.44, 7250.5.54 (1986).

[29] 43 U.S.C. §§ 1710-1784 (1994).

[30] 43 U.S.C. § 1761(a). In regards to water, right-of-ways are granted to access "reservoirs, canals, ditches, flumes, laterals, pipes, pipelines, tunnels, and other facilities and systems for the impoundment, storage, transportation, or distribution of water." *Id*.

[31] 43 U.S.C. § 1765(a).

[32] 43 U.S.C. § 1765(b).

consistently used its authority to impose conditions on the grant or renewal of a right-of-way permit to require by-pass flows necessary to preserve water instream despite the mandatory nature of the FLPMA language.[33]

(2) Fish and Wildlife Protection

(A) The Endangered Species Act

The Endangered Species Act (ESA)[34] protects species listed as either endangered or threatened[35] and imposes substantive duties on the BLM. The BLM must ensure that its activities are not likely to (1) jeopardize the continued existence of listed species or (2) adversely modify the critical habitat of such species.[36] Any proposed action that is likely to jeopardize a listed species or adversely affect its critical habitat requires the BLM to consult with the relevant federal consulting agency,[37]either the United States Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service (NMFS).[38]

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[33] *But see Eugene v. Vogel*; the BLM Oregon office rejected a right-of-way application for a water diversion project in part because it would result in a lack of water for wildlife during the summer. 52 I.B.L.A. 280. The decision was later reversed by a solicitor's opinion. *See* 88 Interior Dec. 258 (1981) (holding that the denial of the right-of-way was unlawful because the applicant had offered to design the project to provide sufficient flows for wildlife). *See also* Rice, *supra* note 22, at 733 (examining BLM right-of-way authorization for a proposed dam on Quail Creek in Utah; the conditions in the right-of-way had to comply with minimum flow levels established by U.S. Fish and Wildlife Service for the endangered woundfin minnow). For a discussion regarding the use of and controversial nature of bypass flows imposed by the Forest Service see *supra* § 2.5(1)(C).

[34] 16 U.S.C. §§ 1531 to 1544 (1994).

[35] The Secretaries of Interior and Commerce make listing determinations. 16 U.S.C. § 1533(a)(1); *see also* 50 C.F.R. pt. 424 (1995). Interested persons may petition the Secretary to list a species. 16 U.S.C. § 1533(b)(3)(A); *see also* 50 C.F.R. § 424.14.

[36] 16 U.S.C. § 1536(a)(2). The Secretaries of Interior and Commerce must designate critical habitat concurrent with the listing of a species. *Id*. § 1533(a)(3)(A); *see also* 50 C.F.R. § 424.12 (criteria for designating critical habitat).

The BLM also has an affirmative obligation under the ESA to take actions to conserve listed species. 16 U.S.C. § 1536(a)(1).

[37] 16 U.S.C. § 1536(a)(2).

[38] USFWS (Department of the Interior) (non-marine species) and NMFS (Department of Commerce) (marine species) are the two federal agencies which share responsibility for administering the ESA. 50 C.F.R. § 402.01(b). *See infra* §§ 2.8(2)(A) (USFWS), 2.7(2)(A) (NMFS) for more on the ESA responsibilities of these "consulting agencies."

Initially, the BLM must inquire whether a listed or proposed[39] species "may be present in the area" of the BLM's proposed activity.[40] If the consulting agency finds that a listed species is present in the area,[41] BLM must prepare a biological assessment (BA).[42] For a proposed species, the BLM need only "confer" with the consulting agency if the action is likely to jeopardize the continued existence of any proposed species or result in the destruction or adverse modification of proposed critical habitat.[43] If the BA shows that the BLM's proposed activity is likely to affect the continued existence of the listed species or adversely affect its critical habitat, formal consultation is required.[44] Formal consultation is required for BLM actions pertaining to the development and implementation of timber management plans,[45] interim strategies detailing timber harvest and land-use allocations,[46] and individual

[39] A "proposed species" is one for which a final listing determination is pending. 50 C.F.R. § 402.02.

[40] 16 U.S.C. § 1536(c)(1); *see also* 50 C.F.R. § 402.12. The BLM may also initiate "early consultation" with a consulting agency if a prospective federal permit applicant "has reason to believe that the prospective action may affect listed species or critical habitat" and requests that the BLM enter into early consultation. 50 C.F.R. § 402.11. Prior to the initiation of early consultation the prospective applicant must certify to the BLM that "(1) it has a definite proposal outlining the action and its effects and (2) it intents to implement its proposal, if authorized. *Id*. § 402.11(b). The procedures and responsibilities for early consultation are similar to those required for formal consultation except that references to the "applicant" are treated as "prospective applicant" and a "preliminary biological opinion" not a biological opinion is issued by the USFWS or NMFS. *Id*. § 402.11(d). For a discussion of the formal consultation requirement, see *infra* notes 44-51 and accompanying text.

[41] The consulting agency must use "the best scientific and commercial data available" in making this determination. 16 U.S.C. § 1536(c)(1).

[42] 16 U.S.C. § 1536(c)(1). The contents of the BA are "at the discretion of" the BLM, depending on the nature of the proposed action. 50 C.F.R. § 402.12(f). However, the BA must be based on "the best available scientific and commercial data available." 16 U.S.C. § 1536(a)(2). The BA must be completed within 180 days or a mutually agreed upon date. *Id*. § 1536(c)(1).

[43] 16 U.S.C. § 1536(a)(4); *see also* 50 C.F.R. § 402.10.

[44] 50 C.F.R. § 402.12(k). Formal consultation regulations for USFWS and NMFS are at 50 C.F.R. § 402.14. The BLM may not "make any irreversible or irretrievable commitment of resources" once formal consultation has begun. 16 U.S.C. § 1536(d); 50 C.F.R. § 402.09. Action agencies such as the Forest Service may also engage in "informal consultation" with a consulting agency to determine whether formal consultation is required. 50 C.F.R. § 402.13. Informal consultation includes all discussions and correspondence between the action and consulting agency. *Id*. § 402.13(a). The consulting agency may suggest modifications to the proposed action that could be implemented to avoid adverse effects to the listed species or corresponding critical habitat. *Id*. § 402.13(b).

[45] Lane County Audubon Soc. v. Jamison, 958 F.2d 290 (9th Cir. 1992).

[46] Lane County Audubon Soc. v. Jamison, 958 F.2d 290, 294 (9th Cir. 1992) (holding that the BLM's temporary "Jamison Strategy"-developed to set short-term timber harvest limits and land use allocations- was similar to a BLM timber management plan and therefore an agency action under the ESA requiring formal consultation).

timber sales.[47] In addition, BLM must reinitiate formal consultation when the agency obtains new information regarding the adverse affects of proposed or on-going projects on a listed species or its habitat.[48]

Formal consultation results in a biological opinion (BiOp) issued by the consulting agency.[49] If the consulting agency concludes that the BLM's proposed action is not likely to jeopardize the species, the agency issues a "no jeopardy BiOp."[50] Conversely, if the consulting agency cannot make this determination, it must issue a "jeopardy BiOp," which may include "reasonable and prudent alternatives" to the proposed action that will avoid jeopardy.[51]

If the BLM relies on and follows the measures specified in the BiOp, it has probably fulfilled its ESA obligations.[52] However, the Ninth Circuit has held that BLM's reliance on a BiOp to satisfy its ESA obligations cannot be arbitrary and capricious.[53] The Ninth Circuit has also ruled that action agencies such as the BLM are not bound by all the details of a BiOp so long as they take alternative, reasonably adequate measures to ensure the continued existence of listed species.[54]

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[47] Lone Rock Timber Co. v. U.S. Dep't of Interior, 842 F.Supp. 433, 437 (D. Or. 1994).

[48] *Id*.

[49] *See* 16 U.S.C. § 1536(b)(3)(A). Content requirements for BiOps are at 50 C.F.R. § 402.14(h). *See also* 50 C.F.R. § 402.14(g) (listing the consulting agencies responsibilities during formal consultation, including: (1) the evaluation of the effects of the proposed action and cumulative effects on the listed species or critical habitat, *id*. § 402.14(g)(3), and (2) the use of "the best scientific and commercial data available," *id*. § 402.14(g)(8)).

[50] 50 C.F.R. § 402.14(h)(3).

[51] 50 C.F.R. § 402.14(h)(3). The consulting agency may also issue a jeopardy BiOp with no reasonable and prudent alternatives. *See id*. (directing that a jeopardy BiOp "shall include reasonable and prudent alternatives, if any").

The BLM may also be required to reinitiate formal consultation with the expert agency when: (1) the BLM retains discretionary control over the action and (2) certain new conditions arise or new information becomes available. 50 C.F.R. § 402.16(a)-(d).

[52] Environmental Coalition of Broward County, Inc. v. Meyers, 831 F.2d 984 (11th Cir. 1987). *See also* 50 C.F.R. § 402.15 (responsibilities of the action agency following issuance of a BiOp).

[53] Pyramid Lake Tribe of Indians v. United States Dep't of the Navy, 898 F.2d 1410, 1415 (9th Cir. 1990) (action agencies may not solely rely on BiOps to establish conclusively that they have satisfied their ESA obligations; a decision to rely on a BiOp must be shown to not be arbitrary and capricious).

[54] Tribal Village of Akutan v. Hodel, 854 F.2d 651, 660-61 (9th Cir. 1988). *But see* American Rivers v. National Marine Fisheries Service, No. 96-384, slip op. at 28-29 (D. Or. April 3, 1997) (distinguishing *Village of Akutan* and rejecting plaintiff's claim that any deviation from the reasonable prudent alternatives provided by NMFS' 1994-1998 Biological Opinion for the Federal Columbia River Power System Operations triggers a duty to come up with other mitigative measures).

The ESA also prohibits the BLM and other federal agencies from "taking" any endangered species.[55] Taking is defined broadly to include harassing or harming species,[56] but incidental take "statements" (similar to permits) that reduce or minimize the take of threatened or endangered species may be issued by the consulting agency.[57]

(3) Environmental Regulation

(A) The National Environmental Policy Act

The National Environmental Policy Act (NEPA)[58] requires the BLM to complete a detailed statement on the environmental impacts of any "major Federal actions significantly affecting the quality of the human environment."[59] This environmental impact statement (EIS) must examine: (1) the environmental impact of the proposed action; (2) any unavoidable adverse environmental effects; (3) alternatives to the proposed action.[60]

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[55] Section 9 of the ESA prohibits all persons (including federal agencies) from the "taking" of any endangered fish and wildlife species. 16 U.S.C. § 1538(a)(1). Federal regulations expand this prohibition to threatened species as well. 50 C.F.R. § 17.31(a).

[56] The ESA defines "take" as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in such conduct. 16 U.S.C. § 1532(19). Federal regulations further define "harm" as any act that actually kills or injures wildlife, including "significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering." 50 C.F.R. § 17.3. This regulation was upheld by the Supreme Court. Babbitt v. Sweet Home Chapter, Communities For A Greater Oregon, 115 S. Ct. 2407 (1995).

[57] An incidental take is a taking that results from, but is not the purpose of, "carrying out an otherwise lawful activity conducted by the Federal agency or applicant." 50 C.F.R. § 402.02. An incidental take requires a permit issued by the consulting agency during formal consultation. *Id*. § 402.14(i). Incidental take permits may be included in a BiOp.

[58] 42 U.S.C. §§ 4321 to 4370d (1994).

[59] 42 U.S.C. § 4332(2)(C). For a discussion of what constitutes a "major federal action," see GEORGE C. COGGINS, 2 PUBLIC NATURAL RESOURCES LAW §§ 10G.03[2] to 10G.04 (1996). There has been much litigation surrounding what is a "major" action, *see id*. § 10G.04, and what is a "federal" action. *Id*. § 10G.03[2] (the key factor in determining whether an action is "federal" is the "agency's authority to influence significant nonfederal activity. . . . [T]he federal agency must possess actual power to control the nonfederal activity") (quoting Sierra Club v. Hodel, 848 F.2d 1068, 1089 (10th Cir. 1988)); *see also* 40 C.F.R. § 1508.18 (1996).

[60] 42 U.S.C. § 4332(2)(C)(i)-(v). The EIS must also examine the short-term use of the environment in relation to the maintenance of long-term productivity and any irreversible and irretrievable commitments of resources. *Id*.

The NEPA process has been further defined by regulations promulgated by the Council on Environmental Quality (CEQ).[61] Initially, the BLM must determine whether an EIS is necessary for a proposed action.[62] Using its own regulations the BLM must determine whether the proposed action normally requires an EIS.[63] BLM actions that normally require an EIS include the approval of (1) resource management plans; (2) proposals for wilderness, wild and scenic rivers, and national historic scenic trails; (3) regional coal leases and sales in a coal production region and a decision to issue a coal preference right lease; (4) steam electric powerplant, petroleum refinery, synfuel plant, and industrial facility sites; (5) rights-of-way for major reservoirs, canals, pipelines, transmission lines, highways, and railroads; and (6) any mining operation where the area to be mined over the

[61] CEQ's NEPA regulations can be found at 40 C.F.R. pt. 1500. The CEQ was created by NEPA. *See* 42 U.S.C. §§ 4341 to 4347. CEQ regulations are entitled to substantial deference regarding NEPA's requirements, Andrus v. Sierra Club, 442 U.S. 347, 358 (1979), and are binding on all federal agencies. 40 C.F.R. § 1500.3 (declaring that 40 C.F.R. pts. 1500 to 1508 are binding on federal agencies). In addition, federal agencies must promulgate their own NEPA regulations to supplement the CEQ regulations. 40 C.F.R. § 1507.3(a). For BLM NEPA regulations, see 57 Fed. Reg. 10913 (1992) (BLM's revised NEPA implementing procedures including BLM categorical exclusions and major agency actions normally requiring an EIS)); and USDOI BUREAU OF LAND MANAGEMENT, NATIONAL ENVIRONMENTAL POLICY ACT HANDBOOK, H-1790-1 (1988) (NEPA procedures not altered by 1992 revisions).

[62] *See* 40 C.F.R. § 1501.4.

[63] *Id*. § 1501.4(a). Certain proposed actions deemed "categorical exclusions" are exempt from the NEPA documentation process; such actions require neither an EA nor an EIS. *Id*. §§ 1508.4, 1501.4(a)(2). CEQ defines categorical exclusion as "a category of actions which do not individually or cumulatively have a significant effect on the human environment and which have been found to have no such effect in procedures adopted by a Federal agency in implementation of these regulations." 40 C.F.R. § 1508.4. The BLM must specify the criteria for any categorical exclusions in its regulations. *Id*. § 1507.3(b)(1), (2). The BLM categorically excludes the following activities from the EA/EIS process: (1) modifying existing fences to provide improved wildlife ingress and egress; (2) approving mineral lease adjustments and transfers; (3) selling or removing individual or small groups of trees that are diseased, injured, or constitute a safety hazard; and (4) approving grazing preference transfers. *See* 57 Fed. Reg. 10918-10919 (1992) (codified at Department of the Interior Manual, 516 DM 6, Appendix 5) (managing the NEPA process; revised instructions for the BLM). For the complete list of BLM categorical exclusions pertaining to BLM activities involving fish and wildlife, fluid minerals, forestry, rangeland management, realty, solid minerals, transportation signs, and miscellaneous actions, see *id*. The Department of the Interior "requires that before any action described in the [list of categorical exclusions] is used, the exceptions must be reviewed for applicability in each case." *Id*.

life of the operation is 640 acres or more.[64] If the activity is one that does not normally require an EIS, the BLM must prepare an environmental assessment (EA).[65]

An EA is a "concise public document" which determines if an EIS is necessary.[66] After the completion of the EA, if the BLM determines that no EIS is required, it issues a finding of no significant impact (FONSI).[67] Otherwise, the BLM must initiate the EIS process.[68]

The first stage of the EIS process involves "scoping."[69] The BLM must ensure through the scoping process that the EIS adequately considers the environmental impacts of the proposed action.[70] An EIS is prepared in two stages--a draft EIS (DEIS) followed by a final EIS (FEIS)-- and may be supplemented as well.[71] Upon completing a DEIS, the BLM must obtain the comments of federal agencies with jurisdiction or special expertise concerning the environmental impacts of the proposed action.[72] The FEIS

[64] *See* 57 Fed. Reg. 10917-10918 (1992) (codified at Department of the Interior Manual, 516 DM 6, Appendix 5) (managing the NEPA process; revised instructions for the BLM).

[65] 40 C.F.R. § 1501.4(b).

[66] 40 C.F.R. § 1508.9. The EA must provide "sufficient evidence and analysis" to determine if an EIS is necessary. *Id*. § 1508.9(a)(1). An EA may also be use to aid in the BLM's compliance with NEPA when no EIS is required. *Id*. § 1508.9(a)(2).

[67] 40 C.F.R. § 1501.4(e). The FONSI must include the EA (or a summary of it) and any other environmental documents related to the EA. *Id*. § 1508.13.

[68] 40 C.F.R. 1501.4(d).

[69] Scoping is an "early and open process" to (1) determine the scope of issues to be addressed and (2) identify the significant issues related to the proposed action. 40 C.F.R. § 1501.7. The BLM must invite affected (1) federal, state, and local agencies; (2) Indian tribes; and (3) interested persons to participate in the scoping process. *Id*. § 1501.7(a)(1).

[70] The BLM must examine three types of actions (connected, cumulative, and similar), three types of alternatives (no action, other reasonable courses of action, and mitigation measures), and three types of impacts (direct, indirect, and cumulative) to determine the scope of the EIS. 40 C.F.R. § 1508.25(a)-(c).

[71] 40 C.F.R. § 1502.9. *See id*. § 1502.9(c) for circumstances which require the BLM to supplement an EIS.

[72] 40 C.F.R. § 1503.1(a)(1). The BLM must also request the comments of appropriate state and local agencies, Indian tribes, the public, and any agency that has requested it be notified of actions similar to that proposed. *Id*. § 1503.1(b).

must respond to the comments,[73] and is the document relied on by the BLM in making its final decision.[74] The BLM's final decision is issued in a record of decision (ROD).[75]

(B) The Clean Water Act

Under section 313 of the federal Clean Water Act (CWA),[76] the BLM must comply with water pollution control and abatement measures established under the CWA.[77] This duty extends to best management practices (BMPs) established by individual states pursuant to water quality management plans (WQMPs) developed as part of the state's in-depth planning process to deal with nonpoint sources of water pollution.[78] In addition, Section 319 of the CWA gives states the authority to review federal financial assistance programs and development projects to ensure consistency with state nonpoint source control measures.[79]

In addition, FLPMA requires that BLM land use plans "provide for compliance with applicable pollution control laws" including the CWA.[80] Each state in the basin has established BMPs to ensure that the adverse

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[73] 40 C.F.R. § 1502.9(b).

[74] CEQ regulations outline the procedures the BLM must follow in its decision making to comply with NEPA. 40 C.F.R. § 1505.1.

[75] 40 C.F.R. § 1505.2. The ROD must contain certain findings: (1) the decision itself; (2) all the alternatives considered (specifying the alternatives which were considered to be "environmentally preferable"); (3) the factors balanced by the agency in making its decision; and (4) whether "all practicable means to avoid or minimize environmental harm from the alternative selected have been adopted, and if not, why they were not." *Id*. § 1505.2(a)-(c). A monitoring and enforcement program for mitigation of the environmental impacts of the decision (if applicable) must also be adopted in the ROD. *Id*. § 1505.2(c). The BLM may also take further future actions to ensure that its decision is implemented. *Id*. § 1505.3.

[76] 33 U.S.C. §§ 1251 to 1387 (1994).

[77] Id. § 1323.

[78] The CWA attempts to regulate nonpoint sources of water pollution through state planning processes. Id. §§ 1288, 1313, 1329. Sections 208 and 303 establish a planning process whereby states develop a program to address nonpoint source pollution; both sections are treated as one planning process by the Environmental Protection Agency (EPA). 40 C.F.R. §§ 130.2(k), 130.6 (1996). For a discussion of state nonpoint source programs and their effect on water pollution occurring on federal lands, see COGGINS & GLICKSMAN, *supra* note 59, at § 11A.03.

Best Management Practices (BMPs) are measures employed to meet nonpoint source needs, including "structural and nonstructural controls and operation and maintenance procedures." 40 C.F.R. § 130.2. States are directed to develop BMP's specifically aimed at alleviating nonpoint source runoff caused by silvicultural and mining projects, activities known to occur on national forest lands. 33 U.S.C. § 1288(b)(2)(F)-(H). *See also* 40 C.F.R. § 130.6(c)(4)(iii)(D)-(E).

[79] 33 U.S.C. § 1329(b)(2)(F).

[80] 43 U.S.C. § 1712(c)(8).

water quality affects of certain activities are limited; activities such as timber harvest and grazing are often primary sources of nonpoint source water pollution on BLM lands.[81] According to reports issued by the states and the Environmental Protection Agency (EPA), approximately 4,713 total stream miles located on BLM administered lands in the Columbia River Basin are water quality impaired.[82]

(4) Land Management

The primary role of the BLM in the Columbia River Basin is that of land manager. The BLM manages "public lands"[83] in the basin lands pursuant to a land use planning process established by the Federal Land Policy and Management Act of 1976 (FLPMA).[84] Further, management authority over certain federal reserves adjacent to and within public land boundaries subject to BLM control is supplemented by specific statutes such as the Wilderness Act of 1964[85] and the Wild and Scenic Rivers Act.[86]

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[81] The CWA grants states the power to designate non-state entities to carry out BMPs established pursuant to the state WQMPs. 33 U.S.C. § 1288(c)(1). *See e.g.*, IDAHO DEPARTMENT OF HEALTH AND WELFARE, DIVISION OF ENVIRONMENTAL QUALITY, 1989 IDAHO NONPOINT SOURCE MANAGEMENT PROGRAM 45 (1989) (noting that the BLM is designated as the primary management agency for the purposes of agricultural (i.e. grazing) BMP enforcement on BLM managed lands in Idaho).

[82] U.S. DEP'T OF AGRICULTURE FOREST SERVICE, U.S. DEP'T OF THE INTERIOR BUREAU OF LAND MANAGEMENT, STATUS OF THE INTERIOR COLUMBIA BASIN: SUMMARY OF SCIENTIFIC FINDINGS 103 (Nov. 1996). The Forest Service and BLM note that state and EPA estimates are based only on "existing and accessible data," and that the results "likely do not reflect the actual extent and distribution of impairment." *Id.* at 101.

[83] FLPMA defines "public lands" as any lands or interest in land "owned by the United States within the several States and administered by the Secretary of the Interior through the Bureau of Land Management." 43 U.S.C. § 1702(e) (1994).

[84] 43 U.S.C. §§ 1701 to 1784 (1994). The organizational scheme of the BLM consists of three primary tiers. COGGINS & GLICKSMAN, *supra* note 57, at § 7.02[2][e]. The national office is located in Washington D.C., and is responsible for setting policy. The middle tier is comprised of twelve state offices, one in each of the western states except Washington. BLM management of federal public lands in Washington proceeds from the Oregon office. The state offices are primarily responsible for overseeing the implementation of the national policies by individual districts within the state, and for reviewing district plans (RMPs). The lower tier is represented by the individual BLM districts located within each state. Each District has a manager; each District is further broken up into resource areas supervised by area managers. In addition to the implementation of BLM management strategies, it is at this District or Area level where most of the RMP development occurs.

[85] 16 U.S.C. §§ 1131-1136 (1994).

[86] 16 U.S.C. §§ 1271-1286 (1994).

(A) BLM Planning Under FLPMA

The BLM manages a wide array of natural resources and authorizes and monitors a large number of activities that effect the public lands located within the Columbia River Basin. FLPMA directs the agency to achieve multiple-use and sustained-yield management of renewable resources such as recreation, range, timber, minerals, watershed, wildlife and fish, and natural scenic, scientific and historical values.[87] To carry out these statutory objectives, the BLM has promulgated regulations concerning minerals management,[88] grazing administration,[89] forest management,[90] wildlife management,[91] recreation programs,[92] and wilderness management.[93] Further, both FLPMA and its implementing regulations govern BLM's sale of public land tracts,[94] withdrawal of lands from the public domain,[95] acquisition of public lands,[96] exchange of public lands,[97] and rights-of-way.[98]

In order to coordinate and streamline agency procedures, and establish a systematic method of achieving various statutory goals and objectives relating to the management and disposition of federal public lands, in 1976 Congress enacted FLPMA which directed the BLM to develop and maintain

[87] 43 U.S.C. § 1702(c).

[88] 43 C.F.R. pts. 3000 to 3870 (oil and gas leasing, geothermal resources leasing, coal management, management of solid materials other than coal, mineral materials disposal, multiple use mining, and mining claims under the general mining laws).

[89] 43 C.F.R. pts. 4100 to 4180 (general grazing administration, qualifications and preferences, grazing management, authorized grazing use, prohibited acts, unauthorized grazing use, administrative remedies, penalties, and fundamentals of rangeland health and standards and guidelines for grazing administration). *See also* FLPMA's statutory provisions covering grazing fees, grazing leases and permits, and grazing advisory boards at 43 U.S.C. §§ 1751 to 1753. For a discussion of recent rangeland reforms instituted by the BLM see *infra* § 2.6(4)(A)(1).

[90] 43 C.F.R. pts. 5000 to 5510 (forest management generally, sales of forest products, and nonsale disposals). For discussion regarding timber management on BLM lands in the Columbia River Basin see *infra* § 2.6(4)(A)(2).

[91] 43 C.F.R. pts. 6220 (this part contains only a purpose section- with no guidelines for the management of wildlife). For discussion regarding BLM obligations to fish and wildlife under the ESA and FLPMA see *supra* § 2.6(2).

[92] 43 C.F.R. pts. 8000 to 8370 (recreation programs, natural history resource management, and recreation management).

[93] 43 C.F.R. pt. 8560.

[94] 43 U.S.C. § 1713; 43 C.F.R. pts. 2710 to 2780.

[95] 43 U.S.C. § 1714; 43 C.F.R. pts. 2300 to 2370.

[96] 43 U.S.C. § 1715; 43 C.F.R. pts. 2100 to 2130.

[97] 43 U.S.C. § 1716; 43 C.F.R. pts. 2200 to 2270.

[98] 43 U.S.C. § 1761; 43 C.F.R. pts. 2800 to 2880.

land use plans.[99] Land use plans developed by the BLM are called Resource Management Plans (RMPs). FLPMA sets forth criteria to which the development of RMPs must adhere, including using multiple-use and sustained-yield principles and an interdisciplinary approach, giving priority to the designation and protection of areas of critical environmental importance (ACECs),[100] and complying with applicable pollution control laws.[101] Federal, state, and local governments and the public must be given an adequate opportunity to participate in the RMP development process.[102]

The BLM planning process involves multiple procedural steps.[103] The agency must first complete a scoping process to identify issues to be addressed during the planning process.[104] The District or Area Manager then (1) develops specific planning criteria to ensure that the planning process is properly tailored to the area where the RPM will apply,[105] (2) assembles resource, environmental, social, economic, and institutional data,[106] and (3) analyzes this data to determine the ability of the resource area to respond to identified planning process issues.[107]

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[99] 43 U.S.C. § 1712. Prior to FLPMA, BLM lands were managed pursuant to Management Framework Plans (MFPs) developed under the 1964 Classification and Multiple Use Act, which expired in 1970. COGGINS & GLICKSMAN, *supra* note 59, at § 10F.04[2]. MFPs remain in place until replaced by Resource Management Plans (RMPs) developed according to the provisions of FLPMA. 43 U.S.C. § 1732(a). *See also* 43 C.F.R. § 1610.5-5 (1995) (the BLM also has the option of amending the MFP). One commentator has emphasized that the importance of MFPs is not purely historical as the BLM has been slow to develop RMPs under FLPMA. COGGINS AND GLICKSMAN, *supra* note 59, at § 10F.04[2].

[100] FLPMA requires the Secretary of the Interior through the BLM to prepare and maintain an inventory of all public lands and their resource values with priority given to ACECs. 43 U.S.C. § 1711(a). The BLM defines an ACEC as an area "where special management attention is required . . . to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources, or other natural systems or processes, or to protect life and safety from natural hazards." 43 C.F.R. § 1601.0-5(a) (1995). For BLM regulations detailing the designation of ACECs, see 43 C.F.R. § 1610.7-2.

[101] 43 U.S.C. § 1712(c). In addition, the BLM must consider present and potential uses of public lands and the relative scarcity of values involved and the alternatives for the realization of such values. *Id*.

[102] 43 U.S.C. § 1712(f). *See also* 43 C.F.R. § 1610.2.

[103] *See* 43 C.F.R. § 1610.4.

[104] 43 C.F.R. § 1610.4-1. This scoping probably satisfies NEPA as well. *See supra* notes 69-70 and accompanying text (discussing the NEPA scoping process).

[105] 43 C.F.R. § 1610.4-2.

[106] 43 C.F.R. § 1610.4-3.

[107] Id. § 1610.4-4. BLM regulations do not require RMPs to conform to goals and objectives defined at the national or state level. Id. § 1610.4-4(b).

Following the data collection and analysis of the management situation, the District or Area Manager formulates alternatives, estimates the physical, biological, economic, and social effects of implementing each alternative, and selects a preferred alternative.[108] The preferred alternative is then included in a draft RMP and EIS which is submitted to the State Director for approval.[109] After evaluating comments received, the District Manager selects the RMP and issues an FEIS.[110] The District Manager is also responsible for the monitoring and evaluation of the RMP.[111]

Once complete, the RMP serves as a programmatic document establishing the goals and objectives to which activities authorized at the district or area level must comply.[112] FLPMA emphasizes the importance of the RMP and the overall planning process to BLM decision-making.[113] While the RMP itself is not subject to review by the Interior Board of Land Appeals (IBLA), lower level plans dealing with particular resources or activities are appealable to the IBLA for compliance with the standards established under the corresponding District RMP.[114] The IBLA has ruled that BLM activities such

[108] 43 C.F.R. §§ 1610.4-5 to 1610.4-7.

[109] *Id*. The draft Plan and EIS are provided for comment to the governor of the state involved, and any other federal, state, or tribal entities that BLM has reason to believe would be interested. *Id*. For a discussion of the BLM's responsibilities under NEPA see *supra* § 2.6(3).

[110] 43 C.F.R. § 1610.4-8. The proposed RMP and FEIS are submitted to the State Director who then either approves the documents or returns them to the District Manager to be amended. *Id*. § 1610.5-1(a).

[111] 43 C.F.R. § 1610.4-9.

[112] 43 U.S.C. § 1732(a) ("The Secretary shall manage the public lands under principles of multiple use and sustained yield, in accordance with the land use plans developed by him . . . when they are available"). *See also* 43 C.F.R. § 1610.5-3(a) ("All future resource management authorizations and actions, as well as budget or other action proposals to higher levels in the Bureau of Land Management and Department, and subsequent more detailed or specific planning, shall conform to the approved plan").

[113] *See* 43 U.S.C. § 1701(a)(1), (2), (7) (planning process mentioned in relation to public land disposal, inventories, and goals and objectives); *id*. § 1712(d) (classification of public lands subject to review in land use planning process); *id*. § 1712(e) (management decisions to implement land use plans); *id*. § 1713(a) (development of criteria for the disposal of public lands in the land use planning process); *id*. § 1715 (land acquisitions by the BLM must be consistent with agency land use plans); *id*. § 1732(a) (general mandate that Secretary manage public lands "in accordance with land use plans developed by him under section 1712 of this title when they are available").

[114] COGGINS & GLICKSMAN, *supra* note 59, at § 10.04[3][c].

as grazing permits,[115] allotment plans,[116] access questions,[117] wildlife reintroduction,[118] recreation regulation,[119] and ACEC management[120] must comply with established RMP guidelines.

Land use planning for BLM lands in the Columbia River Basin has been influenced by recent administrative strategies concerning (1) rangeland reform, (2) the development of standards and guidelines for the management of late-successional and old-growth timber within the range of the northern spotted owl, (3) the development of temporary standards and guidelines for aquatic and riparian habitat relied upon by anadromous fish, and (4) the proposed development and implementation of ecosystem based standards and guidelines to be applied to BLM lands throughout the region.

(1) Rangeland Reform.—In conjunction with the Forest Service, the BLM recently completed Rangeland Reform '94, an FEIS on the future

[115] *See* Joe Saval Co. v. BLM, 119 IBLA 202, 208-09 (1991) (finding that BLM could restrict grazing on a particular allotment permit when such action was based on the policy set forth in the applicable MFP).

[116] *See* Blair v. BLM, 126 IBLA 296, 298 (1993) (upholding BLM decision to reduce area of grazing allotment to implement 1985 amendments to the California Desert Plan).

[117] *See* Gerry Zamora, 125 IBLA 10, 14 (1992) (upholding BLM decision to create Roaring Fork Recreation site because such decision was consistent with valid RMP and "based on a consideration of all relevant factors"); Larry Griffin, 126 IBLA 304, 306-07 (1993) (upholding BLM decision to permanently close portion of access road within the North Cow Mountain Recreation Area pursuant to the agency's Final Recreational Area Management Plan).

[118] *See* Lands of Sierra, Inc., 125 IBLA 15, 20 (1992) (upholding District Manager's decision to reintroduce antelope into the North Eccles Ranch area pursuant to the policies and objectives of the Wells RMP).

[119] *See* Southern Utah Wilderness Alliance, 128 IBLA 382, 382-84 (1994) (upholding BLM visitor and resource management objectives for the Grand Gulch Plataea Cultural and Recreational Management Area as consistent with the San Juan RMP); The Exodus Corp., 126 IBLA 1 (1993) (upholding BLM decision to limit commercial jet-backs on the lower Salmon River pursuant to 1991 amendments to the comprehensive recreation area management plan);

[120] *See* High Desert Multiple-Use Coalition, Inc., 116 IBLA 47 (1990) (BLM designation of certain motor vehicle travel routes must be consistent with use designations under the California Desert Conservation Area Plan).

management of federally-owned rangelands in the West.[121] Congress has failed to enact legislation adopting the suggested changes to rangeland management, but BLM adopted some of the changes called for by the FEIS in regulations promulgated in 1995.[122] Because the validity of these new agency rules is still subject to debate in both Congress[123] and federal court,[124] the ultimate effect of the regulations is still unknown.

Despite the uncertain future of the BLM's new range policies, if fully implemented, the regulations will offer a legitimate change regarding range management on federal lands. The regulations replace grazing boards with rangeland advisory councils (RACs) to advise the BLM regarding the development and implementation of agency land use plans and resource

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[121] USDI BUREAU OF LAND MANAGEMENT AND USDA FOREST SERVICE, RANGELAND REFORM '94, FINAL ENVIRONMENTAL IMPACT STATEMENT (1994). The purpose of the FEIS was to (1) coordinate the BLM and Forest Service rangeland management programs and make each more compatible with ecosystem management, (2) accelerate the restoration and improvement of public rangelands to proper functioning condition, (3) obtain fair value for the public for livestock grazing on public lands, (4) streamline administrative functions, and (5) consider the needs of local communities for open space and their dependence on public lands for livestock grazing. *Id*. at 4.

In order to fulfill these purposes, the FEIS called for increased grazing fees, putting nonranchers on grazing advisory boards, eliminating the preference system, reducing the longevity for permittees who do not make progress, new water rights would be acquired, perfected, maintained, and administered in the name of the United States, surcharging permittees who sublease, and establishing national standards for all permits. *Id*. at 15-19.

It is important to note that not all of the policies listed above, including the grazing fee increase provisions, were adopted by the rules promulgated by the BLM in 1995.

[122] 60 Fed. Reg. 1984 (1995). *See infra* notes 126-131 and accompanying text for a discussion of the rangeland improvement measures adopted by the agency. The Clinton Administration initially delayed the implementation of the new regulations for six months. *Babbitt tosses grazing fee hot potato to Hill; keeps rest*, Public Lands News (Resources Publishing Co., Washington, D.C.), Jan. 5, 1995, at 2-3. However, because Congress failed to complete public lands range reform legislation by August 21, 1995, the BLM proceeded to implement the new administrative grazing policies established via the new rules. *BLM range reform proceeds; Domenici bill stalls in Senate*, Public Lands News (Resources Publishing Co., Washington, D.C.), September 14, 1995, at 4-5.

[123] The 104th Congress failed to pass any range reform legislation, but numerous bills were considered throughout the session, and there is still the possibility that Congress may re-open the debate over future management of public rangelands in 1997. *House has given up on range bill; Senate a long, long shot*, Public Lands News (Resources Publishing Co., Washington, D.C.), October 3, 1996, at 3-4.

[124] *See* Public Lands Council v. Babbitt, 929 F.Supp. 1436 (Dist. Wy. 1996) (holding that the Secretary of the Interior cannot by regulation (1) eliminate grazing preferences, (2) assume title to range improvements paid for by a permittee, (3) allow conservation groups to obtain a permit for the purpose of not grazing livestock, or (4) issue permits to applicants who are not in the livestock business).

management priorities.[125] The regulations also outline more stringent qualifications for permittees and limit the preference policy,[126] denote new grazing management standards,[127] and partially re-define authorized grazing use.[128] For on-the ground activities, the new regulations call for national standards and guidelines to implement the agency's rangeland health program.[129] These standards and guidelines are employed to ensure that watersheds, ecological processes, water quality, and habitat for listed,

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[125] 43 C.F.R. § 1784. Each RAC must be composed of representatives from three groups: (1) holders of grazing permits, interests associated with transportation or rights of way, ORV users, commercial timber, and energy and mineral development; (2) persons representing environmental organizations, dispersed recreational activities, archaeological or historical interests, and wild horse or burro interests; and (3) state, local, and tribal officials, natural resources management or natural science academicians, and representatives of the public-at-large. *Id*. § 1784.6-1(c)(1-3).

RAC members must disclose any interest they have in BLM grazing leases and cannot participate in decisions regarding an issue in which they have an interest. *Id*. § 1784.2-2(b),(c). All decisions by each RAC must be reached by an agreement of a majority of each of the three categories of interest from which appointments are made. *Id*. § 1784.6-1(h).

[126] 43 C.F.R. Subpart 4110. *See also* GOGGINS & GLICKSMAN, *supra* note 59, at § 19.03[4][d][iii] (outlining grazing permittee qualifications and BLM preference policies).

[127] 43 C.F.R. Subpart 4120. The regulations state that each allotment management plan (AMP) must "prescribe the livestock grazing practices necessary to meet specific resource objectives." *Id*. § 4120.2(a)(2). In addition, all range improvements are subject to NEPA and all water rights for public land livestock watering acquired after August, 1995, must be "acquired, perfected, maintained, and administered in the name of the United States" if allowed by state law. *Id*. §§ 4120.3-1(f), 4120.3-9.

[128] 43 C.F.R. Subpart 4130. Each grazing permit must conform with regional or state standards and guidelines established pursuant to Subpart 4180. *Id*. § 4130.3-1(c).

[129] 43 C.F.R. Subpart 4180.2. The BLM state directors in consultation with affected RACs are directed to develop standards and guidelines primarily on a state-by-state basis. *Id*. § 4180.2(a). The standards and guidelines must be completed within 18 months, or "fallback" alternatives will be in force. *Id*. § 4180.2(f). BLM recently proposed to extend for six months the date when fallback federal standards and guidelines would become effective to August 12, 1997. *Notes: Babbitt delays federal grazing standards*, Public Lands News (Resources Publishing Co., Washington, D.C.), September 5, 1996, at 11-12.

The four fallback standards are: (1) upland soils exhibit infiltration and permeability; (2) riparian areas are functioning properly; (3) stream morphology is "appropriate"; and (4) healthy populations of native species are maintained. Id. § 4180.2(f)(1)(i-iv).

The fallback guidelines include management practices necessary to maintain or promote rangeland health including practices that (1) provide adequate amounts of ground cover, soil permeability, sufficient residual vegetation, and proper stream channel morphology; (2) preserve and enhance proper hydrologic, nutrient, and energy cycling; (3) preserve native population communities, ensure complete seed dissemination, and conserve listed and native species; (4) use nonnative species only when necessary; (5) rest pastures and de-emphasize season-long grazing; (6) avoid locating facilities near riparian areas and monitor the ecological development of water resources; and (7) allow grazing on ephemeral ranges only where adverse effects are avoided. *Id*. 4180.2(f)(2)(i)-(xv).

proposed, and candidate species under the ESA as well as other special status species are all fully considered in the BLM's grazing management program.[130]

(2) The Northwest Forest Plan and Timber Salvage Rider.—Unlike the Forest Service, the BLM is not subject to the timber requirements of NFMA. However, in developing BLM timber management plans (TMPs) and authorizing specific timber sales, the agency must comply with the multiple-use and sustained-yield mandate of FLPMA,[131] as well as requirements imposed by NEPA,[132] water pollution standards,[133] and the ESA.[134] In addition, the BLM manages 2.6 million acres of highly productive timber lands in Oregon known as the Oregon and California Railroad grant lands (O & C Lands). Timber harvest on the O & C lands historically has been governed by the Oregon and California Railroad Land Grants Act.[135] The Act directs the BLM to manage the O & C lands specifically for "permanent forest production" consistent with the principle of sustained yield.[136] The management of the timber resource on BLM lands (including O & C lands) in the Columbia River Basin has been drastically affected by the development and implementation of the Northwest Forest Plan.

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[130] 43 C.F.R. § 4180.1.

[131] 43 U.S.C. § 1732(a). FLPMA has no specific timber sale provisions. However, FLPMA does establish a planning process to which subsequent management decisions regarding timber management must adhere. Id. §§ 1712, 1732.

[132] For a discussion of the relationship between BLM authorized activities and NEPA, see *supra* notes 63-65 and accompanying text.

[133] *See supra* § 2.6(3)(B).

[134] *See supra* § 2.6(2).

[135] 43 U.S.C. §§ 1181a - 1181f (1994). The management of timber harvest on the O & C lands must still comply with the general mandates of FLPMA, but a savings clause in section 701 of FLPMA explicitly provides that the O & C Act shall prevail if there is any conflict or inconsistency between the statutes. *Id*. § 1181a (savings provision).

[136] 43 U.S.C. § 1181a. The Ninth Circuit has held that "forest production" means timber production and therefore timber harvest is the dominant use for which O & C Lands should be managed. Headwaters, Inc. v. BLM, Medford District, 914 F.2d 1174, 1183 (9th Cir. 1990).

The Act directs the BLM to return fifty percent of the net revenues generated from O & C lands timber sales to the counties in which the lands are located in the proportion that the total assessed value of the O & C Lands in the county bears to the total assessed value of all of the O & C lands in Oregon. *Id*. § 1181f(a). In addition, the BLM must return an additional twenty-five percent of the net revenues to compensate the counties for the lost property tax revenue that resulted from the revestment of the O & C lands in the federal government. *Id*. § 1181f(b).

The Northwest Forest Plan (Plan)[137] was adopted by a Record of Decision (ROD) issued jointly by the Forest Service and BLM in April 1994.[138] The Plan amended all BLM resource management plans (RMPs) for BLM districts located within the range of the northern spotted owl that have approved RMPs,[139] as well as management framework plans (MFPs) and timber management plans (TMPs) for BLM districts without approved RMPs.[140] The Plan replaced any standards and guidelines in existing land use plans that conflicted with those adopted by the ROD, except where the individual plan was more restrictive or provided greater protection for late-successional forest related species.[141]

The Plan establishes standards and guidelines regulating activity within certain designated land allocation categories, with the impact and severity of such measures varying depending on the type of land designation.[142] For the more than 24 million acres of federal land included in the planning area, the Forest Service and BLM identified seven land allocation categories: (1) congressionally reserved areas; (2) late successional reserves; (3) adaptive management areas (AMAs); (4) managed late successional areas; (5) administratively withdrawn areas; (6) riparian reserves; and (7) matrix lands. [143]

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[137] The Northwest Forest Plan has been variably labeled since its inception as "the President's Plan," "the Clinton Forest Plan," and "Option 9." The official label is now the Northwest Forest Plan.

[138] FOREST SERVICE, U.S. DEPT. OF AGRIC., RECORD OF DECISION FOR AMENDMENTS TO FOREST SERVICE AND BUREAU OF LAND MANAGEMENT PLANNING DOCUMENTS WITHIN THE RANGE OF THE NORTHERN SPOTTED OWL AND STANDARDS AND GUIDELINES FOR MANAGEMENT OF HABITAT FOR LATE-SUCCESSIONAL AND OLD-GROWTH FOREST RELATED SPECIES WITHIN THE RANGE OF THE NORTHERN SPOTTED OWL (1994). [hereinafter SPOTTED OWL ROD]

[139] *Id*. at 11. The King Range National Conservation Area and the Redding and Arcata Resource Areas, all located within the Ukiah District in California, have approved resource management plans. *Id*.

[140] *Id*. The following BLM districts are without RMPs: Coos Bay, Eugene, Medford, Roseburg, Salem, and the Klamath Resource Area of the Lakeview district. *Id*. All districts with draft RMPs and the corresponding DEIS are also supplemented by the Plan. *Id*.

[141] *Id*.

[142] *Id*. at 1.

[143] Congressionally Reserved Areas comprise 7,320,600 acres, 30% of the federal land within the owl's range. *Id*. at 6. These lands have been previously reserved by Congress for specific purposes such as national parks and monuments, wilderness areas, wild and scenic rivers, national wildlife refuges. *Id*.

Late successional reserves comprise 7,430,800 acres, 30% of the owl's range on federal lands. *Id*. These lands are meant to serve as habitat for late-successional and old growth dependent species. *Id*. at A-4, C-9 to C-21. The ROD contemplates limited stand management in such areas so long as approved by the Regional Ecosystem Office. *Id*.

Adaptive management areas constitute 1,521,800 acres, six percent of the federal lands

(continued)

The Northwest Forest Plan also developed and implemented an aquatic conservation strategy (ACS).[144] Designed primarily to protect salmon and steelhead, the ACS has four main components: riparian reserves,[145] key

within the owl's range. *Id*. at 6. The purpose of these areas is to give the federal land management agencies the chance to test new management approaches to achieve a balance of ecological, economic, and social goals. *Id*. at A-4, C-21 to C-22.

Managed late successional areas comprised 102,200 acres under the original plan, only one percent of the federal lands within the range of the owl. *Id*. at 4. Managed late successional areas are similar to late successional reserves except they are located in the drier national forests where fire is a regular occurrence. *Id*. at A-4, C-22 to C-28. Some harvest and salvage of timber is allowed in such areas. *Id*.

Administratively withdrawn areas comprise 1,477,100 acres- six percent of the federal lands within the owl's range. *Id*. at 7. These are areas identified in current forest plans, including recreation/visual areas, back country, and other areas where management prescriptions preclude timber harvest. *Id*. at A-4, C-29.

Riparian reserves comprise 2,627,500 acres, 11% of the federal lands within the owl's range. *Id*. at 7, C-30 to C-38. Riparian reserves "provide an area along all streams, wetlands, ponds, lakes, and unstable and potentially unstable areas where riparian-dependent resources receive primary emphasis." *Id*. at A-5.

Matrix lands comprise 3,975,300 acres, 16% of the federal lands within the owl's range. *Id*. at 7. Most of the timber harvest under the plan occurs in areas designated as matrix that are suitable for such practices. *Id*. at C-39. Timber harvest in the Matrix areas must comply with the requirements of current RMPs when such plans are more stringent. *Id*. at C-45.

For a full review of the BLM and Forest Service NEPA process in selecting the preferred alternative (Option 9) for the Northwest Forest Plan, *see* USDA Forest Service and USDOI Bureau of Land Management, 1 Final Supplemental Environmental Impact Statement on Management of Habitat for Late-Successional and Old Growth Forest Related Species Within the Range of the Northern Spotted Owl (Feb. 1994).

[144] SPOTTED OWL ROD, *supra* note 139, B-11 to B-34.

[145] Riparian reserves are "portions of the landscape were riparian-dependent and stream resources receive primary emphasis and where special standards and guidelines apply." *Id*. at B-12. For such areas, a designated amount of land adjacent to the water is set aside with the specific amount depending on whether the stream or water body is categorized as fish-bearing, permanently flowing nonfish-bearing, a constructed pond, reservoir, or wetland greater than one acre, a lake or natural pond, or a seasonally flowing or intermittent stream, wetland less than an acre, or unstable/potentially unstable area. *Id*. at B-14. In an area designated as a riparian reserve, standards and guidelines disallow programmed timber harvest, and manage roads, grazing, mining, and recreation in accordance with the overall objectives of the ACS. *Id*.

watersheds,[146] watershed analysis,[147] and watershed restoration.[148] The plan applies various standards and guidelines to each of the four components, and ongoing and proposed forest activities as well as other management actions must be based on the "restoration and maintenance criterion" established by the ACS.[149]

Timber management on BLM lands in the Columbia River Basin was further complicated in 1995 when Congress passed an Emergency Appropriations Bill,[150] and attached thereto a "rider" creating the "Emergency Salvage Timber Sale Program."[151] The "salvage rider" directed the Forest Service to allow timber harvest on national forest lands under certain circumstances; timber harvest authorized pursuant to the rider was deemed by Congress to comply with all environmental laws. Specifically, the salvage rider directed both agencies to release timber sales in three instances: strictly salvage

[146] The ROD emphasized that a system of key watersheds that serve as refugia for aquatic species is vital to the conservation and restoration of anadromous fish runs. *Id*. at B-18. Key watersheds under the plan are divided into Tier 1 and Tier 2 categories: Tier 1 key watersheds are identified as directly contributing to anadromous fish and bull trout conservation; Tier 2 key watersheds may or may not have at-risk fish, but are singled out for high water quality. *Id*. In addition, key watersheds are to be given the highest priority for watershed restoration programs, and there are to be no new roads built inside a roadless area and no net increase of roads in non-roadless areas within a key watershed. *Id*. at B-19.

[147] Watershed analysis is required in key watersheds, non-key watersheds with inventoried roadless areas, and riparian reserve areas in order to ascertain whether management of such areas is in accordance with the ACS objectives. *Id*. at B-20. The analysis is a "systematic procedure" whereby watersheds are characterized, and information gleamed from such analysis is used to develop management prescriptions in such areas, institute monitoring programs, refine riparian reserve boundaries, and develop restoration projects. *Id*. at B-21. Watershed analysis is required in key watersheds, required in roadless areas prior to management approved activities, and recommended for all other watersheds. *Id*.

[148] The primary goal of watershed restoration under the plan is to improve fish habitat, riparian habitat, and water quality. *Id*. at B-30. The focus of such programs is the removal or upgrading of roads, the restoration of large conifers in riparian reserves, and the restoration of channel complexity. Id. at B-31.

[149] *Id*. at C-1. For example, where riparian reserves overlap on to other designated areas (e.g., late succession reserves, managed late successional areas, matrix lands), the more restrictive riparian reserve standards and guidelines are added to those provided for the other designations. *Id*. In addition, key watersheds and the standards and guidelines governing activities and management decisions in key watersheds may also overlay any of the land designations. *Id*.

[150] Emergency Supplemental Appropriations for Additional Disaster Assistance, for Anti-Terrorism Initiatives, for Assistance in the Recovery from the Tragedy that Occurred at Oklahoma City, and Recissions Act (Emergency Appropriations Act), Pub. L. No. 104-19, §§ 2001-2002, 109 Stat. 194, 240-47 (1995) (to be codified at 16 U.S.C. § 1611).

[151] Pub. L. No. 104-19, § 2001, 109 Stat. 240.

sales,[152] Option 9 sales,[153] and section 318 sales.[154] The authority granted to the BLM to expedite or re-initiate certain timber contracts under the Salvage Rider expired December 1, 1996.[155]

(3) PACFISH.— Following the development of the Northwest Forest Plan, the BLM and Forest Service designed a temporary strategy to establish interim standards and guidelines to protect anadromous fish habitat. This "Eastside" strategy focused on the aquatic ecosystems that exist on national forest and some BLM lands in the Columbia River Basin east of the Cascades and outside of the geographic range of the northern spotted owl. Titled "Interim Strategies for Managing Anadromous Fish-producing Watersheds in Eastern Oregon and Washington, Idaho, and Portions of California" (PACFISH),[156] PACFISH has affected land management

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[152] The BLM was directed to achieve a salvage timber sale volume above programmed levels (as established by forest LRMPs) during the emergency time period. Id. § 2001(b)(1). In addition, for sales granted pursuant to the salvage provision, the BLM need only prepare one environmental document to satisfy all environmental laws. Id. § 2001(c)(1)(A). The breadth of such documentation is solely up to the discretion of the action agency (Forest Service or BLM), it does not have to consult with other federal agencies. Idaho Conservation League v. Thomas, 917 F.Supp. 1458, 1464, (Dist. Idaho 1995), *aff'd*, 91 F.3d 1345, 1349-50 (9th Cir. 1996).

[153] Option 9 was the selected alternative for the Northwest Forest Plan. The Salvage Rider called for expedited procedures for the award of timber sales within the geographic range covered by the Northwest Forest Plan, and specifically exempted such sales from all court orders and environmental laws. Pub. L. 104-19, § 2001(d), 109 Stat. 244. One district court analyzed the § 2001(d) language and agreed that the Salvage Rider exempts all Option 9 sales from compliance with environmental laws. Oregon Natural Resources Council v. Thomas, No. 95-6272-HO, slip op. at 7 (D. Or. Dec. 4, 1995), *aff'd*, 92 F.3d 792, 796 (9th Cir. 1996).

[154] This section refers to "all timber sale contracts offered or awarded in any unit of the national forest system or district of the BLM subject to Section 318 . . ." prior to the enactment of the 1995 Salvage Rider. Pub. L. 104-19, § 2001(k)(1), 109 Stat. 246. An Oregon District Court has held that the Act did in fact commission the release of all "offered" sales between 1989 and 1995. Northwest Forest Resources Council v. Glickman, No. 95-6244-HO, slip op. at 24 (D. Or Jan. 10, 1995), *aff'd*, 82 F.3d 825 (9th Cir. 1996). In addition, the court held that the term "offered" did not exclude canceled and enjoined sales. *Id*. at 13-19.

[155] Proposed extensions or modifications of the salvage rider were considered by Congress in 1996. *See Forest amendments may dominate money bill on Senate floor*, Public Lands News (Resources Publishing Co., Washington D.C.), September 19, 1996, at 1-2; *Permanent Salvage Rider faces first test in Senate panel*, Public Lands News (Resources Publishing Co., Washington D.C.), May 2, 1996, at 5-6.

[156] USDA FOREST SERVICE AND USDI BUREAU OF LAND MANAGEMENT, DECISION NOTICE/DECISION RECORD, FINDING OF NO SIGNIFICANT IMPACT, FOR THE INTERIM STRATEGIES FOR MANAGING ANADROMOUS FISH-PRODUCING WATERSHEDS IN EASTERN OREGON AND WASHINGTON, IDAHO, AND PORTIONS OF CALIFORNIA (Feb. 1995). Together, PACFISH and the Northern Spotted Owl FSEIS "provide an aquatic and riparian management strategy for all

decisions in five BLM districts within the Columbia River Basin in Idaho (Coeur d'Alene and Salmon), Oregon (Prineville and Vale), and Washington (Spokane).[157]

The PACFISH strategy amended existing BLM district RMPs or MFPs to add new riparian goals,[158] interim Riparian Management Objectives (RMOs),[159] and more stringent standards and guidelines to be applied to projects and activities within Riparian Habitat Conservation Areas (RHCAs).[160] The new standards and guidelines apply to proposed and on-going projects existing only in the RHCAs.[161] The standards and guidelines in current RMPs and MFPs govern activities that occur, or are proposed to occur, outside of the designated RHCAs.[162] In addition, PACFISH calls for the designation of key watersheds that receive priority for watershed

anadromous fish habitat in the contiguous United States." USDA FOREST SERVICE AND USDI (continued)
BUREAU OF LAND MANAGEMENT, ENVIRONMENTAL ASSESSMENT FOR THE INTERIM STRATEGIES FOR MANAGING ANADROMOUS FISH-PRODUCING WATERSHEDS IN EASTERN OREGON AND WASHINGTON, IDAHO, AND PORTIONS OF CALIFORNIA 12 (Feb. 1995)[hereinafter PACFISH EA].

[157] *Id*. at 12. Prior to PACFISH, the BLM developed the "Riparian-Wetland Initiative for the 1990's," a plan to restore and maintain the 23 million acres of economically and environmentally valuable wetland and riparian areas on BLM-managed lands. USDOI BUREAU OF LAND MANAGEMENT, RIPARIAN-WETLAND INITIATIVE FOR THE 1990'S 1 (Sept. 1991). However, unlike PACFISH which formally established and imposed specific standards and guidelines that amended existing BLM land use plans, the goals of the Riparian-Wetland Initiative were to be achieved through cooperative efforts with public land users and conservation groups, with actions taken at the local field level. USDI BUREAU OF LAND MANAGEMENT, MANAGING THE NATION'S PUBLIC LANDS: 1992 ANNUAL REPORT OF THE DEPARTMENT OF INTERIOR'S BUREAU OF LAND MANAGEMENT 3-4 (1993).

[158] Riparian goals "establish a common set of characteristics of healthy, functioning watersheds, riparian areas, and associated fish habitats." PACFISH EA *supra* note 157, at 16. The focus of such goals is to restore and maintain water quality, stream integrity, channel processes, sediment regime, instream flows, natural timing and the variability of the water table elevation in meadows and wetlands, and the diversity and productivity of native and desired non-native plant, vertebrate, and invertebrate communities. *Id*.

[159] RMOs establish "measurable habitat parameters" that define good anadromous fish habitat and provide an indicator of progress towards attainment of goals. *Id*. RMOs include the number of deep pools per mile of stream, water temperature, width-to-depth ratio, the amount of woody debris in forested ecosystems, and stream bank stability and lower bank angle in non-forested ecosystems. *Id*.

[160] Standards and guidelines under PACFISH focus on the management of timber, roads, grazing, recreation, minerals, fire and fuels, general riparian areas, and land uses governed by leases, permits, rights-of-way, and easements. *Id*. RHCAs identify those areas within a particular watershed that are most sensitive to management. *Id*.

[161] *Id*.

[162] *Id*.

analysis and restoration projects and the development of a watershed analysis program used to identify areas in need of immediate corrective management.[163]

Unlike the Northwest Forest Plan discussed above, PACFISH is temporary, intended to provide "interim" direction for the management of riparian habitat on certain national forest and BLM lands. PACFISH was issued as a non-significant amendment to existing land use plans primarily because of its interim nature.[164]

(4) The Interior Columbia Basin Ecosystem Management Project.—Long-term management direction for BLM districts and national forests east of the Cascades in Washington, Oregon, Idaho, Montana, and small portions of Nevada, Utah, and Wyoming is forthcoming in the form of two major EISs referred to collectively as the Interior Columbia Basin Ecosystem Management Project.[165] If adopted, these plans will serve as a "blueprint" for the future management of over 75 million acres of Forest Service and BLM lands within the Columbia Basin by amending current Forest Service and BLM land use plans with ecosystem-based direction at the regional (State) and sub-regional (District) level, and replacing the standards and guidelines established by PACFISH with long-term devices to protect aquatic resources.[166]

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[163] RHCAs within a key watershed include a larger area than non-key watersheds. *Id*. Findings pursuant to watershed analysis provide the basis for adjustments to interim RMOs and RHCAs. *Id*.

[164] PACFISH is described as "a short-term effort to preserve or initiate improvement in the environmental status quo while the Agencies develop and evaluate a longer-term policy." *Id*. at 12.

[165] The entire project is broken into two major plans: (1) the Eastside EIS, which includes all national forests and BLM districts in Washington and Oregon and the Nez Perce and Payette National Forest in Idaho; and (2) the Upper Columbia River EIS, which includes the remaining national forests and BLM districts in Idaho, and certain forests and districts in Montana, Nevada, Utah, and Wyoming. USDA Forest Service and USDOI Bureau of Land Management, The Leading Edge: Newsletter of the Interior Columbia Basin Ecosystem Management Project (Oct. 31, 1996).

The Forest Service and BLM released the scientific framework and assessment that accompanied the project in the fall of 1996; the draft environmental impact statements (DEIS) were release in May, 1997, and the final environmental impact statements (FEIS) and records of decision are scheduled for release in the fall of 1997. *Id*.

[166] USDA Forest Service and USDOI bureau of land management, Considering All Things: Interior Columbia Basin Ecosystem Management Project, Executive Summary 6 (1996). The BLM and Forest Service stress that BLM district and national forest plans must be amended in the Columbia River Basin because of declining salmon runs, costly wildfires, pest out-breaks, runaway noxious weeds, declining soil fertility, legal challenges, and unpredictable resource flow. *Id*.

(B) BLM Planning: Wilderness Areas

The Wilderness Act of 1964[167] charges that the federal agency in charge of managing a particular wilderness tract "be responsible for preserving the wilderness character" of such lands.[168] The BLM has promulgated regulations implementing the Wilderness Act's substantive requirements.[169] Both the Act and the implementing regulations restrict or disallow the following activities in wilderness areas, subject to valid existing rights: mining, motorized equipment, and grazing.[170] The BLM also manages "wilderness study areas" pursuant to a FLPMA directive requiring the agency to review all roadless areas of 5,000 acres or more identified in inventories as having wilderness characteristics.[171] The BLM manages 195 wilderness study areas totaling approximately 4.5 million acres in Idaho, Montana, Oregon, and Washington.[172]

(C) BLM Planning: Wild & Scenic River Corridors

The BLM is responsible for the management of rivers designated pursuant to the Wild and Scenic Rivers Act (WSRA).[173] The agency has three primary duties under the Act. First, it is responsible for classifying each river

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[167] 16 U.S.C. §§ 1131 to 1136 (1994).

[168] *Id*. § 1133(b). Management authority over a particular wilderness area lies with whichever federal department or agency had jurisdiction over the designated lands prior to the wilderness designation. *Id*.

[169] 43 C.F.R. pt. 8560.

[170] 16 U.S.C. §§ 1133(a)-(d); *See also* 43 C.F.R. §§ 8560.1-1 to 8560.4-8.

[171] 43 U.S.C. § 1782(a). While the BLM is reviewing the status of such lands or until Congress acts, BLM must continue to manage wilderness study areas "so as not to impair the suitability of such areas for preservation as wilderness, subject, however, to the continuation of existing mining and grazing uses and mineral leasing in the manner and degree in which the same was being conducted on October 21, 1976." *Id*. § 1782(c).

[172] USDOI BUREAU OF LAND MANAGEMENT, 1993 PUBLIC LAND STATISTICS 58 (Sept. 1994). The numbers and acreage cited are based on BLM computations for all the public lands in the four Basin states; therefore, some of the wilderness study areas in Montana and Oregon may lie outside the boundaries of the Columbia River Basin.

[173] 16 U.S.C. §§ 1271 to 1286 (1994). *See id*. § 1274(d). Pursuant to the 1986 Amendments to the Act, the BLM must develop a "comprehensive management plan" for rivers designated after January 1, 1986. *Id*. In addition, the BLM must review within ten years plans developed for rivers designated prior to January 1, 1986, to ensure conformity with new management requirements. Id. § 1274(d)(2). *See* Wilderness Soc'y v. Tyrrel, 918 F.2d 813 (9th Cir. 1990).

designated under the Act that falls within its management authority.[174] Second, the BLM is authorized to condemn and purchase lands within the designated river corridor.[175] Third, the agency must develop a "comprehensive management plan" for each particular river designated under the Act, to ensure "the protection of the river values."[176] BLM has regulations governing the restriction or closure of lands or water surfaces administered by the agency when necessary to carry out the purposes of the WSRA.[177]

[174] 16 U.S.C. § 1274(b). The authority to manage a particular section of river is generally granted by the Act which formally adds the river to the wild and scenic river system. *See e.g.*, Certain segments and major tributaries of Oregon's Donner Und Blitzen River are "to be administered by the Secretary of the Interior" (BLM). *Id*. § 1274(a)(70).

The BLM must classify a designated river under its control as wild, scenic, or recreational. *Id*. § 1273. To be classified as "wild" under the Act a river must be "free of impoundments and generally inaccessible except by trail, with watershed or shorelines essentially primitive and waters unpolluted . . . representing vestiges of primitive America." *Id*. § 1273(b)(1). A "scenic" river is one "free of impoundments, with shorelines and watersheds still largely primitive and undeveloped, but accessible in places by roads." *Id*. § 1273(b)(2). "Recreational" rivers are those that "are readily accessible by road or railroad, that may have some development along their shorelines, and that may have undergone some impoundment or diversion in the past." *Id*. § 1273(b)(3).

[175] 16 U.S.C. § 1277. Designated river corridors can include private lands, but agency management prescriptions do not apply to such lands. *Id*. § 1283(b). Therefore, the Act grants limited authority to land management agencies to acquire lands within a corridor. The BLM may purchase easements up to an average of 100 acres per mile and/or condemn private property except where more than fifty percent of the land in the corridor is already publicly owned (federal, state, or local ownership). *Id*. For a discussion of some of the problems associated with the "checkerboarded" land ownership scheme within designated river corridors, see COGGINS AND GLICKSMAN, *supra* note 59, at § 15.04[1][b].

[176] 16 U.S.C. § 1274(d)(1). Each designated river corridor must be managed to protect and enhance the values for which it was designated, and other authorized activities cannot substantially interfere with such values. *Id*. § 1281(a). Each individual river plan emphasizes both the values for which a particular river was designated, and what activities would substantially interfere with those values. *Id*. The Act specifically requires the BLM to manage adjacent lands to carry out the purposes of each designated river, and directs the agency to cooperate with the EPA and appropriate state water pollution control agencies. *Id*. § 1283(a),(c). In addition, the Act has specific provisions governing water development projects and mineral development. *Id*. §§ 1278, 1280.

[177] 43 C.F.R. § 8351.2.

2.7 The National Marine Fisheries Service

The National Marine Fisheries Service (NMFS), part of the National Oceanic and Atmospheric Administration in the Department of Commerce, is responsible for protecting marine mammals and anadromous fish in the Columbia River Basin. NMFS's authority derives from such acts as the Endangered Species Act, the Mitchell Act, and the Northwest Power Act.

(1) Water Management

(A) The Federal Columbia River Power System

The Endangered Species Act (the ESA) requires biological consultation with NMFS concerning all federal activities which adversely affect listed salmon species; therefore, certain measures contained in the 1995 NMFS biological opinion (BiOp) address the operation of the Federal Columbia River Power System (the FCRPS) by the Corps, the Bureau, and BPA.[1] While these agencies have the ultimate responsibility to satisfy the mandates of the ESA, the BiOp enumerates several measures that NMFS determined necessary to avoid jeopardizing the existence of endangered Snake River salmon in the Columbia River Basin. The 1994-98 NMFS BiOp called for protective measures such as increased flows, reservoir drawdowns, spill at mainstem dams, the continued transportation of juvenile fish, and other in-river improvements.[2]

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[1] The FCRPS consists of the 14 federal dams on the mainstem Columbia and Snake Rivers. U.S. ARMY CORPS OF ENGINEERS, NORTH PACIFIC DIV. ET AL., COLUMBIA RIVER SYSTEM OPERATION REVIEW: FINAL ENVIRONMENTAL IMPACT STATEMENT, SUMMARY 2, 46 (Nov. 1995)[hereinafter SOR SUMMARY](12 are operated by the Corps and two by the Bureau, while BPA markets the hydropower generated at these federal dams.

[2] *See infra* § 2.7(2)(A) for more on the ESA and the 1995 NMFS BiOp.

(2) Fish and Wildlife Protection

(A) The Endangered Species Act

The Endangered Species Act (the ESA)[3] protects species[4] listed as either endangered or threatened and imposes substantive duties on NMFS. NMFS's responsibilities under the ESA include the listing of species, designating critical habitat for listed species, developing recovery plans, and consulting with federal agencies regarding activities that affect listed species.

The Secretaries of Interior and Commerce make listing determinations.[5] The Interior Secretary's ESA duties are carried out by the U.S. Fish and Wildlife Service, while those of the Secretary of Commerce are administered by NMFS.[6] Interested persons may also petition either Secretary to list a species.[7] After receiving a petition from an interested party, or upon the initiative of the Secretary, NMFS reviews the status of a candidate species to determine if the species merits listing. This determination is made using the "best scientific and commercial data available."[8] If NMFS finds a species qualifies for listing, it must publish a proposed regulation in the Federal Register indicating its conclusion.[9]

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[3] 16 U.S.C. §§ 1531 to 1544 (1994).

[4] The ESA defines "species" to include any "distinct population segments" of any species of vertebrate fish or wildlife that interbreeds when mature. 16 U.S.C. § 1532(16). For Pacific salmon in the Columbia River Basin, NMFS further requires a distinct population segment to constitute an "evolutionary significant unit" (ESU). Policy on Applying the Definition of Species Under the Endangered Species Act to Pacific Salmon, 56 Fed. Reg. 58,612 (1991). In order for a specific stock of Pacific salmon to constitute an ESU, it must (1) be "substantially reproductively isolated from other nonspecific population units" and (2) represent an important component "in the evolutionary legacy of the species." *Id.*

[5] 16 U.S.C. § 1533(a)(1); *see also* 50 C.F.R. pt. 424 (1995).

[6] USFWS (Department of the Interior)(non marine species) and NMFS (Department of Commerce)(marine species) share responsibility for administering the ESA. 50 C.F.R. § 402.01(b). *See infra* § 2.8(2)(A) for the USFWS's ESA responsibilities and activities.

[7] 16 U.S.C. § 1533(b)(3)(A); *see also* 50 C.F.R. § 424.14.

[8] 16 U.S.C. § 1533(b)(1)(A).

[9] 16 U.S.C. § 1533(b)(5)(A)(i). NMFS may list a species based on any of the following factors: (1) present or threatened destruction, modification, or curtailment of the species' habitat or range; (2) overutilization for commercial, recreational, scientific, or educational purposes; (3) disease or predation; (4) inadequacy of existing regulatory mechanisms; and (5) other natural or manmade factors affecting the species' continued existence. *Id.* §§ 1533(a)(1)(A)-(E). After conducting review of the species, NMFS may also take into account "those efforts, if any, being made by any state or foreign nation" to protect the species. *Id.* § 1533(b)(1)(A).

In 1991 and 1992, NMFS listed three species of Snake River salmon: sockeye,[10] spring/summer chinook, and fall chinook.[11] In 1993 and 1994 NMFS denied petitions to list mid-Columbia River summer chinook salmon[12] and the lower Columbia coho salmon.[13]

Concurrent with the listing of a species, NMFS must also designate critical habitat for the listed species "to the maximum extent prudent and determinable."[14] Designation of critical habitat must be made on the basis of the "best scientific data available," and "after taking into consideration the economic impact, and any other relevant impact" of designating the particular area as critical habitat.[15] The Secretary may exclude any area from critical habitat if she decides that the benefits of exclusion outweigh the benefits of inclusion—so long as the failure to designate the area as critical habitat does not result in the extinction of the species.[16] In the case of three listed Snake River salmon species, NMFS designated the river reaches of the Columbia, Snake, and Salmon (in Idaho) Rivers as critical habitat.[17]

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[10] Endangered and Threatened Species; Endangered Status for Snake River Sockeye Salmon, 56 Fed. Reg. 58,619 (1991).

[11] These two species were originally listed as threatened. Endangered and Threatened Species; Threatened Status for Snake River Spring/Summer Chinook Salmon, Threatened Status for Snake River Fall Chinook. 57 Fed. Reg. 14,653 (1992). They were later upgraded to endangered in 1994. Endangered and Threatened Species; Status of Snake River Spring/Summer Chinook Salmon and Snake River Fall Chinook Salmon, 59 Fed. Reg. 42,529 (1994) (emergency interim rule); Endangered and Threatened Wildlife and Plants; Emergency Reclassification of the Snake River Spring/Summer Chinook Salmon and the Snake River Fall Chinook Salmon from Threatened to Endangered Status, 59 Fed. Reg. 54,840 (1994) (emergency rule).

[12] Endangered and Threatened Species; Mid-Columbia River Summer Chinook Salmon, 59 Fed. Reg. 48,855 (1994) (denying listing because the species did not meet NMFS's ESU requirement).

[13] Endangered and Threatened Species; Lower Columbia River Coho Salmon, 56 Fed. Reg. 29,553 (1993) (denying listing because the species did not meet NMFS's ESU requirement).

[14] 16 U.S.C. § 1533(a)(3). Critical habitat is defined as: (1) the specific areas within the geographical area occupied by the species on which are found physical or biological features "essential to the conservation of the species" and which may require "special management considerations or protection" and (2) areas outside the geographical area occupied by the species, upon determination by the Secretary that such areas are "essential for the conservation of the species." *Id*. §§ 1532(5)(A)(i)-(ii).

[15] 16 U.S.C. § 1533(b)(2).

[16] 16 U.S.C. § 1533(b)(2).

[17] Designated Critical Habitat; Snake River Sockeye Salmon, Snake River Spring/Summer Chinook Salmon, and Snake River Fall Chinook Salmon, 58 Fed. Reg. 68,543 (1993). The designated habitat for the sockeye consists of river reaches of the Columbia, Snake, and Salmon rivers, Alturas Lake Creek, Valley Creek, and Stanley, Redfish, Yellow Belly, Pettit, and Alturas Lakes. *Id*.; *see also id*. at 68,546. Designated habitat for

The Secretary must also develop and implement recovery plans for the "conservation and survival" of listed species, unless she finds that a recovery plan "will not promote the conservation of the species."[18] In developing recovery plans, the Secretary must give priority to listed species which are most likely to benefit from such plans.[19] The Secretary may create "recovery teams" to develop and implement recovery plans.[20] Recovery teams may be comprised of appropriate public and private agencies and institutions, and other qualified persons.[21] The Secretary must provide public notice and an opportunity for public comment prior to final approval of a recovery plan.[22]

(continued)

spring/summer chinook consists of river reaches of the Columbia, Snake, and Salmon Rivers, all tributaries of the Snake and Salmon Rivers (except the Clearwater River) "presently or historically accessible" to spring/summer chinook (except reaches above "impassible natural falls" and Hells Canyon Dam). *Id*. Critical habitat for fall chinook consists of river reaches of the Columbia, Snake, and Salmon Rivers, and all tributaries of the Snake and Salmon Rivers (except reaches above impassible natural falls and Dworshak and Hells Canyon Dams). *Id*.

[18] 16 U.S.C. § 1533(f)(1). There is some dispute over the enforceability of recovery plans. Commentators have argued that recovery plans are enforceable. *See* DANIEL J. ROHLF, THE ENDANGERED SPECIES ACT 88 (1989) (arguing that "[d]efining agencies' conservation duties by what is set forth in recovery plans would free the courts from sticky problems of attempting to interpret the scope of the ESA's conservation mandate on a case-by-case basis"); Oliver A. Houck, *The Endangered Species Act and Its Implementation by the U.S. Departments of Interior and Commerce*, 64 U. COLO. L. REV. 277, 350 (1993)(arguing that ". . . . since section 7(a)(1) of the ESA requires all federal agencies to "conserve" endangered wildlife species, and that since the ESA defines "conservation" in terms of species recovery, recovery plan elements are powerful limits, if not mandates"). However, federal courts have upheld federal agency actions contrary to specific recovery plan requirements. *See* National Wildlife Federation v. National Park Service, 669 F.Supp. 384, 388-9 (D. Wyo. 1987) (in upholding a decision by the National Park Service to keep open a campground despite contrary recovery plan requirements, the court noted that ". . . .the Secretary is required to develop a recovery plan only insofar as he reasonably believes that it would promote conservation. . . . The court will not attempt to second guess the Secretary's motives for not following the recovery plan"); National Audubon Society v. Hester, 801 F.2d 405 (D.C. Cir. 1986) (upholding decision of the FWS to place all surviving wild condors in a captive breeding program in contravention of the agency's condor recovery plan).

[19] 16 U.S.C. § 1533(f)(1)(A). In addition, each recovery plan must include: (1) a description of site-specific management decisions necessary to ensure the conservation and survival of the species; (2) objective and measurable criteria which, if met, will result in the species being removed from the list; and (3) estimates of the time and cost required to carry out the recovery plan. *Id*. § 1533(f)(1)(B).

[20] 16 U.S.C. § 1533(f)(2).

[21] 16 U.S.C. § 1533(f)(2).

[22] 16 U.S.C. § 1533(f)(4).

NMFS released a proposed recovery plan for the endangered Snake River salmon in 1995,[23] but a final recovery plan had not been issued as of the spring of 1997.

Federal agencies must also consult with NMFS to ensure that their activities are not likely to (1) jeopardize the continued existence of listed species or (2) adversely modify the critical habitat of such species.[24] Any proposed action that is likely to jeopardize a listed species or adversely affect its critical habitat requires the federal agency (or "action agency") to consult with NMFS.[25]

Initially, the action agency must inquire whether a listed or proposed[26] species "may be present in the area" of the proposed activity.[27] If NMFS finds that a listed species is present in the area,[28] the action agency must prepare a

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[23] NATIONAL MARINE FISHERIES SERV., U.S. DEP'T OF COMMERCE, PROPOSED RECOVERY PLAN FOR SNAKE RIVER SALMON (Mar. 1995). The proposed recovery plan calls for improvements in the Basin's tributary ecosystem, including: (1) restoring salmon habitat, (2) improving land management to benefit listed salmon, (3) providing "adequate instream flows" to protect salmon, (4) improving fish passage, and (5) improving water quality. *See* NATIONAL MARINE FISHERIES SERV., U.S. DEP'T OF COMMERCE, PROPOSED RECOVERY PLAN FOR SNAKE RIVER SALMON: SUMMARY 15-16 (Mar. 1995). Improvements to increase juvenile salmon survival rates on the mainstem include: (1) flow augmentation and improved water management, (2) increased spill at dams, (3) improved bypass facilities at dams, (4) improved transportation, and (5) reservoir drawdowns. *Id*. at 17-20 (however, drawdowns specifically called for in the proposed recovery plan did not exceed MOP level). Structural and operational improvements on the mainstem to reduce the loss of adult salmon were also enumerated in the proposed recovery plan. *Id*. at 20. Other measures included reducing predation and competition, modifying salmon harvest, and hatchery measures. *Id*. at 21-25.

[24] 16 U.S.C. § 1536(a)(2).

[25] 16 U.S.C. § 1536(a)(2).

[26] A "proposed species" is one for which a final listing determination is pending. 50 C.F.R. § 402.02.

[27] 16 U.S.C. § 1536(c)(1); *see also* 50 C.F.R. § 402.12. The action agency may also initiate "early consultation" with NMFS if a prospective permit applicant "has reason to believe that the prospective action may affect listed species or critical habitat" and requests that the action agency enter into early consultation. 50 C.F.R. § 402.11. Prior to the initiation of early consultation the prospective applicant must certify to the action agency that "(1) it has a definite proposal outlining the action and its effects and (2) it intends to implement its proposal, if authorized. *Id*. § 402.11(b). The procedures and responsibilities for early consultation are similar to those required for formal consultation except that references to the "applicant" are treated as "prospective applicant" and a "preliminary biological opinion" not a biological opinion is issued by NMFS. *Id*. § 402.11(d). For a discussion of the formal consultation requirement see *infra* notes 30-33 and accompanying text.

[28] The consulting agency must use "the best scientific and commercial data available" in making this determination. 16 U.S.C. § 1536(c)(1).

biological assessment (BA).[29] For a proposed species, the action agency need only "confer" with NMFS if the action is likely to jeopardize the continued existence of any proposed species or result in the destruction or adverse modification of proposed critical habitat. If the BA shows that the action agency's proposed activity is likely to affect the continued existence of the listed species or adversely affect its critical habitat, formal consultation is required.[30]

Formal consultation results in a biological opinion (BiOp) issued by NMFS[31] If NMFS concludes that the action agency's proposed action is not likely to jeopardize the species, it issues a "no jeopardy BiOp."[32] Conversely, if NMFS cannot make this determination, it must issue a "jeopardy BiOp," which may include "reasonable and prudent alternatives" to the proposed action that will avoid jeopardy.[33]

If the action agency relies on and follows the measures specified in the BiOp, it has probably fulfilled its ESA obligations.[34] However, the Ninth Circuit

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[29] 16 U.S.C. § 1536(c)(1). The contents of the BA are "at the discretion of" the action agency, depending on the nature of the proposed action. 50 C.F.R. § 402.12(f). However, the BA must be based on "the best available scientific and commercial data available." 16 U.S.C. § 1536(a)(2). The BA must be completed within 180 days or a mutually agreed upon date. *Id*. § 1536(c)(1).

[30] 50 C.F.R. § 402.12(k). Formal consultation regulations for NMFS and the USFWS are at 50 C.F.R. § 402.14. The action agency may not "make any irreversible or irretrievable commitment of resources" once formal consultation has begun. 16 U.S.C. § 1536(d); 50 C.F.R. § 402.09.

Action agencies may also engage in "informal consultation" with expert agencies to determine whether formal consultation is required. 50 C.F.R. § 402.13. Informal consultation includes all discussions and correspondence between the action and expert agencies. *Id*. § 402.13(a). The expert agency may suggest modifications to the proposed action that could be implemented to avoid adverse effects to the listed species or corresponding critical habitat. *Id*. § 402.13(b).

[31] *See* 16 U.S.C. § 1536(b)(3)(A). Content requirements for BiOps are at 50 C.F.R. § 402.14(h). *See also* 50 C.F.R. § 402.14(g) (listing the expert agencies' responsibilities during formal consultation, including: (1) the evaluation of the effects of the proposed action and cumulative effects on the listed species or critical habitat, *id*. § 402.14(g)(3), and (2) the use of "the best scientific and commercial data available." *Id*. § 402.14(g)(8)).

[32] 50 C.F.R. § 402.14(h)(3).

[33] 50 C.F.R. § 402.14(h)(3). NMFS can also issue a jeopardy BiOp with no reasonable and prudent alternatives. *See id*. (directing that a jeopardy BiOp "shall include reasonable and prudent alternatives, if any"). The action agency may be required to reinitiate formal consultation with the expert agency when: (1) the action agency retains discretionary control over the action and (2) certain new conditions arise or new information becomes available. 50 C.F.R. §§ 402.16(a)-(d).

[34] Environmental Coalition of Broward County, Inc. v. Meyers, 831 F.2d 984 (11th Cir. 1987). *See also* 50 C.F.R. § 402.15 (responsibilities of the action agency following issuance of a BiOp).

has held that the action agency's reliance on a BiOp to satisfy its ESA obligations cannot be arbitrary and capricious.[35] The Ninth Circuit has also ruled that action agencies are not bound by all the details of a BiOp, so long as they take alternative, reasonably adequate measures to ensure the continued existence of listed species.[36]

In 1995, NMFS issued a "jeopardy BiOp" concerning the operation of the FCRPS and its effect on the listed Snake River salmon.[37] The BiOp contained "reasonable and prudent alternatives" to the proposed operation of the FCRPS during the years 1994 to 1998, calling for the implementation of several actions necessary to avoid jeopardizing the continued existence of the listed species.[38]

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[35] Pyramid Lake Tribe of Indians v. United States Dep't of the Navy, 898 F.2d 1410, 1415 (9th Cir. 1990) (action agencies may not solely rely on BiOps to establish conclusively that they have satisfied their ESA obligations; a decision to rely on a BiOp must be shown to not be arbitrary and capricious).

[36] Tribal Village of Akutan v. Hodel, 854 F.2d 651, 660-61 (9th Cir. 1988). *But see* American Rivers v. National Marine Fisheries Service, No. 96-384, slip op. at 28-29 (D. Or. April 3, 1997) (distinguishing *Village of Akutan* and rejecting plaintiff's claim that any deviation from the reasonable and prudent alternatives provided by NMFS' 1994-1998 Biological Opinion for the Federal Columbia River Power System Operations triggers a duty to come up with other mitigative measures).

[37] NATIONAL MARINE FISHERIES SERV., U.S. DEP'T OF COMMERCE, ENDANGERED SPECIES ACT- SECTION 7 CONSULTATION: BIOLOGICAL OPINION: REINITIATION OF CONSULTATION ON 1994-1998 OPERATION OF THE FEDERAL COLUMBIA RIVER POWER SYSTEM AND JUVENILE TRANSPORTATION PROGRAM IN 1995 AND FUTURE YEARS (Mar. 2, 1995) [hereinafter 1995 BIOP].

[38] 1995 BIOP, *supra* note 37, at 91-135. *See* American Rivers v. National Marine Fisheries Service, No. 96-384, slip op. At 28-29 (D. Or. April 3, 1997) (holding that the reasonable and prudent alternative no jeopardy determination in the 1994-1998 Biological Opinion for Federal Columbia River Power System Operations was not arbitrary and capricious, and therefore, NMFS did not violate the ESA).

These actions included increased flows in the Columbia and Snake Rivers,[39] potential reservoir drawdowns,[40] increased spill,[41] the continued transportation of juvenile salmon by the Corps,[42] and other measures.[43] However, the federal dam operators (the Corps and the Bureau) have the ultimate responsibility to satisfy the requirements of the ESA.[44]

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[39] In the Columbia, spring flow targets at McNary Dam are 220,000 cubic feet per second (cfs) to 260,000 cfs. 1995 BIOP, *supra* note 37, at 104. The summer flow target for McNary is 200,000 cfs. *Id*. For the Snake, spring flow targets are 85,000 cfs to 100,000 cfs at Lower Granite Dam. *Id*. Summer flow targets are 50,000 cfs to 55,000 cfs. *Id*. However, NMFS placed draft limits on reservoirs that could possibly curtail augmentation to protect "other portions of the Columbia Basin ecosystem and the resident fish and wildlife that rely on the reservoirs." *Id*. at 95-98.

The BiOp also requires the Bureau to continue to provide 427,000 acre feet of water in the Snake River. *Id*. at 99. This is consistent with a measure called for in the Council's Program). *See* NORTHWEST POWER PLANNING COUNCIL, COLUMBIA RIVER BASIN FISH AND WILDLIFE PROGRAM 5-21 to 5-22 (Dec. 14, 1994) [hereinafter 1994 PROGRAM]. An acre-foot of water covers one acre to a depth of one foot (or 325,850 gallons). *Id*. at G-1. The Bureau must also secure an additional amount of water "as may be necessary to further reduce human-caused mortality of endangered salmon in the Snake River. 1995 BIOP, *supra* note 37, at 99.

[40] Lower Snake River projects are to be operated within one foot of minimum operating pool (MOP), from April 10, until adult fall chinook begin entering the Snake in late August. *Id*. at 92-94. On the Columbia, John Day Dam was to be operated at near MOP in 1996, and continuously at that level thereafter. *Id*. at 113. MOP is the lowest water level at a project at which navigation locks can still operate. 1994 PROGRAM, *supra* note 39, at G-9. Future deeper drawdowns are to be evaluated, but none will be implemented until the year 2000. 1995 BIOP, *supra* note 37, at 92-94.

[41] *Id*. at 104. In the spring, spill is to occur at all projects. *Id*. at 105. The BiOp requires spill to meet 80% fish passage efficiency (FPE). *Id*. FPE is the percentage of the total number of fish that pass a dam without passing through the turbines. 1994 PROGRAM, *supra* note 39, at G-5. NMFS established "spill triggers" in the BiOp—which consisted of minimum flows at Snake River dams, below which no spill can occur without authorization from the Technical Management Team (TMT). 1995 BIOP, *supra* note 37, at 105. NMFS created the TMT to "advise the operating agencies [the Corps and the Bureau] on dam and reservoir operations to optimize passage conditions for juvenile and adult anadromous salmonids." *Id*. at 101. The TMT is composed of representatives from NMFS, the USFWS, the Corps, BPA, the Bureau, and state and tribal representatives. *Id*. at 101-03; Letter from William Stelle, Regional Director, National Marine Fisheries Serv., to John A. Kitzhaber, Governor, Oregon (May 15, 1996) (enclosing a NMFS memorandum altering the TMT structure to include state and tribes). Spill could be limited by high levels of dissolved gas. 1995 BIOP, *supra* note 37, at 106.

[42] BIOP, supra note 37, at 110-12.

[43] These include measures to reduce adult mortality, *id*. at 115, improved barging, *id*. at 115-16, predation control, *id*. at 122, improved fish passage at mainstem dams, *id*. at 122-23, and the installation of screens. *Id*. at 125.

[44] Pyramid Lake Tribe of Indians v. United States Dep't of the Navy, 898 F.2d 1410, 1415 (9th Cir. 1990) (action agencies may not rely solely on BiOps to establish conclusively that they have satisfied their obligation under the ESA).

The ESA also prohibits action agencies from "taking" any endangered species.[45] Taking is defined broadly to include harassing or harming species,[46] but incidental take "statements" (similar to permits) that reduce or minimize the take of threatened or endangered species may be issued by NMFS.[47]

(B) The Mitchell Act

The Mitchell Act of 1938[48] directs the Secretary of Commerce to (1) establish one or more hatcheries in three of the Columbia Basin states,[49] (2) conduct biological surveys and investigations necessary to facilitate conservation of the fishery resources in the basin,[50] (3) construct and install devices in the basin to improve in-river conditions for fish,[51] and (4) perform all other

[45] The ESA prohibits all persons (including federal agencies) from the "taking" of any endangered fish and wildlife species. 16 U.S.C. § 1538(a)(1). Federal regulations expand this prohibition to threatened species as well. 50 C.F.R. § 17.31(a).

[46] The ESA defines "take" as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in such conduct. 16 U.S.C. § 1532(19). Federal regulations further define "harm" as any act that actually kills or injures wildlife, including "significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering." 50 C.F.R. § 17.3. This regulation was upheld by the Supreme Court. *Babbitt* v. *Sweet Home Chapter*, Communities For A Greater Oregon, 115 S. Ct. 2407 (1995).

[47] An incidental take is a taking that results from, but is not the purpose of, "carrying out an otherwise lawful activity conducted by the Federal agency or applicant." 50 C.F.R. § 402.02. An incidental take requires a statement issued by the consulting agency during formal consultation that sets out the terms and conditions that must be complied with by the federal agency. *Id*. § 402.14(i). Incidental take statements may be included in a BiOp. For example, the 1995 BiOp issued by NMFS concerning the effect of the operation of the FCRPS on listed Snake River salmon contained an incidental take statement. *See* 1995 BIOP, *supra* note 37, at 159.

[48] 16 U.S.C. §§ 755 to 757 (1994).

[49] 16 U.S.C. § 755 (Oregon, Washington, and Idaho). The Act refers to hatcheries as "salmon-cultural stations." *Id*. These hatcheries are operated and maintained in accordance with the Mitchell Act and an earlier 1930 Act. *Id*.; *see also* An Act to provide for a 5-year construction and maintenance program for the United States Bureau of Fisheries, ch. 306, 46 Stat. 371 (1930).

[50] 16 U.S.C. § 756.

[51] *Id*. The Act calls for the construction and installation of devices that (1) improve feeding and spawning conditions, (2) protect migratory fish irrigation projects, and (3) facilitate "free migration of fish over obstructions." *Id*.

activities "necessary for the conservation of fish" in the basin.[52] The Act also authorizes the Secretary to utilize state fish and wildlife resource agencies to carry out these duties.[53]

Since 1970, NMFS has administered the Columbia River Fisheries Development Program (CRFDP)— in conjunction with the USFWS, the Oregon Department of Fish and Wildlife, the Washington Department of Fish and Wildlife, and the Idaho Department of Fish and Game—to carry out the purposes of the Mitchell Act by maintaining salmon and steelhead resources in the basin.[54] The CRFDP is responsible for the "monitoring and oversight of hatcheries, fishways and stream improvement projects, irrigation screening, and studies authorized and funded through the Mitchell Act."[55] Restoration efforts under the CRFDP focus on (1) constructing and operating hatcheries, (2) stream improvements,[56] and (3) quality improvement studies.[57] Congress appropriates funds under the Mitchell Act for all of the above purposes.[58] The CRFDP spent $183.6 million from its inception in 1949 through 1988.[59]

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[52] *Id*.

[53] *Id*. § 757.

[54] MICHAEL R. DELARM ET AL., NOAA TECHNICAL MEMORANDUM NMFS F/NWR-21: COLUMBIA RIVER FISHERIES DEVELOPMENT PROGRAM ANNUAL REPORT FOR F.Y. 1986, at 1-4 (Sept. 1987); *see also id*. for the history of the CRFDP and how it grew out of Mitchell Act activities.

NMFS oversees the operations and administration of CRFDP programs, while the state and federal resource agencies carry out specific projects. Telephone Interview with Robert Smith, Director of Columbia River Fish Development Program, National Marine Fisheries Serv. (Aug. 3, 1995). The Environmental and Technical Services Division of NMFS (in Portland, Oregon) is the specific branch of NMFS that administers the CRFDP. DELARM, *supra*, at 4.

[55] MICHAEL R. DELARM & ROBERT Z. SMITH, NOAA TECHNICAL MEMORANDUM NMFS F/NWR-26: COLUMBIA RIVER FISHERIES DEVELOPMENT PROGRAM ANNUAL REPORT FOR F.Y. 1988, at 1 (Sept. 1989).

[56] DELARM, *supra* note 54, at 3 (stream improvement measures include the screening of irrigation diversions and the construction of fishways). In 1988 there were 43 "formal fishways" operating in the Basin which were constructed under the CRFDP. DELARM & SMITH, *supra* note 55, at 63 (19 in Oregon, 22 in Washington, and 2 in Idaho). Since its inception, CRFDP's results have resulted in the construction of 850 irrigation screens. *Id*. at 65-66 (598 in Oregon, 16 in Washington, and 236 in Idaho). However, only 597 of the 850 screens are in operation. *Id*. at 66.

[57] DELARM, *supra* note 54, at 3. For a list of the studies completed with CRFDP funds in 1988, see DELARM & SMITH, *supra* note 55, at 58-62.

[58] 16 U.S.C. §§ 755, 757.

[59] DELARM & SMITH, *supra* note 55, at 5. The CRFDP spent $85,485,617 from 1991 through 1996. DISTRIBUTION OF FUNDS TO MITCHELL ACT HATCHERIES (FY91-97) (National Marine Fisheries Service, March 12, 1997). NMFS last published the CRFDP annual report in 1988. Although the CRFDP has existed since 1949, it has only been administered by NMFS since 1970. DELARM, *supra* note 54, at 3.

The majority of Mitchell Act money has funded fish hatcheries through the CRFDP.[60] From 1969 to 1988, CRFDP-funded hatcheries released an average of 93 million juvenile salmonids.[61] In 1988 alone, the combined hatchery release totaled nearly 117 million.[62] Nine CRFDP hatcheries are operated by the Oregon Department of Fish and Wildlife,[63] and ten by the Washington Department of Fish and Game.[64] In addition, the USFWS operates and maintains six salmon rearing facilities in the basin funded by the CRFDP.[65]

(C) The Magnuson Act

The Magnuson Fishery Conservation and Management Act (Magnuson Act)[66] created eight regional fishery management councils responsible for developing fishery management plans (FMPs) and submitting the recommendations to the Secretary of Commerce.[67] The Act authorizes the Secretary of Commerce to (1) review and approve FMPs to assure compliance

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[60] In 1988, just over 77% of CRFDP funds went to hatcheries. DELARM & SMITH, *supra* note 55, at 3 (Sept. 1989) (11.5% of funds spent on screens and fishways, 8.8% on NMFS operations and administration, 2.5% on studies).

[61] DELARM & SMITH, *supra* note 55, at 17.

[62] *Id*. (salmonids released totaled 116.8 million).

[63] *Id*. at 21 (these hatcheries are Big Creek, Bonneville, Cascade, Clackamas, Gnat Creek, Klaskanine, Oxbow, Sandy, and Stayton Pond; all but Bonneville and Clackamas are funded entirely by the CRFDP). Approximately 46.7 million juveniles were released from Oregon hatcheries in 1988. *Id*. at 21-22. Adult returns totaled 69,727. *Id*. at 21, 23.

[64] *Id*. at 33, 42 (the ten Washington hatcheries are Elokomin, Grays River, Kalama Falls, Klickitat, Toutle, Washougal, Ringold Salmon Pond, Beaver Creek, Skamania, and Ringold Trout Pond; all completely funded by the CRFDP). Over 40.7 million fish were released from these hatcheries in 1988. *Id*. at 33-34, 42-43. Adult returns totaled 52,560. *Id*. at 33, 35, 42, 44.

[65] *Id*. at 48 (USFWS hatcheries are Abernathy, Carson, Eagle Creek, Little White Salmon, Willard, and Spring Creek; all but Abernathy are completely funded by the CRFDP). About 28.9 million fish were released from these hatcheries in 1988. *Id*. at 48-49. In the same year, 24,338 adults returned. *Id*. at 48, 50.

[66] 16 U.S.C. §§ 1801 to 1855 (1994) The Maguson Act governs the federal fishery management program, which includes foreign and domestic ocean harvesting. Congress enacted the Magnuson Act to protect both the fisheries resource and the fishing industry. The Act extended U.S. fisheries jurisdiction to 200 nautical miles in the ocean.

[67] 16 U.S.C. § 1852. The Pacific Fishery Management Council, consisting of thirteen members, prepares fishery management plans for the Pacific Ocean seaward of California, Washington, Oregon, and Idaho. The regional director of NMFS, Northwest Region, is a voting member of the council. *Id*. The council is currently updating the EIS on its ocean salmon fishery management plan which specifies the overall salmon management objectives and strategies to be followed by the council and the Secretary.

with national standards and other relevant laws,[68] and (2) promulgate federal regulations necessary to implement FMPs.[69] In 1988 NMFS promulgated rules necessary to implement the national standards outlined in the Act.[70]

(D) Columbia River Fish Management Plan

The Columbia River Fish Management Plan (CRFMP)[71] is a federal-tribal-state agreement that supervises the management and harvest of salmon in the Columbia River system.[72] The agreement provides management

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[68] 16 U.S.C. § 1854(a). If the Secretary does not disapprove a plan, it automatically takes effect. *Id.* § 1854(b).

[69] 16 U.S.C. § 1855. The Act also authorizes the Secretary to prepare fishery management plans. *Id.*

[70] 50 C.F.R. § 602.10-602.17 (1995). The regulations are used as guidelines for the development of FMPs. Specifically, the regulations define and clarify guidelines for the following national standards contained in the Magnuson Act: optimum yield; scientific information; management units; allocations; efficiency; variations and contingencies; costs and benefits. *Id.*

[71] The district court in United States v. Oregon, Civil No. 68-513-MA (D.Or. 1988) adopted the Columbia River Fish Management Plan (CRFMP); the CRFMP is a federal-state-tribal agreement that controls the rules and regulations governing fish allocation harvest rights for fish that enter the Columbia River system. The plan provides a framework under which the parties act in a coordinated manner to protect, rebuild, and enhance upper Columbia River fish runs. The CRFMP apportions fishing rights to the state and tribal members; states then establish regulations to govern fish harvest in the Columbia River that mirror those established by the CRFMP. The CRFMP "stipulates that the treaty Indian and non-Indian fisheries shall share equally (50/50) upriver fall chinook available for harvest in the ocean south of the U.S./Canada border and in the mainstem Columbia River below Priest Rapids Dam." U.S. v. OREGON TECHNICAL ADVISORY COMMITTEE, BIOLOGICAL ASSESSMENT OF THE IMPACTS OF ANTICIPATED 1996-1998 FALL SEASON COLUMBIA RIVER MAINSTEM AND TRIBUTARY FISHERIES ON SNAKE RIVER SALMON SPECIES LISTED UNDER THE ENDANGERED SPECIES ACT 3 (July 18, 1996).

In addition to the harvest regulations imposed by the CRFMP, the states of Oregon and Washington annually estimate the size of the runs and determine the length of the fishing season, fishing locations, times, or quotas under the Columbia River Compact, an interstate agency created by Oregon and Washington, and ratified by Congress. Act of April 8, 1918, Pub. L. No. 64-123, 40 Stat. 515 (1918). Where conflict exists between Columbia River Compact harvest goals and those established by the CRFMP, Compact regulations supersede those of the CRFMP. U.S. v. OREGON TECHNICAL ADVISORY COMMITTEE, BIOLOGICAL ASSESSMENT OF THE IMPACTS OF ANTICIPATED 1996-1998 FALL SEASON COLUMBIA RIVER MAINSTEM AND TRIBUTARY FISHERIES ON SNAKE RIVER SALMON SPECIES LISTED UNDER THE ENDANGERED SPECIES ACT 4 (July 18, 1996).

[72] Columbia River Fish Management Plan (as amended by the court, October 7, 1988). Parties to the plan include the Secretaries of Interior and Commerce and their agents; the Nez Perce Tribe, the Confederated Tribes of the Warm Springs Reservation; The Confederated Tribes and Bands of the Yakama Indian Nation; the Shoshone-Bannock Tribe; and the states of Oregon, Washington, and Idaho.

guidelines, harvest allocation requirements, fish production measures, institutional arrangements, and substantive provisions to guide management of the Columbia River fishery resource. In addition, the agreement creates a technical advisory committee and a production advisory committee.[73] Parties to the CRFMP develop harvest plans in consultation with each other to ensure that harvest does not result in extinction of the species.[74] Ultimately, NMFS prepares biological opinions on the proposed actions under the CRFMP, and if necessary issues incidental take statements.

(E) The Northwest Power Act

The Northwest Power Act of 1980 (the NPA)[75] created the Northwest Power Planning Council (the Council), an interstate compact agency[76] involved in governing both the basin's federal hydroelectric operations and fish and wildlife restoration.[77] The Council, through its Columbia Basin Fish and

[73] Id. at 48. The technical advisory committee develops, analyzes, and reviews data, and makes recommendations regarding harvest management. The production advisory committee coordinates information, reviews existing and future artificial and natural production programs, and submits recommendations to the management entities. Id. at 51. NMFS sits on both committees.

[74] Pursuant to the plan, the parties recently developed the: (1) 1996-1998 Management Agreement for Upper Columbia River Spring Chinook, Summer Chinook, and Sockeye, and (2) 1996-1998 Management Agreement for Upper Columbia River Fall Chinook. To satisfy the consultation requirements under the ESA, NMFS requested that USFWS work with the technical advisory committee to conduct biological assessments of the proposed action's impact on listed species and submit the reports to NMFS. NMFS completes a biological opinion and, if appropriate, an incidental take statement. The agreements will be submitted as stipulated orders in United States v. Oregon, Civil No. 68-513-MA (D.Or 1988). If approved by the court, the agreements will bind all parties.

[75] Pacific Northwest Electric Power Planning and Conservation Act of 1980, 16 U.S.C. §§ 839 to 839h (1994).

[76] 16 U.S.C. § 839b(a)(2). The council is comprised of two members from each of the four states in the Columbia River Basin. *Id.*

[77] *See infra* § 3.1 for a detailed discussion of the Northwest Power Act and the Northwest Power Planning Council.

Wildlife Program (the Program),[78] is the entity responsible for achieving Congress's required fish and wildlife protection and enhancement.[79]

NMFS provides fish and wildlife recommendations to the Council for measures to be included in the Council's Program.[80] The NPA's "consistency" and "take into account" provisions do not apply to the USFWS,[81] even though many Program measures call for certain substantive actions by NMFS.

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[78] 1994 PROGRAM, *supra* note 39. Congress enunciated statutory criteria that the Council's program must satisfy. Time deadlines were set for creating and amending the Program. 16 U.S.C. § 839b(h)(9) (within one year of the receipt of recommendations). The Council must solicit and evaluate fish and wildlife recommendations from state and federal fishery agencies (including NMFS) and Indian tribes. *Id*. § 839b(h)(2). The Council must give "due weight" to these recommendations. *Id*. § 839b(h)(7). The Ninth Circuit has construed this section of the NPA to "require that a high degree of deference be given to fishery managers' interpretations of such provisions and their recommendations for program measures." Northwest Resource Info. Ctr., Inc. v. Northwest Power Planning Council, 35 F.3d 1371, 1388 (9th Cir. 1994), *cert. denied sub nom*. Pacific N.W. Generating Coop. v. Northwest Power Planning Council, 116 S. Ct. 50 (1995). If the Council chooses not to follow a recommendation submitted by the fishery agencies and tribes, the Council must explain its reasons for so doing, in writing and in the Program itself. 16 U.S.C. § 839b(h)(7); *see also* Northwest Resource Info. Ctr., 35 F.3d at 1385-86. All Program measures must satisfy five statutory criteria: (1) "complement the existing and future activities" of fishery agencies and tribes; (2) be based on the "best available scientific knowledge;" (3) use the alternative (where "equally effective alternative means of achieving the same sound biological objective exist") with the "minimum economic cost;" (4) be consistent with Indian treaty rights; and (5) provide for improved anadromous fish survival by providing river flows "of sufficient quality and quantity" to improve "production, migration, and survival of such fish." 16 U.S.C. §§ 839b(h)(6)(A)-(E).

The NPA was amended in 1996, in an appropriations rider sponsored by Senator Slade Gorton (R-Wa.). Energy and Water Development Appropriations Act, Pub. L. No. 104-206, § 504, 110 Stat. 2984, 3005-06 (1996) (amending § 839b(h)(10) of the NPA). The rider requires the Council to make recommendations to BPA concerning funding priority measures implementing the Council's Program. *Id*. at 3005-06 (adding new § 839b(h)(10)(D)(iv)). The Council's recommendations must be based on "sound scientific principles; benefit fish and wildlife; and have a clearly defined objective and outcome with provisions for monitoring and evaluation." *Id*. The Council must establish an Independent Scientific Review Panel which will review fish and wildlife projects proposed for BPA funding. *Id*. (adding new §§ 839b(h)(10)(D)(i)-(ii)). The rider requires the Council to "fully consider" the Panel's recommendations on priorities for project funding, and if the Council does not adopt the Panel's recommendations, to explain its reasons for rejecting the recommendations in writing. *Id*. (adding a new § 839b(h)(10)(D)(vi)).

[79] 16 U.S.C. § 839b(h)(5) (requiring the Council's Program to "consist of measures to protect, mitigate, and enhance fish and wildlife affected by the development, operation, and management" of the Columbia River Basin hydrosystem, while assuring the Pacific Northwest an "adequate, efficient[,] economical, and reliable power supply").

[80] *See* 16 U.S.C. § 839b(h) for the statutory criteria for promulgating the Council's Program.

[81] 16 U.S.C. §§ 839b(h)(11)(A)(i)-(ii).

The Council's Program primarily calls for NMFS to conduct various studies concerning salmonids and salmonid habitat. The Council directed NMFS to (1) examine the effects of spill (and dissolved gas supersaturation) on juvenile salmon;[82] (2) determine marine mammal impacts on salmon populations;[83] (3) compare the survival rate of transported juvenile salmon with those that migrate through the river naturally;[84] (4) study the feasibility of measures to improve adult salmon survival;[85] (5) aid in coordinating the Council's hatchery and habitat measures;[86] and (6) aid in resident fish mitigation.[87]

(3) Environmental Regulation

(A) The National Environmental Policy Act

The National Environmental Policy Act (NEPA)[88] requires that NMFS, and any other federal agency, complete a detailed statement on the environmental impacts of any "major Federal actions significantly affecting

[82] 1994 PROGRAM, *supra* note 39, at 5-40 to 5-41 (study was due by January 1, 1997).

[83] *Id*. at 5-45.

[84] *Id*. at 5-47.

[85] *Id*. at 6-2 to 6-4 (including the evaluation of (1) mainstem adult passage facilities, (2) the effects of increased spill for juvenile salmon on adult passage, and (3) the potential of Dworshak Dam to aid in temperature control for the benefit of returning adults).

[86] *See generally id*. at 7-1 to 7-63 (§7 of the Council's Program). NMFS, along with other federal agencies, state fishery agencies, and Indian tribes, sits on the Council's Integrated Hatchery Operations Team. *Id*. at 7-14 (entity created to coordinate the Council's hatchery efforts). NMFS, along with BPA and the Forest Service, funds the program to protect Snake River sockeye. *Id*. at 7-28. NMFS is also called upon to develop and implement procedures that comply with the Council's habitat goal, which is to "[p]rotect and improve habitat conditions to ensure compatibility with the biological needs of salmon, steelhead[,] and other fish and wildlife species." *Id*. at 7-33 to 7-36. The Program calls for NMFS to engage in a review of local watershed coordination efforts. *Id*. at 7-41 (along with the four Basin states, BPA, and the USFWS).

[87] *Id*. at 10-10 (at Dworshak Dam, in coordination with BPA, the Bureau, the Corps, the Idaho Department of Fish and Game, and the Nez Perce Tribe).

[88] 42 U.S.C. §§ 4321 to 4370d (1994).

the quality of the human environment."[89] This environmental impact statement (EIS) must examine: (1) the environmental impact of the proposed action; (2) any unavoidable adverse environmental effects; and (3) alternatives to the proposed action.[90]

The NEPA process has been further defined by regulations promulgated by the Council on Environmental Quality (CEQ).[91] Initially, NMFS must determine whether an EIS is necessary for a proposed action.[92] Using its own regulations, NMFS must determine whether the proposed action normally requires an EIS.[93] If the activity is one that does not normally require an EIS, NMFS must prepare an environmental assessment (EA).[94]

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[89] 42 U.S.C. § 4332(2)(C). For a discussion of what constitutes a "major federal action," see GEORGE C. COGGINS & ROBERT L. GLICKSMAN, 2 PUBLIC NATURAL RESOURCES LAW §§ 10G.03[2] to 10G.04 (1996). There has been much litigation surrounding what is a "major" action, *see id. §* 10G.04, and what is a "federal" action. *Id*. § 10G.03[2] (the key factor in determining whether an action is "federal" is the "agency's authority to influence significant nonfederal activity. . . . [T]he federal agency must possess actual power to control the nonfederal activity") (quoting Sierra Club v. Hodel, 848 F.2d 1068, 1089 (10th Cir. 1988)); *see also* 40 C.F.R. § 1508.18 (1996).

[90] 42 U.S.C. §§ 4332(2)(C)(i)-(v). The EIS must also examine the short-term use of the environment in relation to the maintenance of long-term productivity, and any irreversible and irretrievable commitments of resources. *Id*.

[91] CEQ's NEPA regulations can be found at 40 C.F.R. pt. 1500. The CEQ was created by NEPA. *See* 42 U.S.C. §§ 4341 to 4347. CEQ regulations are entitled to substantial deference regarding NEPA's requirements, Andrus v. Sierra Club, 442 U.S. 347, 358 (1979), and are binding on all federal agencies. 40 C.F.R. § 1500.3 (declaring that 40 C.F.R. pts. 1500 to 1508 are binding on federal agencies). In addition, federal agencies must promulgate their own NEPA regulations to supplement the CEQ regulations. 40 C.F.R. § 1507.3(a). *See* NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, Office of Policy and Strategic Planning, Environmental Review Procedures, Administrative Order 216-6 (1991) for NOAA's NEPA guidelines.

[92] *See* 40 C.F.R. § 1501.4.

[93] *Id*. § 1501.4(a). Certain proposed actions deemed "categorical exclusions" are exempt from the NEPA documentation process; such actions require neither an EA nor an EIS. *Id*. §§ 1508.4, 1501.4(a)(2). CEQ defines categorical exclusion as "a category of actions which do not individually or cumulatively have a significant effect on the human environment and which have been found to have no such effect in procedures adopted by a Federal agency in implementation of these regulations." 40 C.F.R. § 1508.4. NMFS must specify the criteria for any categorical exclusions in its regulations. *Id*. § 1507.3(b)(1), (2).

Activities identified by NOAA as categorical excluded from the EA/EIS process include but are not limited to (1) amendments to management plans falling within the scope of a previous EA or EIS, (2) research, (3) minor planning activities, and (4) listing actions under § 4(a) of the ESA. NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, OFFICE OF POLICY AND STRATEGIC PLANNING, ENVIRONMENTAL REVIEW PROCEDURES, ADMINISTRATIVE ORDER 216-6, section 6.02 (1991).

[94] 40 C.F.R. § 1501.4(b).

An EA is a "concise public document" which determines if an EIS is necessary.[95] After the completion of the EA, if NMFS determines that no EIS is required, it issues a finding of no significant impact (FONSI).[96] Otherwise, NMFS must initiate the EIS process.[97]

The first stage of the EIS process involves "scoping."[98] NMFS must ensure through the scoping process that the EIS adequately considers the environmental impacts of the proposed action.[99] An EIS is prepared in two stages—a draft EIS (DEIS) followed by a final EIS (FEIS)—and may be supplemented as well.[100] Upon completing a DEIS, NMFS must obtain the comments of federal agencies with jurisdiction or special expertise in regard to the environmental impacts involved.[101] The FEIS must respond to the comments,[102] and is the document relied on by NMFS in making its final decision.[103] NMFS's final decision is issued in a record of decision (ROD).[104]

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[95] 40 C.F.R. § 1508.9. The EA must provide "sufficient evidence and analysis" to determine if an EIS is necessary. *Id*. § 1508.9(a)(1). An EA may also be use to aid in NMFS's compliance with NEPA when no EIS is required. *Id*. § 1508.9(a)(2).

[96] 40 C.F.R. § 1501.4(e). The FONSI must include the EA (or a summary of it) and any other environmental documents related to the EA. *Id*. § 1508.13.

[97] 40 C.F.R. 1501.4(d).

[98] Scoping is an "early and open process" to (1) determine the scope of issues to be addressed and (2) identify the significant issues related to the proposed action. 40 C.F.R. § 1501.7. NMFS must invite affected (1) federal, state, and local agencies; (2) Indian tribes; and (3) other interested persons to participate in the scoping process. *Id*. § 1501.7(a)(1).

[99] NMFS must examine three types of actions (connected, cumulative, and similar), three types of alternatives (no action, other reasonable courses of action, and mitigation measures), and three types of impacts (direct, indirect, and cumulative) to determine the scope of the EIS. 40 C.F.R. § 1508.25(a)-(c).

[100] 40 C.F.R. § 1502.9. *See id*. § 1502.9(c) for circumstances which require the Corps to supplement an EIS.

[101] 40 C.F.R. § 1503.1(a)(1). NMFS must also request the comments of appropriate state and local agencies, Indian tribes, the public, and any agency that has requested it be notified of actions similar to that proposed. *Id*. § 1503.1(b).

[102] 40 C.F.R. § 1502.9(b).

[103] CEQ regulations outline the procedures NMFS must follow in its decision making to comply with NEPA. 40 C.F.R. § 1505.1.

[104] 40 C.F.R. § 1505.2. The ROD must contain certain findings: (1) the decision itself; (2) all the alternatives considered (specifying the alternatives which were considered to be "environmentally preferable"); (3) the factors balanced by the agency in making its decision; and (4) whether "all practicable means to avoid or minimize environmental harm from the alternative selected have been adopted, and if not, why they were not." *Id*. §§ 1505.2(a)-(c). A monitoring and enforcement program for mitigation of the environmental impacts of the decision (if applicable) must also be adopted in the ROD. *Id*. § 1505.2(c). NMFS may also take further future actions to ensure that its decision is implemented. *Id*. § 1505.3.

NMFS's actions subject to NEPA requirements include (1) the approval of fishery management plans under the Magnuson Act[105] and (2) the issuance of a biological opinion and an incidental take statement related to harvests under the CRFMP.[106]

(4) Land Management

While NMFS does not have a direct role in land management, it does play an advisory role. The ESA requires federal agencies to consult with NMFS on any proposed activity that is likely to jeopardize a listed species or adversely affect its critical habitat.[107] The Ninth Circuit considers Forest Service Land and Resource Management Plans (LRMPs) to be "continuing agency action;" therefore consultation with NMFS is required even after the adoption of a particular LRMP when a listed species may be affected.[108] In addition, the Forest Service must halt ongoing and announced timber, road, and range activities that may affect a listed species until the agency has consulted with NMFS regarding the LRMP.[109]

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[105] NMFS approves fishery management plans (FMPs) pursuant to the Magnuson Act. 16 U.S.C. § 1854(a). If NMFS or the Secretary does not expressly disapprove a proposed FMP it automatically takes effect. Id. § 1854(b)(1)(A), (B). The Ninth Circuit recently held that a failure by the Secretary to disapprove a FMP is "inaction" that counts as a federal action "for purposes of triggering the EIS requirement under NEPA." Ramsey v. Kantor, 96 F.3d 434, 445 (9th Cir. 1996) (holding that "the Secretary's failure to disapprove the plans rises to the level of major federal action for purposes of NEPA).

[106] The Ninth Circuit recently equated an incidental take statement to a federal permit, the issuance of which constitutes major federal action for the purposes of NEPA. *See* Ramsey v. Kantor, 96 F.3d 434, 444 (9th Cir. 1996) (holding that an "incidental take statement in this case is functionally equivalent to a permit because the activity in question would, for all practical purposes, be prohibited but for the incidental statement"). *See supra* § 2.7(2)(A) for more on the requirements of the ESA and issuance of incidental take statements.

[107] 16 U.S.C. § 1536(a)(2).

[108] Pacific Rivers Council v. Thomas, 30 F.3d 1050, 1051 (9th Cir. 1994), *cert. denied*, 115 S.Ct. 1793 (1995) (holding that Forest Service LRMPs "constitute continuing agency action requiring consultation under § 7(a)(2) of the ESA").

[109] *Id*. at 1056-57 (holding that the Forest Service cannot go forward with these activities without first complying with the consultation requirements of the ESA).

2.8 The United States Fish and Wildlife Service

The U.S. Fish and Wildlife Service (the USFWS), within the Department of the Interior, is the principal federal agency responsible for the conservation, protection, and enhancement of the Basin's fish and wildlife and their habitat. Its responsibilities include protecting migratory birds, endangered species, certain marine mammals, and fresh-water fish. Several statutes govern the USFWS in fulfilling these responsibilities, including the Wildlife Refuge System Administration Act,[1] the Endangered Species Act,[2] the Fish and Wildlife Coordination Act,[3] and the Migratory Bird Treaty Act.[4]

(1) Water Management

(A) Federal Reserved Water Rights for Wildlife Refuges[5]

The doctrine of reserved water rights applies to wildlife refuges administered by the USFWS.[6] When the federal government withdraws lands from the public domain, it reserves any unappropriated water in the amount necessary to fulfill the primary purposes of the reservation[7]—which, in the case of wildlife refuges, is to conserve fish and wildlife and their habitat.[8] The priority date of the reserved water right takes the date of the withdrawal of the refuge.[9] The extent of the reserved water right is determined by the

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[1] 16 U.S.C. § 668dd (1994).

[2] 16 U.S.C. §§ 1531 to 1544 (1994). The USFWS also provides for fish and wildlife resource protection through many contaminant-related statutes such the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. §§ 9601 to 9675 (1994); the Clean Water Act (CWA), 16 U.S.C. §§ 1251 to 1387 (1994); and the Oil Pollution Act of 1990 (OPA), 33 U.S.C. §§ 2701 to 2761 (1994).

[3] 16 U.S.C. §§ 661 to 666c (1994).

[4] 16 U.S.C. §§ 703 to 712 (1994).

[5] This section addresses only the USFWS's responsibilities related to federal reserved water rights for wildlife refuges. *See infra* § 2.8(4)(A) for the USFWS's wildlife refuge land management responsibilities.

[6] Arizona v. California, 373 U.S. 546, 601 (1963).

[7] *Id*. The Supreme Court has held that reserved rights were implied only where primary purpose of reservation would be "entirely defeated." U.S. v. New Mexico, 438 U.S. 696, 700 (1978) (the Court determined that Congress intended national forests to be reserved to furnish a continuous supply of timber and secure favorable conditions of water flows; therefore, the United States did not reserve water for secondary uses such as recreation, aesthetics, wildlife preservation, or cattle grazing when it set aside the Gila National Forest).

[8] Federal Water Rights of the National Park Service, Fish and Wildlife Service, Bureau of Reclamation and the Bureau of Land Management, 86 I.D. 553, 602-07 (1979).

[9] 86 I.D. 553 (1979). Statutorily created refuges also have reserved water rights as of the date of the enactment, in a quantity necessary to fulfill stated refuge purposes. *Id*. at 602-07.

withdrawal authorization for each wildlife refuge, which defines the exact purpose of the reservation.[10]

Wildlife refuge reserved water rights are subject to McCarran Amendment procedures.[11] The Amendment waived federal sovereign immunity, allowing states to join the federal government in general stream adjudications determining all rights to water in a river system, including reserved rights.[12] The Amendment extends only to general stream adjudications, which are comprehensive procedures established to join all possible claimants within a watershed, not to claims initiated against the United States by individual appropriators.[13] The USFWS has obtained state recognition of reserved water rights for the Toppenish Wildlife Refuge pursuant to the Yakima Basin adjudication in the state of Washington.[14] In addition, there are several claims for reserved water rights pending in the Snake River Basin adjudication in Idaho.[15]

(2) Fish and Wildlife Protection

(A) The Endangered Species Act

The Endangered Species Act (the ESA)[16] protects species listed as either endangered or threatened and imposes several duties on the USFWS, including listing species, designating critical habitat for listed species,

[10] 86 I.D. at 602-07 (1979).

[11] 43 U.S.C. § 666 (1994).

[12] *Id*. § 666(a). While the McCarran Amendment contains no explicit reference to "reserved" rights, the Supreme Court has held that such rights are governed by the Amendment. United States Dist. Ct. In & For Cty. of Eagle, 401 U.S. 520, 523 (1971). The Amendment may also require the federal government to assert reserved rights in state court when there is a general stream adjudication in order to preserve the priority of such rights. *See* United States v. Bell, 724 P.2d 631, 643 (Colo. 1986) (holding that "[t]he doctrine of res judicata bars the United States from re-opening reserved water rights adjudications even where prior claims have not been adjudicated or the United States erroneously omitted certain claims").

[13] Dugan v. Rank, 372 U.S. 609, 618 (1963). It is possible for a state to establish a comprehensive administrative adjudication process that would suffice as a "suit" under the Amendment, as long judicial review is available. United States v. Oregon Water Resources Department, 43 F.3d 758, 765-67 (9th Cir. 1994).

[14] Telephone Interview with Bob Oser, Water Rights Manager, U.S. Fish and Wildlife Serv. (July 17, 1995).

[15] *Id*.

[16] 16 U.S.C. §§ 1531 to 1544 (1994).

developing recovery plans, and consulting with federal agencies regarding activities that affect listed species.

The Secretaries of Interior and Commerce make listing determinations.[17] The Secretary of Interior's ESA duties are carried out by the USFWS, while those of the Department of Commerce are administered by NMFS.[18] Interested persons may also petition the Secretary to list a species.[19]

After receiving a petition from an interested party or upon the initiative of the Secretary, the USFWS reviews the status of a candidate species to determine if the species merits listing. This determination is made using the "best scientific and commercial data available."[20] If the USFWS finds a species qualifies for listing, it must publish a proposed regulation in the Federal Register indicating its conclusion.[21] In late 1994, the USFWS listed the Kootenai River population of white sturgeon as endangered.[22] In March 1997, the USFWS issued a finding that the Klamath and Columbia River Basin distinct population segments of the bull trout are warranted for listing,[23] but the agency has yet to issue a proposed rule for listing.

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[17] 16 U.S.C. § 1533(a)(1); *see also* 50 C.F.R. pt. 424 (1995).

[18] USFWS (Department of the Interior)(non marine species) and NMFS (Department of Commerce)(marine species) are the two federal agencies which share responsibility for administering the ESA. 50 C.F.R. § 402.01(b). *See supra* § 2.7(2)(A) for NMFS's ESA responsibilities and activities.

[19] 16 U.S.C. § 1533(b)(3)(A); *see also* 50 C.F.R. § 424.14.

[20] 16 U.S.C. § 1533(b)(1)(A).

[21] 16 U.S.C. § 1533(b)(5)(A)(i). The USFWS may list a species based on any of the following factors: (1) present or threatened destruction, modification, or curtailment of the species' habitat or range; (2) overutilization for commercial, recreational, scientific, or educational purposes; (3) disease or predation; (4) inadequacy of existing regulatory mechanisms; and (5) other natural or manmade factors affecting the species' continued existence. *Id*. §§ 1533(a)(1)(A)-(E). After conducting review of the species, the USFWS may also take into account "those efforts, if any, being made by any state or foreign nation" to protect the species. *Id*. § 1533(b)(1)(A).

[22] Endangered and Threatened Wildlife and Plants; Determination of Endangered Status for the Kootenai River Population of the White Sturgeon, 59 Fed. Reg. 45,989, 45,991 (1994). This population of white sturgeon exists in a stretch of approximately 168 miles of the Kootenai River in Idaho, Montana, and British Columbia, Canada. *Id*. at 45,989.

[23] The USFWS has been embroiled in litigation regarding the listing status of the bull trout since 1993. In 1996, the district court held that the USFWS's 1994 finding that the bull trout was warranted but precluded from listing was arbitrary and capricious. Friends of the Wild Swan v. U.S. Fish and Wildlife Service, 945 F.Supp. 1388 (D. Or. 1996). The court directed the USFWS to reconsider its 1994 finding, limit agency review to the 1994 administrative record, and issue a new finding within four months. *Id*. Pursuant to this order, the USFWS issued a finding that the Klamath and Columbia River Basin distinct population segments of the bull trout were warranted for listing. Memorandum from the Regional Director, Fish and Wildlife Service, Region 1, Portland, Oregon to the Director, Fish and Wildlife Service, Washington, D.C., Reconsidered 1994 Administrative 12-month

Concurrent with the listing of a species, the USFWS must also, "to the maximum extent prudent and determinable,"[24] designate critical habitat for the listed species.[25] The designation of critical habitat must be made on the basis of the "best scientific data available," and "after taking into consideration the economic impact, and any other relevant impact" of designating the particular area as critical habitat.[26] The Secretary may exclude any area from critical habitat if she decides that the benefits of exclusion outweigh the benefits of inclusion—so long as the failure to designate the area as critical habitat does not result in the extinction of the species.[27] In the case of the endangered Kootenai River white sturgeon, the USFWS did not designate critical habitat because critical habitat was not "determinable."[28]

The Secretary must also develop and implement recovery plans for the "conservation and survival" of listed species, unless she finds that a recovery plan "will not promote the conservation of the species."[29] In developing

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Finding on a Petition to List the Bull Trout under the Endangered Species Act (March 11, 1997). The USFWS recently agreed to propose that bull trout in the Columbia and Klamath river basins be listed by June 10, 1997. Associated Press, *Bull Trout Proposal Due By June 10*, OREGONIAN, Apr. 26, 1997, at A13.

[24] The Act's requirement that the USFWS designate critical habitat to the maximum extent prudent and determinable " impresses upon the Secretary of the Interior an affirmative duty to seek out or, at a minimum, to identify prior to the final listing decision the biological and economic data that will be necessary to making his designation of critical habitat." Northern Spotted Owl v. Lujan, 758 F.Supp. 621, 626 (W.D. Wash. 1991).

[25] 16 U.S.C. § 1533(a)(3). Critical habitat is defined as (1) the specific areas within the geographical area occupied by the species on which are found physical or biological features "essential to the conservation of the species" and which may require "special management considerations or protection" and (2) areas outside the geographical area occupied by the species, upon determination by the Secretary that such areas are "essential for the conservation of the species." *Id*. §§ 1532(5)(A)(i)-(ii).

[26] 16 U.S.C. § 1533(b)(2).

[27] 16 U.S.C. § 1533(b)(2).

[28] Endangered and Threatened Wildlife and Plants; Determination of Endangered Status for the Kootenai River Population of the White Sturgeon, 59 Fed. Reg. 45,989, 45,994, 46,000 (relying on 16 U.S.C. § 1533(b)(3)). The USFWS also relied on its own regulations, which provide that critical habitat is not determinable if either (1) there is a lack of information "sufficient" to perform required analyses of the impacts of critical habitat designation, or (2) the biological needs of the species are not sufficiently known to permit identification of an area as critical habitat. *Id*. at 46,000 (citing 50 C.F.R. § 424.12). The USFWS relied on the first ground for its "not determinable" decision. *Id*. at 45,994, 46,000.

[29] 16 U.S.C. § 1533(f)(1). There is some dispute over the enforceability of recovery plans. Commentators have argued that recovery plans are enforceable. *See* DANIEL J. ROHLF, THE ENDANGERED SPECIES ACT 88 (1989) (arguing that "[d]efining agencies' conservation duties by what is set forth in recovery plans would free the courts from sticky problems of attempting to interpret the scope of the ESA's conservation mandate on a case-by-case basis"); Oliver A. Houck, *The Endangered Species Act and Its Implementation by the U.S.*

recovery plans, the Secretary must give priority to listed species that are most likely to benefit from such plans.[30] The Secretary may create "recovery teams" to develop and implement recovery plans.[31] Recovery teams may be comprised of appropriate public and private agencies and institutions, and other qualified persons.[32] The Secretary must provide public notice and an opportunity for public comment prior to final approval of a recovery plan.[33] The USFWS released a draft recovery plan for the endangered Kootenai River white sturgeon in 1996,[34] but a final recovery plan had not been issued as of the spring of 1997.

Federal agencies must also consult with the USFWS to ensure that their activities are not likely to (1) jeopardize the continued existence of listed species or (2) destroy or adversely modify the critical habitat of such species.[35] Any proposed action that is likely to jeopardize a listed species or adversely affect its critical habitat requires the federal agency (or "action

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Departments of Interior and Commerce, 64 U. COLO. L. REV. 277, 350 (1993)(arguing that ". . . . since section 7(a)(1) of the ESA requires all federal agencies to "conserve" endangered wildlife species, and that since the ESA defines "conservation" in terms of species recovery, recovery plan elements

(continued)

are powerful limits, if not mandates"). However, federal courts have upheld federal agency actions contrary to specific recovery plan requirements. *See* National Wildlife Federation v. National Park Service, 669 F.Supp. 384, 388-9 (D. Wyo. 1987) (in upholding a decision by the National Park Service to keep open a campground despite contrary recovery plan requirements, the court noted that ". . . the Secretary is required to develop a recovery plan only insofar as he reasonably believes that it would promote conservation. . . The court will not attempt to second guess the Secretary's motives for not following the recovery plan"); National Audubon Society v. Hester, 801 F.2d 405 (D.C. Cir. 1986) (upholding decision of the USFWS to place all surviving wild condors in a captive breeding program in contravention of the agency's condor recovery plan).

[30] 16 U.S.C. § 1533(f)(1)(A). In addition, each recovery plan must include (1) a description of site-specific management decisions necessary to ensure the conservation and survival of the species; (2) objective and measurable criteria which, if met, will result in the species being removed from the list; and (3) estimates of the time and cost required to carry out the recovery plan. *Id*. § 1533(f)(1)(B).

[31] 16 U.S.C. § 1533(f)(2).

[32] 16 U.S.C. § 1533(f)(2).

[33] 16 U.S.C. § 1533(f)(4).

[34] See Notice of Availability of a Draft Recovery Plan for the Kootenai River Population of White Sturgeon in Idaho and Montana for Review and Comment, 61 Fed. Reg. 34,441 (1996). The draft recovery plan was promulgated by a recovery team comprised of representatives from the Kootenai Tribe of Idaho; the Idaho Department of Fish and Game; the Montana Department of Fish, Wildlife and Parks; BPA; the Corps; the Canadian Department of Fisheries and Oceans; the British Columbia Ministry of Environment, Lands and Parks; and the USFWS. *Id*.

[35] 16 U.S.C. § 1536(a)(2).

agency") to consult with either the USFWS or the National Marine Fisheries Service (NMFS).[36]

Initially, the action agency inquires whether a listed or proposed[37] species or critical habitat "may be present in the area" of the proposed activity.[38] For a proposed species, the action agency need only "confer" with USFWS if the action is likely to jeopardize the continued existence of any proposed species or result in the destruction or adverse modification of proposed critical habitat.[39] If a listed species or critical habitat is present in the area,[40] the action agency must prepare a biological assessment (BA).[41] If the BA shows that the action agency's proposed activity is likely to affect the continued existence of the listed species or adversely affect its critical habitat, formal consultation is required.[42]

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[36] 16 U.S.C. § 1536(a)(2).

[37] A "proposed species" is one for which a final listing determination is pending. 50 C.F.R. § 402.02.

[38] 16 U.S.C. § 1536(c)(1); *see also* 50 C.F.R. § 402.12. The action agency may also initiate "early consultation" with USFWS if a prospective permit applicant "has reason to believe that the prospective action may affect listed species or critical habitat" and requests that the action agency enter into early consultation. 50 C.F.R. § 402.11. Prior to the initiation of early consultation the prospective applicant must certify to the action agency that "(1) it has a definite proposal outlining the action and its effects and (2) it intends to implement its proposal, if authorized. *Id*. § 402.11(b). The procedures and responsibilities for early consultation are similar to those required for formal consultation except that references to the "applicant" are treated as "prospective applicant" and a "preliminary biological opinion" not a biological opinion is issued by USFWS. *Id*. § 402.11(d). For a discussion of the formal consultation requirement see *infra* notes 42-45 and accompanying text.

[39] 16 U.S.C. § 1536(a)(4); *see also* 50 C.F.R. § 402.10.

[40] The consulting agency must use "the best scientific and commercial data available" in making this determination. 16 U.S.C. § 1536(c)(1).

[41] 16 U.S.C. § 1536(c)(1). The contents of the BA are "at the discretion of" the action agency, depending on the nature of the proposed action. 50 C.F.R. § 402.12(f). However, the BA must be based on "the best available scientific and commercial data available." 16 U.S.C. § 1536(a)(2). The BA must be completed within 180 days or a mutually agreed upon date. *Id*. § 1536(c)(1).

For a proposed species or proposed critical habitat, the action agency is required to "confer" with the USFWS if it determines that the proposed action is likely to jeopardize the continued existence of the proposed species or destroy or adversely modify proposed critical habitat. 16 U.S.C. § 1536(a)(4); *see also* 50 C.F.R. § 402.10.

[42] 50 C.F.R. § 402.12(k). Formal consultation regulations for USFWS and NMFS are at 50 C.F.R. § 402.14. The action agency may not "make any irreversible or irretrievable commitment of resources" once formal consultation has begun. 16 U.S.C. § 1536(d); 50 C.F.R. § 402.09.

Action agencies may also engage in "informal consultation" with USFWS to determine whether formal consultation is required. 50 C.F.R. § 402.13. Informal consultation includes all discussions and correspondence between the action agency and USFWS. *Id*. § 402.13(a). The USFWS may suggest modifications to the proposed action that could be implemented to avoid adverse effects to the listed species or corresponding

Formal consultation results in the development of a biological opinion (BiOp) by the USFWS.[43] If the USFWS concludes that the action agency's proposed action is not likely to jeopardize the species or destroy or modify critical habitat, the agency issues a "no jeopardy BiOp."[44] Conversely, if the USFWS cannot make this determination, it must issue a "jeopardy BiOp," which may include "reasonable and prudent alternatives" to the proposed action that will avoid jeopardy.[45]

If the action agency relies on and follows the measures specified in the BiOp, it has probably fulfilled its ESA obligations.[46] However, the Ninth Circuit has held that the action agency's reliance on a BiOp to satisfy its ESA obligations cannot be arbitrary and capricious.[47] The Ninth Circuit has also ruled that action agencies are not bound by all the details of a BiOp so long as they take alternative, reasonably adequate measures to ensure the continued existence of listed species.[48]

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critical habitat. *Id*. § 402.13(b).

[43] *See* 16 U.S.C. § 1536(b)(3)(A). Content requirements for BiOps are at 50 C.F.R. § 402.14(h). *See also* 50 C.F.R. § 402.14(g) (listing the consulting agencies' responsibilities during formal consultation, including: (1) the evaluation of the effects of the proposed action and cumulative effects on the listed species or critical habitat, *id*. § 402.14(g)(3), and (2) the use of "the best scientific and commercial data available." *Id*. § 402.14(g)(8)).

[44] 50 C.F.R. § 402.14(h)(3).

[45] 50 C.F.R. § 402.14(h)(3). The USFWS may also issue a jeopardy BiOp with no reasonable and prudent alternatives. *See id*. (directing that a jeopardy BiOp "shall include reasonable and prudent alternatives, if any"). The action agency may also be required to reinitiate formal consultation with the expert agency when: (1) the action agency retains discretionary control over the action and (2) certain new conditions arise or new information becomes available. 50 C.F.R. §§ 402.16(a)-(d).

[46] Environmental Coalition of Broward County, Inc. v. Meyers, 831 F.2d 984 (11th Cir. 1987). *See also* 50 C.F.R. § 402.15 (responsibilities of the action agency following issuance of a BiOp).

[47] Pyramid Lake Tribe of Indians v. United States Dep't of the Navy, 898 F.2d 1410, 1415 (9th Cir. 1990) (action agencies may not solely rely on BiOps to establish conclusively that they have satisfied their ESA obligations; a decision to rely on a BiOp must be shown to not be arbitrary and capricious).

[48] Tribal Village of Akutan v. Hodel, 854 F.2d 651, 660-61 (9th Cir. 1988). *But see* American Rivers v. National Marine Fisheries Service, No. 96-384, slip op. at 28-29 (D. Or. April 3, 1997) (distinguishing *Village of Akutan* and rejecting plaintiff's claim that any deviation from the reasonable and prudent alternatives provided by NMFS' 1994-1998 Biological Opinion for Federal Columbia River Power System Operations triggers a duty to come up with other mitigative measures).

In 1995, the USFWS issued a "jeopardy BiOp" concerning the operation of the FCRPS and its effect on the listed Kootenai River white sturgeon.[49] The BiOp contained reasonable and prudent alternatives to the proposed operation of the FCRPS, calling for the implementation of several actions necessary to avoid jeopardizing the continued existence of the listed species.[50] These actions included regulating flows from Libby Dam,[51] and increasing and maintaining flows at Bonners Ferry.[52] However, the federal dam operators (the Corps and the Bureau) have the ultimate responsibility to satisfy the requirements of the ESA.[53]

The ESA also prohibits action agencies from "taking" any endangered species.[54] Taking is defined broadly to include harassing or harming

[49] U.S. FISH AND WILDLIFE SERV., DEP'T OF INTERIOR, ENDANGERED SPECIES ACT-SECTION 7 CONSULTATION: BIOLOGICAL OPINION: REINITIATION OF CONSULTATION ON 1995 OPERATION OF THE FEDERAL COLUMBIA RIVER POWER SYSTEM AND FUTURE YEARS (March 1, 1995). After consultation with the Sturgeon Recovery Team and the Kootenai River Steering Committee, the USFWS developed operating guidelines for sturgeon at Libby Dam for 1996 designed to enhance sturgeon reproduction. Letter from Michael J. Spear, Regional Director, U.S. Fish and Wildlife Service, to Major General Russell L. Fuhrman, U.S. Army Corps of Engineers (April 19, 1996). The USFWS developed similar operating guidelines for sturgeon at Libby Dam for 1997. Letter from Michael J. Spear, Regional Director, U.S. Fish and Wildlife Service, to Major General Russell L. Fuhrman, U.S. Army Corps of Engineers (April 2, 1997).

[50] *Id.* at 6.

[51] *Id.* at 7. Flows at Libby Dam are to be regulated to achieve flows at Bonners Ferry to maximize recruitment. *Id.*

[52] *Id.* From May 1 to the date of initial sturgeon spawning, or June 1, flows at Bonners Ferry are to be maintained at a minimum of 15,000 cfs. *Id.*

[53] Pyramid Lake Tribe of Indians v. United States Dep't of the Navy, 898 F.2d 1410, 1415 (9th Cir. 1990) (action agencies may not rely solely on BiOps to establish conclusively that they have satisfied their obligation under the ESA).

[54] The ESA prohibits all persons (including federal agencies) from the "taking" of any endangered fish and wildlife species. 16 U.S.C. § 1538(a)(1). Federal regulations expand this prohibition to threatened species as well. 50 C.F.R. § 17.31(a).

species,[55] but incidental take "statements" (similar to permits) that will reduce or minimize the "take" of listed species may be issued by the USFWS.[56]

(B) The Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act[57] ensures that wildlife conservation receives equal consideration and is coordinated with other features of water resource development.[58] The Act's goal is to protect the loss of and damage to wildlife, and to develop and improve the wildlife resource in connection with water resource developments.[59]

Federal agencies engaged in or regulating water resource development must consult with the USFWS before commencing any impoundment, diversion, channel deepening, or other stream modifications.[60] Several activities are exempt from the consultation requirements, including (1) impoundments with a maximum surface area of less that 10 acres,[61] and (2) activities in connection with programs administered primarily for land management and use carried out by federal land management agencies on federal lands.[62] The USFWS must complete a report documenting the proposed water project's impact on fish and wildlife, and make recommendations to mitigate such effects.[63] Federal agencies must give the USFWS recommendations "full

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[55] The ESA defines "take" as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in such conduct. 16 U.S.C. § 1532(19). Federal regulations further define "harm" as any act that actually kills or injures wildlife, including "significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering." 50 C.F.R. § 17.3. This regulation was upheld by the Supreme Court. Babbitt v. Sweet Home Chapter, Communities For A Greater Oregon, 115 S. Ct. 2407 (1995).

[56] An incidental take is a taking that results from, but is not the purpose of, "carrying out an otherwise lawful activity conducted by the Federal agency or applicant." 50 C.F.R. § 402.02. An incidental take requires a permit issued by the USFWS or NMFS during formal consultation. *Id*. § 402.14(i). Incidental take permits may be included in a BiOp. Permits may also be issued for non-federal activities that will result in the incidental take of a listed species. *See* 16 U.S.C. § 1539 (1994).

[57] 16 U.S.C. §§ 661 to 666c (1994).

[58] 16 U.S.C. § 661.

[59] 16 U.S.C. § 662(a).

[60] 16 U.S.C. § 662(a).

[61] 16 U.S.C. § 662(h).

[62] *Id*.

[63] 16 U.S.C. § 662(b).

consideration," but the final decision is made by the federal agency in charge of the water project.[64] The Act allows the agencies to modify their projects to accommodate wildlife conservation[65] and acquire property to aid in wildlife conservation.[66]

(C) The Migratory Bird Treaty Act

The Migratory Bird Treaty Act of 1918[67] prohibits the taking, killing, or possession of migratory birds.[68] The USFWS has enforcement authority under the Act, including the power to make arrests, searches, and seizures.[69] The USFWS may make exceptions to the Act's prohibition on the taking or

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[64] 16 U.S.C. § 662(b). The federal agency shall adopt in its project plan "such justifiable means and measures for wildlife purposes" that the USFWS recommends "to obtain maximum overall project benefits." *Id*. However, project plans are subject to review by the federal agency or Congress. *See id*.

The USFWS also has specific duties regarding birds and other wildlife pursuant to the Lacey Act; the Act deals primarily with the transport, sale, acquisition, or purchase of fish and wildlife taken, possessed, transported, or sold in violation of federal, state, or tribal law or regulation. *See* 16 U.S.C. §§ 3371 to 3378 (1994); *and* 18 U.S.C. § 42 (1994).

[65] 16 U.S.C. § 662(c) (the agency may "modify or add to the structures and operations" of its projects).

[66] 16 U.S.C. § 663(c) (title, land, and waters may be acquired for wildlife conservation).

[67] 16 U.S.C. §§ 703 to 712 (1994). The Act stems from a treaty between the U.S. and Great Britain, the contents of which are incorporated into the Act. *Id*. § 703.

[68] 16 U.S.C. § 703. The Act states:

> [I]t shall be unlawful at any time, by any means or in any manner, to pursue, hunt, take, capture, kill, attempt to take, capture, or kill, possess, offer for sale, sell, offer to barter, barter, offer to purchase, purchase, deliver for shipment, ship, export, import, cause to be shipped, exported, or imported, deliver for transportation, transport or cause to be transported, carry or cause to be carried, or receive for shipment, transportation, carriage, or export, any migratory bird, any part, nest, or eggs of any such bird, or any product, whether or not manufactured, which consists, or is composed in whole or part, of any such bird or any part, nest, or egg thereof included in the terms [of treaties between the U.S. and Great Britain, Mexico, Japan, and the U.S.S.R., respectively].

Id.

Regulations promulgated pursuant to the MBTA define “take” more narrowly than regulations promulgated pursuant to the ESA. *See* Seattle Audubon Society v. Robertson, Nos. C89-160WD, C89-99(T)WD (W.D. Wash. 1991)(the district court held that the definition of take under the MBTA does not include “harm” or “harass” and therefore the MBTA does not protect habitat).

[69] 16 U.S.C. § 706.

killing of migratory birds for hunting and other related activities.[70] The Secretary must promulgate regulations and ensure that these activities do not undermine the purposes of the Act.[71]

(D) The Federal Power Act

Since 1986, the Federal Power Act (the FPA)[72] has required FERC to include conditions in its licenses that "adequately and equitably protect, mitigate damages to, and enhance" fish, wildlife, and habitat affected by licensed projects.[73] These conditions are based on recommendations received by federal and state fish and wildlife agencies (including the USFWS),[74] under the consultation process required by the Fish and Wildlife Coordination Act.[75]

If the fish and wildlife recommendations are inconsistent with the "purposes and requirements" of the FPA or any other applicable law, FERC must try to solve the inconsistency, giving "due weight" to the recommendations.[76] If FERC does not adopt the recommendations, it must then publish both:
(1) why the recommendations are inconsistent with applicable law, and
(2) how the conditions FERC did adopt will protect, mitigate, and enhance

[70] 16 U.S.C. § 704.

[71] 16 U.S.C. § 704. The Secretary may authorize several activities besides the hunting of protected birds, including taking, capture, killing, possession, sale, purchase, shipment, transportation, carriage, or export. *Id*. The Secretary's regulations must be approved by the President. *Id*. The USFWS has promulgated regulations for the hunting of migratory birds. 50 C.F.R. pts. 13, 19 to 21. The USFWS also issues permits that allow museums and scientific institutions to acquire protected birds. *Id*. § 21.12.

[72] 16 U.S.C. §§ 791 to 825u (1994).

[73] 16 U.S.C. § 803(j)(1).

[74] 16 U.S.C. § 803(j)(1).

[75] 16 U.S.C. §§ 661 to 661c (1994). *See supra* § 2.8(2)(B) for a discussion of the Fish and Wildlife Coordination Act.

[76] 16 U.S.C. § 803(j)(2).

the affected fish, wildlife, and habitat.[77] FERC has promulgated a six-step consultation process for implementing this section of the FPA.[78]

Projects exempted from FERC licensing are still subject to mandatory conditions by federal and state fish and wildlife agencies (including the USFWS).[79] These conditions are also submitted pursuant to the processes outlined in the Fish and Wildlife Coordination Act. Since 1992, all reasonable and necessary costs incurred by fish and wildlife agencies for any consultation with FERC or its license applicants may be included in FERC's annual license charges.[80]

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[77] 16 U.S.C. § 803(j)(2).

[78] First, fish and wildlife agencies must submit their recommendations within 60 days of FERC's public notice that a project is ready for "environmental analysis." 18 C.F.R. § 4.34(b) (1996). Second, FERC has 45 days (after the filing of the recommendations) to "seek clarification" of the agency recommendations. *Id*. § 4.34(e)(2). Third, FERC may make a "preliminary determination" that the recommendations are inconsistent with the purposes and requirements of the FPA or other applicable law. *Id*. § 4.34(e)(3). Fourth, the agencies have 45 days to file comments responding to FERC's preliminary determination. *Id*. § 4.34(e)(4). Fifth, within 30 days of the filing of the agency's response, there is an opportunity for a meeting or conference to discuss FERC's preliminary determination of inconsistency. *Id*. § 4.34(e)(5) (the meeting may be requested by the agencies or a party to the FERC licensing proceeding). Finally, the process ends when FERC issues an order granting or denying the license application. *Id*. § 4.34(e)(6).

In 1995, FERC summarized its procedures under § 803(j):

> We first determine whether each recommendation is supported by substantial evidence in the record; if not, the recommendation is inconsistent with the requirement of . . . [§ 825l(b)] of the FPA that . . . [FERC] orders be supported by substantial evidence. Second, we determine whether a substantial recommendation is inconsistent with the FPA or other applicable law. Any such inconsistency is usually with . . . [FERC's] determinations under the equal consideration/comprehensive development standards of FPA sections . . . [797(e) and 803(a)(1)], in that the recommendation conflicts unduly with another project purpose or value (including the project's economic benefits). Third, we discuss how the fish and wildlife conditions that are adopted in this order will "adequately and equitably protect, mitigate damages to, and enhance, fish and wildlife (including related spawning grounds and habitat)" affected by the project.

Mead Corp., 72 F.E.R.C. ¶ 61,027, at 61,071 (1995).

FERC has also held that agency requests for both (1) no construction or operation of a project and (2) additional pre-licensing studies are not § 803(j) recommendations. 18 C.F.R. § 4.30(b)(9)(ii).

[79] 16 U.S.C. § 823a(c).

[80] 16 U.S.C. § 803(e)(1).

FERC may issue licenses to projects located within a wildlife refuge so long as two conditions are satisfied. First, FERC must find that the project will not interfere or be inconsistent with the reservation's purpose.[81] Second, FERC must include in the license any conditions deemed necessary by the USFWS.[82]

(E) The Northwest Power Act

The Northwest Power Act of 1980 (the NPA)[83] created the Northwest Power Planning Council (the Council), an interstate compact agency[84] involved in governing both the basin's federal hydroelectric operations and fish and wildlife restoration.[85] The Council, through its Columbia Basin Fish and

[81] 16 U.S.C. § 797(e).

[82] 16 U.S.C. § 797(e). Once FERC issues notice that a license application is "ready for environmental analysis," federal land management agencies have 60 days to file their conditions. 18 C.F.R. § 4.34(b). Federal land management agencies must "specifically identify and explain the mandatory terms and conditions or prescriptions and their evidentiary and legal basis." *Id.* § 4.34(b)(1).

[83] Pacific Northwest Electric Power Planning and Conservation Act of 1980, 16 U.S.C. §§ 839 to 839h (1994).

[84] 16 U.S.C. § 839b(a)(2). The Council is comprised of two members from each of the four states in the Columbia River Basin. *Id.*

[85] *See infra* § 3.1 for a detailed discussion of the Northwest Power Act and the Northwest Power Planning Council.

Wildlife Program (the Program),[86] is the entity responsible for achieving Congress's required fish and wildlife protection and enhancement.[87]

The USFWS's main role under the NPA is to provide fish and wildlife recommendations to the Council for measures to be included in the Council's program.[88] The NPA's "consistency" and "take into account" provisions do not apply to the USFWS,[89] even though certain program measures may call for certain substantive actions by the USFWS.

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[86] NORTHWEST POWER PLANNING COUNCIL, COLUMBIA RIVER BASIN FISH AND WILDLIFE PROGRAM (Dec. 14, 1994) [hereinafter 1994 PROGRAM]. Congress enunciated strict statutory criteria for the Council's program. Time deadlines were set for creating and amending the program. 16 U.S.C. § 839b(h)(9) (within one year of the receipt of recommendations). The Council must solicit and evaluate fish and wildlife recommendations from state and federal fishery agencies (including the USFWS) and Indian tribes. *Id.* § 839b(h)(2). The Council must give "due weight" to these recommendations. *Id.* § 839b(h)(7). The Ninth Circuit has construed this section of the NPA to "require that a high degree of deference be given to fishery managers' interpretations of such provisions and their recommendations for program measures." Northwest Resource Info. Ctr., Inc. v. Northwest Power Planning Council, 35 F.3d 1371, 1388 (9th Cir. 1994), *cert. denied sub nom.* Pacific N.W. Generating Coop. v. Northwest Power Planning Council, 116 S. Ct. 50 (1995). If the Council chooses not to follow a recommendation submitted by the fishery agencies and tribes, the Council must explain its reasons for so doing, in writing and in the program itself. 16 U.S.C. § 839b(h)(7); *see also* Northwest Resource Info. Ctr., 35 F.3d at 1385-86. All program measures must satisfy five statutory criteria: (1) "complement the existing and future activities" of fishery agencies and tribes; (2) be based on the "best available scientific knowledge;" (3) use the alternative (where "equally effective alternative means of achieving the same sound biological objective exist") with the "minimum economic cost;" (4) be consistent with Indian treaty rights; and (5) provide for improved anadromous fish survival by providing river flows "of sufficient quality and quantity" to improve "production, migration, and survival of such fish." 16 U.S.C. §§ 839b(h)(6)(A)-(E).

The NPA was amended in 1996, in an appropriations rider sponsored by Senator Slade Gorton (R-Wa.). Energy and Water Development Appropriations Act, Pub. L. No. 104-206, § 504, 110 Stat. 2984, 3005-06 (1996) (amending § 839b(h)(10) of the NPA). The rider requires the Council to make recommendations to BPA concerning funding priority measures implementing the Council's program. *Id.* at 3005-06 (adding new § 839b(h)(10)(D)(iv)). The Council's recommendations must be based on "sound scientific principles; benefit fish and wildlife; and have a clearly defined objective and outcome with provisions for monitoring and evaluation." *Id.* The Council must establish an Independent Scientific Review Panel which will review fish and wildlife projects proposed for BPA funding. *Id.* (adding new §§ 839b(h)(10)(D)(i)-(ii)). The rider requires the Council to "fully consider" the Panel's recommendations on priorities for project funding, and if the Council does not adopt the Panel's recommendations, to explain its reasons for rejecting the recommendations in writing. *Id.* (adding a new § 839b(h)(10)(D)(vi)).

[87] 16 U.S.C. § 839b(h)(5) (requiring the Council's program to "consist of measures to protect, mitigate, and enhance fish and wildlife affected by the development, operation, and management" of the Columbia River Basin hydrosystem, while assuring the Pacific Northwest an "adequate, efficient[,] economical, and reliable power supply").

[88] *See* 16 U.S.C. § 839b(h) for the statutory criteria for promulgating the Council's Program.

[89] 16 U.S.C. §§ 839b(h)(11)(A)(i)-(ii).

The Council's program calls for the USFWS to aid in efforts to improve federal hatchery programs.[90] The USFWS is to also sit on the Integrated Hatchery Operations Team created by the program to coordinate hatchery practices.[91] The USFWS is called upon to develop and implement procedures that comply with the Council's habitat goal, which is to "[p]rotect and improve habitat conditions to ensure compatibility with the biological needs of salmon, steelhead[,] and other fish and wildlife species."[92] The program calls for the USFWS to engage in a review of local watershed coordination efforts.[93] The program also calls for certain wildlife mitigation efforts.[94]

(F) The Mitchell Act[95]

The Mitchell Act of 1938[96] directs the Secretary of Commerce to: (1) establish one or more hatcheries in three of the basin states;[97] (2) conduct biological surveys and investigations necessary to facilitate conservation of the fishery resources in the basin;[98] (3) construct and install devices in the basin to improve in-river conditions for fish;[99] and (4) perform all other activities

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[90] 1994 PROGRAM, *supra* note 86, at 7-5. The USFWS is currently drafting a programmatic EIS to assess the impacts of the introduction of large numbers of anadromous fish from federally funded hatcheries in the Basin on wild salmon. *Id*. The Council noted that the EIS is not designed to specifically meet any Program objective. *Id*. (the EIS is, however, funded by BPA). The Council felt that there would be overlap between the EIS and certain measures contained in the Council's Program. *Id*. (noting that §§ 7.1C.1, 7.1F.1, 7.1F.2, and 7.2A.2 are Council measures that would be addressed by the EIS). BPA is allowed to credit the overlapping elements in the EIS as satisfying the corresponding Council measures. *Id*.

[91] *Id*. at 7-14. (along with NMFS, other federal agencies and state fishery agencies and Indian tribes).

[92] *Id*. at 7-33 to 7-36.

[93] *Id*. at 7-41 to 7-42 (the four Basin states, BPA, and NMFS are also engaged in watershed coordination efforts).

[94] *Id*. at 11-8 (authorizing short-term and long-term agreements for wildlife mitigation).

[95] For more on Mitchell Act hatchery activities, see *supra* § 2.7(2)(B).

[96] 16 U.S.C. §§ 755 to 757 (1994).

[97] 16 U.S.C. § 755 (Oregon, Washington, and Idaho). The Act refers to hatcheries as "salmon-cultural stations." *Id*. These hatcheries are operated and maintained in accordance with the Mitchell Act and a earlier 1930 Act. *Id*.; *see also* an Act to provide for a 5-year construction and maintenance program for the United States Bureau of Fisheries, ch. 306, 46 Stat. 371 (1930).

[98] 16 U.S.C. § 756.

[99] *Id*. The Act calls for the construction and installation of devices that: (1) improve feeding and spawning conditions, (2) protect migratory fish irrigation projects, and (3) facilitate "free migration of fish over obstructions." *Id*.

"necessary for the conservation of fish" in the basin.[100] The Secretary is also authorized to utilize the state fish and wildlife resource agencies in the three basin states in carrying out her duties.[101]

Since 1970, NMFS has administered the Columbia River Fisheries Development Program (CRFDP)—in conjunction with the USFWS, the Oregon Department of Fish and Wildlife, the Washington Department of Fish and Wildlife, and the Idaho Department of Fish and Game—to carry out the purposes of the Mitchell Act by maintaining salmon and steelhead resources in the Basin.[102] The CRFDP is responsible for the "monitoring and oversight of hatcheries, fishways and stream improvement projects, irrigation screening, and studies authorized and funded through the Mitchell Act."[103] Restoration efforts under the CRFDP focus on: (1) constructing and operating hatcheries, (2) stream improvements,[104] and (3) quality improvement studies.[105] Congress appropriates funds under the Mitchell Act for all of the above purposes.[106] The CRFDP has spent $183,660,000 from its inception in 1949 through 1988.[107]

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[100] *Id*.

[101] *Id*. § 757.

[102] MICHAEL R. DELARM ET AL., NOAA TECHNICAL MEMORANDUM NMFS F/NWR-21: COLUMBIA RIVER FISHERIES DEVELOPMENT PROGRAM ANNUAL REPORT FOR F.Y. 1986, at 1-4 (Sept. 1987); *see also id*. for the history of the CRFDP and how it grew out of Mitchell Act activities.

NMFS oversees the operations and administration of CRFDP programs, while the state and federal resource agencies carry out the projects. Telephone Interview with Robert Smith, Director of Columbia River Fish Development Program, National Marine Fisheries Serv. (Aug. 3, 1995). The Environmental and Technical Services Division of NMFS (in Portland, Oregon) is the specific branch of NMFS that administers the CRFDP. DELARM, *supra*, at 4.

[103] MICHAEL R. DELARM & ROBERT Z. SMITH, NOAA TECHNICAL MEMORANDUM NMFS F/NWR-26: COLUMBIA RIVER FISHERIES DEVELOPMENT PROGRAM ANNUAL REPORT FOR F.Y. 1988, at 1 (Sept. 1989).

[104] DELARM, *supra* note 102, at 3 (stream improvement measures include the screening of irrigation diversions and the construction of fishways). In 1988 there were 43 "formal fishways" operating in the Basin which were constructed under the CRFDP. DELARM & SMITH, *supra* note 103, at 63 (19 in Oregon, 22 in Washington, and 2 in Idaho). Since its inception, the CRFDP has provided for the construction of 850 irrigation screens. *Id*. at 65-66 (598 in Oregon, 16 in Washington, and 236 in Idaho). However, only 597 of the 850 screens are in operation. *Id*. at 66.

[105] DELARM, *supra* note 102, at 3. For a list of the studies completed with CRFDP funds in 1988, see DELARM & SMITH, *supra* note 103, at 58-62.

[106] 16 U.S.C. §§ 755, 757.

[107] DELARM & SMITH, *supra* note 103, at 5. The CRFDP spent $85,485,617 between 1991 and 1996. DISTRIBUTION OF FUNDS TO MITCHELL ACT HATCHERIES (FY91-97) (National Marine Fisheries Service, March 12, 1997). NMFS lase published the CRFDP annual report in 1988. Although the CRFDP has existed since 1949, it has only been administered by NMFS since 1970. DELARM, *supra* note 102, at 3.

The majority of Mitchell Act money has funded fish hatcheries through the CRFDP.[108] The USFWS operates and maintains six salmon rearing facilities in the Basin funded primarily by the CRFDP.[109]

(3) Environmental Regulation

(A) The National Environmental Policy Act

The National Environmental Policy Act (NEPA)[110] requires the USFWS to complete a detailed statement on the environmental impacts of any "major Federal actions significantly affecting the quality of the human environment."[111] This environmental impact statement (EIS) must examine: (1) the environmental impact of the proposed action; (2) any unavoidable adverse environmental effects; and (3) alternatives to the proposed action.[112]

The NEPA process has been further defined by regulations promulgated by the Council on Environmental Quality (CEQ).[113] Initially, the USFWS must

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[108] In 1988, just over 77% of CRFDP funds went to hatcheries. DELARM & SMITH, *supra* note 103, at 3 (Sept. 1989) (11.5% of funds spent on screens and fishways, 8.8% on NMFS operations and administration, 2.5% on studies).

[109] *Id*. at 48 (USFWS hatcheries are Abernathy, Carson, Eagle Creek, Little White Salmon, Willard, and Spring Creek; all but Abernathy are completely funded by the CRFDP). About 28.9 million fish were released from these hatcheries in 1988. *Id*. at 48-49. In the same year, 24,338 adults returned. *Id*. at 48,50.

[110] 42 U.S.C. §§ 4321 to 4370d (1994).

[111] 42 U.S.C. § 4332(2)(C). For a discussion of what constitutes a "major federal action," see GEORGE C. COGGINS & ROBERT L. GLICKSMAN, 2 PUBLIC NATURAL RESOURCES LAW §§ 10G.03[2] to 10G.04 (1996). There has been much litigation surrounding what is a "major" action, *see id*. § 10G.04, and what is a "federal" action. *Id*. § 10G.03[2] (the key factor in determining whether an action is "federal" is the "agency's authority to influence significant nonfederal activity. . . . [T]he federal agency must possess actual power to control the nonfederal activity") (quoting Sierra Club v. Hodel, 848 F.2d 1068, 1089 (10th Cir. 1988)); *see also* 40 C.F.R. § 1508.18 (1996).

[112] 42 U.S.C. §§ 4332(2)(C)(i)-(v). The EIS must also examine the short-term use of the environment in relation to the maintenance of long-term productivity, and any irreversible and irretrievable commitments of resources. *Id*.

[113] CEQ's NEPA regulations can be found at 40 C.F.R. pt. 1500. The CEQ was created by NEPA. *See* 42 U.S.C. §§ 4341 to 4347. CEQ regulations are entitled to substantial deference regarding NEPA's requirements, Andrus v. Sierra Club, 442 U.S. 347, 358 (1979), and are binding on all federal agencies. 40 C.F.R. § 1500.3 (declaring that 40 C.F.R. pts. 1500 to 1508 are binding on federal agencies). In addition, federal agencies must promulgate their own NEPA regulations to supplement the CEQ regulations. 40 C.F.R. § 1507.3(a). *See* 62 Fed. Reg. 2380 (1997) (codified as Department of the Interior Manual, 516 DM 6, Appendix 1 (managing the NEPA process - revised instructions for the USFWS) for the USFWS regulations.

determine whether an EIS is necessary for a proposed action.[114] Using its own regulations, the USFWS must determine whether the proposed action normally requires an EIS.[115] USFWS actions that normally require and EIS include but are not limited to (1) major proposals to establish new refuges or fish hatcheries, and (2) comprehensive conservation plans for new installations.[116] Courts are split on whether designation of critical habitat under the ESA triggers the requirements under NEPA.[117] Pursuant to Ramsey v. Kantor,[118] the USFWS may be subject to NEPA when the agency

[114] *See* 40 C.F.R. § 1501.4.

[115] *Id*. § 1501.4(a). Certain proposed actions deemed "categorical exclusions" are exempt from the NEPA documentation process; such actions require neither an EA nor an EIS. *Id*. §§ 1508.4, 1501.4(a)(2). CEQ defines categorical exclusion as "a category of actions which do not individually or cumulatively have a significant effect on the human environment and which have been found to have no such effect in procedures adopted by a Federal agency in implementation of these regulations." 40 C.F.R. § 1508.4. The USFWS must specify the criteria for any categorical exclusions in its regulations. *Id*. § 1507.3(b)(1), (2).

The USFWS identifies actions in each of the following classes as categorically excluded from the EIS/EA process (1) general actions, (2) resource management actions, (3) permit and regulatory functions, (4) recovery plans, and (5) financial assistance. *See* 62 Fed. Reg. 2380 (1997) (codified at Department of the Interior Manual, 516 DM 6, Appendix 1 (managing the NEPA process - revised instructions for the USFWS). General actions include but are not limited to (1) changes to an approved action, (2) personnel training, (3) issuance of manuals, and (4) the acquisition of real property. *Id*. Resource management actions include but are not limited to (1) operation of existing facilities, (2) construction of small structures such as fences, (3) prescribed burning, and (4) reintroduction of native species where negligible environmental effects are anticipated. *Id*. Permit and regulatory functions include but are not limited to (1) issuance of ESA section 10(a)(1)(B) “low-effect” incidental take permits, (2) issuance of permits for additional use of right-of-way, and (3) denial of special use permits. *Id*. Recovery plans issued under section 4(f) of the ESA are categorically excluded from the EIS/EA process as well as certain forms of financial assistance. *Id*.

[116] *See* 62 Fed. Reg. 2380 (1997) (codified as Department of the Interior Manual, 516 DM 6, Appendix 1 (managing the NEPA process - revised instructions for the USFWS).

[117] *See* Douglas County v. Babbitt, 48 F.3d 1495, 1506 (9th Cir. 1995), *cert denied*, 116 S.Ct. 698 (1996) (holding that “. . . NEPA does not apply to the designation of a critical habitat because the ESA furthers the goals of NEPA without demanding an EIS”); Catron County Board of Commissioners, New Mexico v. U.S. Fish and Wildlife Service, 73 F.3d 1429, 1439 (10th Cir. 1996) (the court held that “. . . .Congress intended that the Secretary comply with NEPA when designating critical habitat under ESA when such designations constitute major federal action”).

[118] 96 F.3d 434 (9th Cir. 1996) The Ninth Circuit recently equated an incidental take statement issued by NMFS to a federal permit, the issuance of which constitutes major federal action for the purposes of NEPA. *See supra* § 2.8(2)(A) for more on ESA requirements and incidental take statements.

issues an incidental take permit.[119] If the activity is one that does not normally require an EIS, the USFWS must prepare an environmental assessment (EA).[120]

An EA is a "concise public document" which determines if an EIS is necessary.[121] After the completion of the EA, if the USFWS determines that no EIS is required, it issues a finding of no significant impact (FONSI).[122] Otherwise, the USFWS must initiate the EIS process.[123]

The first stage of the EIS process involves "scoping."[124] The USFWS must ensure through the scoping process that the EIS adequately considers the environmental impacts of the proposed action.[125] An EIS is prepared in two stages—a draft EIS (DEIS) followed by a final EIS (FEIS)—and may be supplemented as well.[126] Upon completing a DEIS, the USFWS must obtain the comments of federal agencies with jurisdiction or special expertise in regard to the environmental impacts involved.[127] The FEIS must respond to

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[119] The Ninth Circuit held that an "incidental take statement in this case is functionally equivalent to a permit because the activity in question would, for all practical purposes, be prohibited but for the incidental statement." *Id.* at 444.

[120] 40 C.F.R. § 1501.4(b). The USFWS identifies the following actions as normally requiring an EA (1) proposals to establish most new refuges and fish hatcheries, (2) most additions and rehabilitations to existing installations, and (3) and habitat conservation plan not meeting the definition of "low-effect." *See* 62 Fed. Reg. 2380 (1997) (codified as Department of the Interior Manual, 516 DM 6, Appendix 1 (managing the NEPA process - revised instructions for the USFWS).

[121] 40 C.F.R. § 1508.9. The EA must provide "sufficient evidence and analysis" to determine if an EIS is necessary. *Id.* § 1508.9(a)(1). An EA may also be use to aid in the USFWS's compliance with NEPA when no EIS is required. *Id.* § 1508.9(a)(2).

[122] 40 C.F.R. § 1501.4(e). The FONSI must include the EA (or a summary of it) and any other environmental documents related to the EA. *Id.* § 1508.13.

[123] 40 C.F.R. 1501.4(d).

[124] Scoping is an "early and open process" to (1) determine the scope of issues to be addressed and (2) identify the significant issues related to the proposed action. 40 C.F.R. § 1501.7. The USFWS must invite affected (1) federal, state, and local agencies; (2) Indian tribes; and (3) other interested persons to participate in the scoping process. *Id.* § 1501.7(a)(1).

[125] The USFWS must examine three types of actions (connected, cumulative, and similar), three types of alternatives (no action, other reasonable courses of action, and mitigation measures), and three types of impacts (direct, indirect, and cumulative) to determine the scope of the EIS. 40 C.F.R. § 1508.25(a)-(c).

[126] 40 C.F.R. § 1502.9. *See id.* § 1502.9(c) for circumstances which require the USFWS to supplement an EIS.

[127] 40 C.F.R. § 1503.1(a)(1). The USFWS must also request the comments of appropriate state and local agencies, Indian tribes, the public, and any agency that has requested it be notified of actions similar to that proposed. *Id.* § 1503.1(b).

the comments,[128] and is the document relied on by the USFWS in making its final decision.[129] The USFWS's final decision is issued in a record of decision (ROD).[130]

(4) Land Management

(A) The Wildlife Refuge System

The USFWS manages lands within the national wildlife refuge system to conserve and enhance fish and wildlife and their habitat,[131] including twenty-four national wildlife refuges in the Columbia River Basin.[132] The wildlife refuge system lacks a guiding organic act.[133] Consequently, each wildlife refuge is governed by its own enabling act.[134] However, the National Wildlife Refuge System Administration Act of 1966 (NWRSAA) placed all of the nation's wildlife refuges into one system, to be administered by the Secretary

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[128] 40 C.F.R. § 1502.9(b).

[129] CEQ regulations outline the procedures the USFWS must follow in its decision making to comply with NEPA. 40 C.F.R. § 1505.1.

[130] 40 C.F.R. § 1505.2. The ROD must contain certain findings: (1) the decision itself; (2) all the alternatives considered (specifying the alternatives which were considered to be "environmentally preferable"); (3) the factors balanced by the agency in making its decision; and (4) whether "all practicable means to avoid or minimize environmental harm from the alternative selected have been adopted, and if not, why they were not." *Id*. §§ 1505.2(a)-(c). A monitoring and enforcement program for mitigation of the environmental impacts of the decision (if applicable) must also be adopted in the ROD. *Id*. § 1505.2(c). The USFWS may also take further future actions to ensure that its decision is implemented. *Id*. § 1505.3.

[131] In addition to the lands within the national wildlife refuge system, the USFWS manages certain lands designated under the Wilderness Act of 1964. 16 U.S.C. §§ 1131 to 1136 (1994). Under the Wilderness Act, management authority over a particular wilderness area lies with the federal agency which had jurisdiction over the land in question prior to the land being designated as wilderness. *Id*. § 1133(b). Refuge wilderness areas are subject to the substantive provisions of the Wilderness Act and implementing regulations promulgated by the USFWS that restrict or disallow activities such as mining, motorized equipment and vehicles, and grazing. 16 U.S.C. §§ 1133(a)-(d); 50 C.F.R. pt. 35 (wilderness preservation and management regulations). However, there are no refuge wilderness areas in the Columbia River Basin.

[132] U.S. Fish & Wildlife Service, Refuge Checklist by State and Ecoregion, (June 1995).

[133] A current congressional proposal would establish an organic act for the National Wildlife Refuge System. *See Agreement on Refuge Act Attained*, OUTDOOR NEWS BULLETIN (Wildlife Management Institute, Washington, D.C.), April 25, 1997, at 3-4 (noting that the current proposal "sets a strictly conservation mission for the Refuge System, requires (for the first time) that the System's biological health and integrity be protected, requires that the mission of the System and the purposes of the individual refuges be carried out, requires the Fish and Wildlife Service to determine "compatible uses," and states clearly that wildlife-related uses are priority uses of refuges and maintains refuge water rights").

[134] COGGINS & GLICKSMAN, *supra* note 111, at § 14A.01.

of the Interior via the USFWS.[135] The NWRSAA provides little management guidance, except for imposing possible restrictions on the authorization of "secondary uses" on wildlife refuges.[136]

The USFWS may only authorize secondary uses within a wildlife refuge for purposes "compatible" with the primary wildlife conservation objective for which the particular refuge was established.[137] Secondary uses include

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[135] 16 U.S.C. § 668dd (1994). However, the USFWS Refuge Manual directs that all National Wildlife Refuge lands be "managed in accordance with an approved Comprehensive Management Plan (CMP) that will guide management decisions and set forth strategies for achieving refuge unit (unit) purposes." U.S. FISH AND WILDLIFE SERV., U.S. DEP'T OF INTERIOR, REFUGE MANUAL, pt. 602 FW 1.1 (1995). A refuge "unit"includes any "component" of the National Wildlife Refuge System including national wildlife refuges, wildlife ranges, wildlife management areas, waterfowl production areas, and any other areas under the jurisdiction of the USFWS. *Id*. at pt. 602 FW 1.4N. The CMP planning process is a ten-stage process whereby each refuge unit: (1) develops a preplanning process; (2) identifies issues; (3) gathers information; (4) analyzes resource relationships; (5) develops a range of alternatives; (6) assesses expected environmental effects; (7) identifies a preferred alternative; (8) publishes a draft plan; (9) identifies a proposed action; and (10) publishes a final plan. *Id*. at pt. 602 FW 2.1A-2.1J. USFWS compatibility determinations (delineating allowable secondary uses on refuge lands) may be specifically included or incorporated by reference into the CMP or can be part of an entirely separate administrative process. *Id*. at pt. 602 FW 2.1D(2)(a).

[136] 16 U.S.C. § 668dd(d)(1)(A).

[137] 16 U.S.C. § 668dd(d)(1)(A). The Secretary of the Interior, through the USFWS, is responsible for making this "compatibility" determination. *Id*. §§ 668dd(a)(1), 668dd(d)(1)(A). Neither the NWRSAA nor the USFWS's regulations define "compatibility." However, the USFWS's Refuge Manual provides a decentralized process where the compatibility determination rests primarily with individual refuge managers. U.S. FISH AND WILDLIFE SERV., U.S. DEP'T OF INTERIOR, REFUGE MANUAL, § 20.8 (1986). The Manual defines "compatibility" as a use that will not materially interfere with or detract from the purposes for which the refuge was established. *Id*. § 20.6(A). The Manual identifies five steps a refuge manager must follow in making the compatibility determination: (1) identify the refuge purpose; (2) describe where, when, why, and how the proposed use will occur; (3) assess the impact of the use on the refuge, including both the short-term and long-term effects; (4) determine whether an incompatible use, as originally proposed, can be made compatible through conditions that minimize or eliminate adverse effects; and (5) determine whether the proposed use is compatible and list any conditions placed upon the use. *Id*. § 20.8(A). The Ninth Circuit has held that where the USFWS knows that a particular secondary use is harming the primary uses for which the refuge was established, the agency has an affirmative duty to investigate and determine "compatibility" prior to permitting the secondary use to continue. Wilderness Soc'y v. Babbitt, 5 F.3d 383, 389 (9th Cir. 1993).

In November 1994, the USFWS released the findings from a year-long compatibility evaluation of the secondary and incidental uses on national wildlife refuges. Notice of Availability—Compatibility Lawsuit Settlement Documents, 59 Fed. Reg. 61,762 (1994). Based on these findings, the agency proposed to modify or discontinue 23 secondary uses (on 18 refuges) during 1995 because of incompatibility with primary refuge purposes. U.S. FISH AND WILDLIFE SERV., REGION 1, U.S. DEP'T OF THE INTERIOR, DOCUMENTED REVIEW FINDS FEW INCOMPATIBLE USES ON NATIONAL WILDLIFE REFUGES 1, app. 1-2 (Nov. 29, 1994) (secondary uses to be modified or discontinued include recreational activities and livestock grazing that disturb wildlife). The proposal could affect the management of two refuges in the basin, both

hunting and fishing,[138] public recreation,[139] and access[140] whenever the Secretary determines "that such uses are compatible with the major purposes for which such areas were established."[141] Secondary uses of wildlife refuges in the Columbia River Basin include but are not limited to recreational uses including fishing, hunting, wildlife observation, and livestock grazing.[142]

(continued)

in Idaho. *See id.* (canoeing that disturbs wildlife in the Camas National Wildlife Refuge and an irrigation sprinkler wheel that destroys vegetation in the Minidoka National Wildlife Refuge).

[138] *See* 50 C.F.R. pt. 32 for USFWS hunting and fishing regulations on wildlife refuges. For a listing of special hunting and fishing rules on wildlife refuges located in the four Basin states, see *id.* §§ 32.31 (Idaho), 32.45 (Montana), 32.56 (Oregon), 32.67 (Washington).

[139] *See* 50 C.F.R. §§ 26.31 to 26.33 for USFWS regulations governing recreation on refuge areas.

[140] *See* 50 C.F.R. pt. 26 (USFWS regulations governing public entry and use).

[141] 16 U.S.C. § 668dd(d)(1)(A). The Secretary may also permit the use or grant easements over any areas within the refuge system for purposes such as power and telephone lines, canals, ditches, pipelines, and roads, so long as compatible with the purposes for which the refuge was established. *Id.* § 668dd(d)(1)(B).

[142] Telephone Interview with Bob Oser, Water Rights Manager, U.S. Fish and Wildlife Serv. (July 17, 1995).

3.1 The Northwest Power Planning Council

The Northwest Power Planning Council (the Council) is an interstate compact agency authorized by the Northwest Power Act of 1980 (the NPA).[1] The Council is comprised of eight members—two each from the four states in the Columbia River Basin—who are appointed according to the appointment laws of their own state.[2] The NPA was enacted to achieve several congressional goals, including: (1) "to assure the Pacific Northwest of an adequate, efficient, economical, and reliable power supply;"[3] (2) to "protect, mitigate[,] and enhance the fish and wildlife, including related spawning grounds and habitat, of the Columbia River and its tributaries;"[4] and (3) to encourage public participation in energy and related environmental planning.[5] It is important to note that the NPA does not affect the validity of existing federal licenses,[6] or alter water or water related rights.[7] The Council's main responsibility under the NPA is to promulgate two programs to carry out these purposes of the NPA: (1) a regional electric power and conservation plan and (2) a basin-wide fish and wildlife program.

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[1] Pacific Northwest Electric Power Planning and Conservation Act of 1980, 16 U.S.C. §§ 839 to 839h (1994). Creation of the Council was authorized by *id*. § 839b(a)(2). The Council's full title in the NPA is the "Pacific Northwest Electric Power and Conservation Planning Council." *Id*. § 839b(a)(2)(A).

[2] 16 U.S.C. § 839b(a)(2)(B).

[3] 16 U.S.C. § 839(2).

[4] 16 U.S.C. § 839(6). Congress also emphasized the importance of enhancing and protecting "anadromous fish which are of significant importance to the social and economic well-being of the Pacific Northwest and the Nation and which are dependent on suitable environmental conditions substantially obtainable from the management and operation" of the Federal Columbia River Power System (the FCRPS). *Id*.

[5] 16 U.S.C. § 839(3). Both FCRPS customers and the "public at large" must be involved in developing the Council's regional energy and fish and wildlife conservation plans. *Id*.

Congress also enunciated three other purposes of the NPA: (1) to encourage conservation and efficiency in the use of electric power and the development of renewable resources in the Pacific Northwest; (2) to ensure that customers and users of power produced by the FCRPS (and marketed by BPA) "pay all costs necessary" to produce the power necessary for the region's power requirements; and (3) to ensure that non-federal entities' authority concerning the regulation and planning of electric power "be construed to be maintained." *Id*. §§ 839(1), (4)-(5).

[6] 16 U.S.C. § 839g(h) (the NPA does not affect contracts existing as of Dec. 5, 1980).

[7] *Id*. § 839g(i).

(1) Water Management

(A) Hydroelectric Conservation and Planning

The Council has created a regional electric power and conservation plan (power plan)[8] to govern the acquisition of energy resources,[9] including the development of an energy conservation and renewable resource program,[10] by the Bonneville Power Administration (BPA). The power plan must give priority to "cost-effective" resources.[11] Among cost-effective resources, the power plan must give priority to "conservation"[12] first, "renewable

[8] NORTHWEST POWER PLANNING COUNCIL, 1991 NORTHWEST CONSERVATION AND ELECTRIC POWER PLAN (1991). The NPA required the Council to promulgate the power plan within two years of the establishment of the Council. 16 U.S.C. § 839b(d)(1). The Council may amend the power plan "from time to time," but must "review" the power plan at least every five years. *Id*.

[9] The NPA defines a "resource" as electric power or the "actual or planned load reduction resulting from direct application of a renewable energy resource." 16 U.S.C. § 839a(19).

[10] The energy conservation and renewable resource acquisition requirements for BPA are located at 16 U.S.C. § 839d.

[11] 16 U.S.C. § 839b(e)(1). A cost-effective resource must be "forecast to" (1) be reliable and available within the time it is needed and (2) meet or reduce the electric power demand at an estimated incremental "system cost" no greater than that of the least costly alternative resource that is similarly available and reliable. *Id*. § 839a(4)(A); *see also* Michael C. Blumm & Brad L. Johnson, *Promising a Process for Parity: The Pacific Northwest Electric Power Planning and Conservation Act and Anadromous Fish Protection*, 11 ENVTL. L. 497, 512 n. 66 (1981). "System cost" is defined as an "estimate of all direct costs" of a resource "over its effective life" (including distribution and transmission costs, waste disposal costs, end-of-cycle costs, fuel costs, and certain "quantifiable" environmental costs). 16 U.S.C. § 839a(4)(B).

[12] "Conservation" means "any reduction in electric power consumption as a result of increases in the efficiency of energy use, production, or distribution." 16 U.S.C. § 839a(3).

resources"[13] second, "generating resources"[14] third, and "all other resources "fourth.[15] BPA is required to act consistently with the power plan, with some exceptions.[16]

(2) Fish and Wildlife Protection

(A) The Columbia River Basin Fish and Wildlife Program

The Council promulgated the Columbia River Basin Fish and Wildlife Program (the program)[17] to protect, mitigate, and enhance fish and wildlife (including related spawning grounds and habitat) in the Columbia Basin adversely affected by the development, operation, and management of the Federal Columbia River Power System (the FCRPS).[18] All measures in the

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[13] "Renewable resources" are resources which: (1) utilize solar, wind, hydro, geothermal biomass, or "similar sources of energy" and (2) are either used for electric power generation or will reduce the electric power requirements of a consumer. 16 U.S.C. § 839a(16).

[14] These are generating resources that either utilize waste heat or generate resources of high fuel conversion efficiency. 16 U.S.C. 839b(e)(1).

[15] 16 U.S.C. § 839b(e)(1). The NPA sets out a general scheme that requires the Council, in the power plan, to give "due consideration" to: (1) environmental quality; (2) compatibility with the existing regional power system; (3) protection, mitigation, and enhancement of fish and wildlife and related spawning grounds and habitat (including sufficient fiver flows to aid in migration); and (4) other criteria set forth in the power plan. *Id*. § 839b(e)(2).

The NPA also enunciated certain contents of the power plan, to be used to accomplish the specified priorities: (1) an energy conservation program, (2) recommendations for research and development, (3) a methodology for identifying "quantifiable environmental costs and benefits," (4) a demand forecast of at least 20 years, (5) an analysis of reserve and reliability requirements, (6) the Council's Columbia River Basin Fish and Wildlife Program (created under § 839b(h)), and (7) a methodology for calculating surcharges. *Id*. §§ 839b(e)(3)(A)-(G).

[16] 16 U.S.C. § 839b(d)(2). BPA is required to acquire its resources consistent with the power plan; however, this consistency determination is made by BPA itself. *Id*. § 839d(b)(1). Additionally, BPA may acquire other-than-major resources that are inconsistent with the power plan, so long as BPA determines that the acquisition is consistent with the priority requirements, *id*. § 839b(e)(1), and general scheme, *id*. § 839b(e)(2), outlined by the NPA. *Id*. § 839d(b)(2). BPA has the authority to acquire major resources that are inconsistent with the power plan if (1) BPA determines that the resource is needed to meet BPA's obligations under the NPA, and (2) acquisition of the particular resource is authorized subsequently by an act of Congress. *Id*. § 839d(c)(3) (inconsistency determination can be made either by BPA or the Council).

[17] NORTHWEST POWER PLANNING COUNCIL, COLUMBIA RIVER BASIN FISH AND WILDLIFE PROGRAM (Dec. 14, 1994) [hereinafter 1994 PROGRAM].

[18] 16 U.S.C. §§ 839b(h)(1)(A), 839b(h)(5). However, the Council's program must still assure the Pacific Northwest an adequate, efficient, economical, and reliable power supply. *Id*. § 839b(h)(5). Although never statutorily enunciated, the FCRPS, as defined by the NPA, includes the federally operated dams in the Basin (by the Corps and the Bureau) and non-federal dams in the Basin licensed by FERC.

program must satisfy five statutory criteria,[19] and the Council must "consider" four principles in promulgating the program.[20] Also, the Council must solicit and evaluate fish and wildlife recommendations from federal and state fishery agencies and Indian tribes.[21] Any other party may submit recommendations. If there is conflict among the recommendations, the Council must resole the inconsistency, giving "due weight" to the "recommendations, expertise, and legal rights and responsibilities" of the fish and wildlife agencies and tribes.[22] If the Council rejects any recommendation, it must make written findings explaining why the recommendation does not meet certain statutory standards, or would be less effective than other measures adopted by the Council.[23] In 1996, Congress amended the NPA to impose more duties on the Council in the implementation of its program through the Bonneville Power Administration fund.[24]

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[19] All program measures must (1) "complement the existing and future activities" of fishery agencies and tribes; (2) be based on the "best available scientific knowledge;" (3) use the alternative (where "equally effective alternative means of achieving the same sound biological objective exist") with the "minimum economic cost;" (4) be consistent with Indian treaty rights; and (5) provide for improved anadromous fish survival by providing river flows "of sufficient quality and quantity" to improve "production, migration, and survival of such fish." 16 U.S.C. §§ 839b(h)(6)(A)-(E).

[20] The four principles are (1) enhancement measures may be used to achieve offsite protection and mitigation to compensate for losses from the development and operation of the FCRPS; (2) consumers of the region's electric power must bear the cost of fish and wildlife mitigation measures caused by the FCRPS; (3) Program measures that require coordination with "additional measures" (including enhancement measures that address non-FCRPS related fish and wildlife impacts) must be "implemented in accordance with agreements among the appropriate parties providing for the administration and funding of such additional measures;" and (4) BPA must allocate costs and electric power losses (resulting from implementation of the Council's Program) consistent with individual project impacts. 16 U.S.C. §§ 839b(h)(8)(A)-(D).

[21] 16 U.S.C. § 839b(h)(2). Congress also set time deadlines for creating and amending the program. *Id*. § 839b(h)(9) (within one year of the receipt of recommendations).

[22] 16 U.S.C. § 839b(h)(7). The Ninth Circuit construed this section of the NPA to "require that a high degree of deference be given to fishery managers' interpretations of such provisions and their recommendations for program measures." Northwest Resource Info. Ctr., Inc. v. Northwest Power Planning Council, 35 F.3d 1371, 1388 (9th Cir. 1994), *cert. denied sub nom*. Pacific N.W. Generating Coop. v. Northwest Power Planning Council, 116 S. Ct. 50 (1995).

[23] 16 U.S.C. § 839b(h)(7). *See also* Northwest Resource Info. Ctr., Inc. v. Northwest Power Planning Council, 35 F.3d 1371, 1385-86 (9th Cir. 1994).

[24] The NPA was amended in 1996, in an appropriations rider sponsored by Senator Slade Gorton (R-Wa.). Energy and Water Development Appropriations Act, Pub. L. No. 104-206, § 504, 110 Stat. 2984, 3005-06 (1996) (amending § 839b(h)(10) of the NPA). The rider requires the Council to make recommendations to BPA concerning funding priority measures implementing the Council's program. *Id*. at 3005-06 (adding new § 839b(h)(10)(D)(iv)). The Council's recommendations must be based on "sound scientific principles; benefit fish and

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Under the NPA, BPA and federal water managers'[25] responsibilities are two-fold. First, they must exercise their responsibilities consistent with the purposes of the NPA "in a manner that provides equitable treatment for such fish and wildlife with the other purposes" for which federal projects are managed and operated.[26] These federal agencies must also take the Council's program "into account at each relevant stage of decisionmaking processes to the fullest extent practicable."[27] Additionally, BPA must use its funds and authorities to protect, mitigate, and enhance fish and wildlife to the extent affected by the FCRPS in "a manner consistent with" the Council's program.[28] However, the enforceability of the Council's program remains unclear.[29]

The Council's program calls for federal water managers to aid in increasing juvenile salmon survival rates. The Corps and the Bureau are to increase

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wildlife; and have a clearly defined objective and outcome with provisions for monitoring and evaluation." *Id*. The Council must establish an Independent Scientific Review Panel which will review fish and wildlife projects proposed for BPA funding. *Id*. (adding new §§ 839b(h)(10)(D)(i)-(ii)). The rider requires the Council to "fully consider" the panel's recommendations on priorities for project funding, and if the Council does not adopt the panel's recommendations, to explain its reasons for rejecting the recommendations in writing. *Id*. (adding a new § 839b(h)(10)(D)(vi)). Finally, the Council must determine whether "projects employ cost effective measures to achieve program objectives" and consider ocean impacts on fish and wildlife populations. *Id*.

[25] Federal water managers include the Army Corps of Engineers (Corps), the Bureau of Reclamation (Bureau), and Federal Energy Regulatory Commission (FERC).

[26] 16 U.S.C. § 839b(h)(11)(A)(i).

[27] 16 U.S.C. § 839b(h)(11)(A)(ii).

[28] 16 U.S.C. § 839b(h)(10)(A).

[29] BPA's general counsel has suggested that the "consistency" provision, 16 U.S.C. § 839b(h)(10), does not require BPA in every instance to implement the Council's program. *See Panel Discussion, Colloquium: Who Runs the River?*, 25 ENVTL. L. 417, 422 (1995) (remarks of Harvey Spigal). The Ninth Circuit seems to agree, stating that BPA "must act consistently with the Council's [P]rogram but in the end has final authority to determine its own decisions." Northwest Resource Info. Ctr., Inc. v. National Marine Fisheries Serv., 25 F.3d 872, 874 (9th Cir. 1994). The general counsel for the Council seems to agree as well:

> The Council's authority in the fish and wildlife area is constrained; it can guide, but not command, federal river management. The investment of federal hydropower revenues to help fish and wildlife must be "consistent" with the Council's [P]rogram, but . . . [BPA] actually writes the checks. The Council has no authority over fish and wildlife agencies, land managers, or irrigators. The Council is not toothless, but it cannot command and control.

John M. Volkman & Willis E. McConnaha, *Through a Glass Darkly: Columbia River Salmon, the Endangered Species Act, and Adaptive Management*, 23 ENVTL. L. 1249, 1254 (1993) (citation omitted). *But see* Michael C. Blumm, et. al., Beyond the Parity Promise: Struggling to Save Columbia Basin Salmon in the 1990s, 27 ENVTL. L. 21, 64-65 (1997) (arguing that the Council's program is no less enforceable than biological opinions implementing the Endangered Species Act).

river flows on the Columbia[30] and Snake[31] Rivers to aid juvenile migration. The Corps must also spill water over the tops of their dams (as opposed to releasing water through the turbines) to improve fish passage.[32] The Corps

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[30] 1994 PROGRAM, *supra* note 17, at 5-28 to 5-31. The Council calls for sliding scale monthly flow targets at The Dalles Dam for a three-year period, beginning at 300,000 cubic feet per second (cfs) in the first year and declining to 260,000 cfs and 220,000 cfs. *Id*. at 5-29. John Day Dam is also to be maintained at the minimum irrigation pool (MIP) level to aid in spring salmon migration. *Id*. at 5-29 to 5-30. MIP is the lowest level at which irrigation pumps at a Corps project will operate effectively. *Id*. at 5-29.

[31] 1994 PROGRAM, *supra* note 17, at 5-20 to 5-24. The program establishes a long-term objective for a minimum monthly flow average of 85,000 cfs to 140,000 cfs at Lower Granite for the spring migration. *Id*. at 5-20. The summer monthly flow target at Lower Granite is 50,000 cfs. *Id*. at 5-20. Dworshak may also be used by the Corps to aid in Snake River flow increases. *Id*. at 5-20 to 5-21, 5-23.

The Bureau is called on to provide 1.427 million acre-feet of water to augment flows in the lower Snake River. *Id*. at 5-21 to 5-22 (water may be obtained by purchase from willing sellers; water to be used from April 10 through September of each year). An acre-foot of water is the amount of water that covers one acre of land to a depth of one foot (or 325,850 gallons). *Id*. at G-1. The Bureau may secure this water incrementally. *Id*. at 5-21 (since 1992 the Bureau has been called on to provide 427,000 acre-feet of water, but in 1994 the Council called for 500,000 additional acre-feet in 1996, and 500,000 more acre-feet in 1998). BPA is to share equally in the costs of purchasing the additional one million acre-feet of water. *Id*. at 5-22. The Bureau must—along with the Corps, Idaho Power Company, and FERC—operate Brownlee Dam so that water is released to assist spring migrants. *Id*.

Idaho Power Company, a FERC licensee, is expected to draft Brownlee to provide 137,000 acre-feet for fall chinook migrants. *Id*. at 5-23. The Bureau (in conjunction with the state of Idaho and BPA) is to provide its water through water efficiency improvements, water marketing transactions, dry-year option leasing, storage buy-backs, and other measures. *Id*. at 5-23 to 5-24 (half to be secured by the Bureau and half by financial incentives provided by BPA and Idaho).

[32] 1994 PROGRAM, *supra* note 17, at 5-40 to 5-41. The Council's program calls for the Corps and Bureau to spill water over its mainstem projects to achieve 80% fish passage efficiency. *Id*. at 5-40. FPE is the total number of fish that pass a dam without passing through the turbines. *Id*. at G-5.

However, spill may cause nitrogen supersaturation in smolts, which may lead to gas bubble trauma under certain conditions. *See, e.g.*, NATIONAL MARINE FISHERIES SERV., U.S. DEP'T OF COMMERCE, ENDANGERED SPECIES ACT- SECTION 7 CONSULTATION: BIOLOGICAL OPINION: REINITIATION OF CONSULTATION ON 1994-1998 OPERATION OF THE FEDERAL COLUMBIA RIVER POWER SYSTEM AND JUVENILE TRANSPORTATION PROGRAM IN 1995 AND FUTURE YEARS 48 (Mar. 2, 1995)[hereinafter 1995 BIOP]. Thus, the Council's program requires all spill to be consistent with state water quality levels set under the Clean Water Act. 1994 PROGRAM, *supra* note 17, at 5-36, 5-40. The Corps and NMFS must perform a study on dissolved gas supersaturation. *Id*. at 5-40. The Corps must also fund or install certain dissolved gas monitoring and abatement measures. *Id*. at 5-40 to 5-41.

A spill program at mainstem dams had been in place since December 31, 1988, when in order to settle a lawsuit, BPA, fishery agencies, tribes, and utility representatives negotiated a ten-year spill agreement covering Lower Monumental, Ice Harbor, John Day, and The Dalles Dams. *Id*. at 5-36; *see also* Michael C. Blumm & Andy Simrin, *The Unraveling of the Parity Promise: Hydropower, Salmon, and Endangered Species in the Columbia Basin*, 21 ENVTL. L. 657, 699-700 (1991) [hereinafter *Unraveling Parity*] (discussing the lawsuit and the settlement). The Council adopted the spill agreement as part of its program in 1989.

is to also draw down the reservoir levels of certain projects to aid in juvenile migration.[33] Before 1994, the Council's program called for the Corps, in consultation with fish and wildlife agency and tribal managers, to continue[34] the out-of-river transportation (by barge and truck) of juvenile salmon from Snake River dams[35] in order to avoid juvenile mortalities that occur when smolts pass through the power-generating turbines at Corps dams. But since

(continued)

Unraveling Parity, *supra*, at 699-700. But the Council's 1994 program differs in two ways from the old spill agreement: (1) the adoption of a higher FPE rate, and (2) spill at all Snake River projects instead of merely at Lower Monumental and Ice Harbor. 1994 PROGRAM, *supra* note 17, at 5-36.

The Council's program includes other measures to improve passage in the Columbia and Snake Rivers, including a requirement that the Corps ensure a 98% or greater salmon survival rate "in all bypass and collection facilities from the deflector screens or surface bypass system entrances to the end of the bypass system outfall." *Id*. at 5-37. Other passage improvements in the Council's program address the operations of FERC licensees. *Id*. at 5-38 to 5-40.

[33] The only drawdown called for on the Columbia River is at John Day Dam, to begin in 1996. By April 15, 1996, the Corps and BPA were to operate John Day at minimum operating pool (MOP) year-round. 1994 PROGRAM, *supra* note 17, at 5-32 (conditioned on full, prior mitigation to irrigators and other water users). MOP is the lowest water level at a project at which navigation locks can still operate. *Id*. at G-9. The Corps and BPA were to (by April 30, 1996) complete a review of any operational or design changes necessary to operate John Day at near-spillway level by 2002. *Id*. at 5-32 (John Day could possibly be operated at near-spillway level either (1) from May 1 to August 31 of each year or (2) year-round). A spillway is the channel or passageway around or over a dam through which excess water is released or "spilled" without passing through the turbines. *Id*. at G-12 (a spillway operates as a safety valve for a dam and must be able to discharge major floods without damaging the dam, while also maintaining the reservoir level below some predetermined maximum level). Thus, a drawdown to near-spillway level is a drawdown to a level near this structure.

The Council's program called for phased drawdowns on the lower Snake River. For the spring migration season of 1995, the Corps was to draw down Lower Granite to an elevation of 710 feet. *Id*. at 5-25 (the Corps and BPA were also charged with securing any funds necessary to permit the drawdown, including mitigation costs). In 1996, Lower Granite was to be drawn down to an elevation of 690 feet for the spring migration season. *Id*. at 5-26. Lower Granite drawdowns are to continue until 2002. *Id*.

Little Goose is to be drawn down to near-spillway level for the spring migration season in 1999. *Id*. This drawdown will also continue until 2002. *Id*. In 2002, the Council will determine whether to drawdown the two remaining lower Snake River projects—Lower Monumental and Ice Harbor. *Id*. at 5-27. These drawdowns could be to either spillway or natural river levels. *Id*.

[34] The Corps has transported juvenile salmon regularly since 1981. 1994 PROGRAM, *supra* note 17, at 5-46; *see also* PHILLIP R. MUNDY ET AL., TRANSPORTATION OF JUVENILE SALMONIDS FROM HYDROELECTRIC PROJECTS IN THE COLUMBIA RIVER BASIN: AN INDEPENDENT PEER REVIEW 7, 14 (May 1994) (smolt transportation began in the Columbia Basin in the late 1960s and early 1970s, NMFS transported fish for research projects at Snake River dams throughout the 1970s, and the Corps first began transporting all smolts collected at Snake River dams in 1981).

[35] 1994 PROGRAM, *supra* note 17, at 5-46 to 5-47.

1994, the Council's program calls for reduced numbers of juvenile salmon to be transported, limiting the use of transportation to "extremely adverse" conditions—with transportation decisions to be made by Columbia Basin fishery agencies and tribes.[36] BPA, the Corps, and certain FERC licensees are to implement measures to benefit juveniles by reducing predation and competition.[37]

The Council's program also calls on BPA to fund numerous hatchery projects outlined by the Council.[38] BPA, the Corps, and certain Federal Energy Regulatory Commission (FERC) licensees are expected to implement measures to improve adult salmon migration.[39] The program contains numerous measures to benefit and protect resident fish.[40] The program outlines procedures for BPA and federal water managers to follow in any future hydroelectric development.[41] Under the program's "protected areas" provisions, FERC is called upon to protect approximately 44,000 miles of anadromous fish streams and high-quality resident fish and wildlife habitat from new hydropower development.

While the program's principal objective is the protection, mitigation, and enhancement of Columbia Basin fish and wildlife, one of its primary impacts

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[36] 1994 PROGRAM, *supra* note 17, at 5-47. The Council expects "significantly fewer than half the juveniles would be transported in any year" in which no extremely adverse conditions exist. *Id*. at 5-47. The Council's program also calls upon the Corps to improve transportation operations and upgrade transportation facilities. *Id*. at 5-48.

[37] *Id*. at 5-42 to 5-46 (§ 5.7 of the Council's program).

[38] *Id*. at 7-2 to 7-63 (§ 7 of the Council's program). The program also calls for certain hatchery funding or operational activities by Indian tribes, NMFS, certain FERC licensees, the four Columbia Basin states, the Bureau, the Corps, the USFWS, the Forest Service, and BLM.

[39] *Id*. at 6-1 to 6-6 (§ 6 of the Council's program). BPA and the Corps are to use Dworshak Dam for temperature control if its elevation is above 1,520 feet at the end of July. *Id*. at 6-4. Idaho Power Company, a FERC licensee, is to draft 100,000 acre-feet from Brownlee Dam in September of each year to help reduce water temperatures in the Snake River. *Id*.

[40] *Id*. at 10-1 to 10-20 (§ 10 of the Council's program). For example, the Bureau must provide flows from Hungry Horse Dam for resident fish mitigation. *Id*. at 10-4 to 10-7 (if the integrated rule curves at Hungry Horse are exceeded for flood control purposes, the Corps must fund "the mitigation of fish losses to the extent those losses are caused by system flood control operations"). The Council also recommended that the Bureau operate other projects (including Grand Coulee Dam) to protect resident fish. *Id*. at 10-11. At Libby Dam, the Corps is to ensure that sufficient flows are provided to protect resident fish. *Id*. at 10-7 to 10-10 (the Corps must also fund the mitigation of fish losses due to system flood control operations).

[41] *Id*. at 12-1 to 12-6 (§ 12 of the Council's program). *See id*. at 12-1 to 12-3 for the list of conditions that BPA and federal water managers must adhere to in future hydroelectric development.

is economic. BPA fish and wildlife funds provide more than 200 million dollars per year for mitigation measures including direct funding for projects under the Council's program (100 million); reimbursements to other federal agencies for operation and maintenance costs (35 million); and repayments to the United States Treasury for capital costs (75-85 million). In addition, Bonneville absorbs the costs of dam operations such as water releases for flow augmentation and spills, variously valued at 150, 160, or 183 million dollars.[42] Taken together, these are the dominant elements in Columbia River fish and wildlife mitigation funding.

In 1996, BPA and other federal agencies signed a memorandum of agreement committing BPA to use $252 million per year for fish and wildlife mitigation, plus the cost of river operations under the Endangered Species Act and the Council's program.[43] The agreement also allows BPA to tap a contingency fund consisting of several hundred million dollars in U.S. Treasury credits, available under limited circumstances.[44] Finally, the agreement commits the federal parties to collaborate more closely with the Council and the region's Indian tribes in federal budget development, and in monitoring and evaluating fish and wildlife recovery.[45]

(B) The Endangered Species Act

The Endangered Species Act (the ESA)[46] protects species listed as either endangered or threatened[47] and imposes substantive duties on federal action agencies. The action agency must ensure that its activities are not likely to (1) jeopardize the continued existence of listed species or (2) adversely modify

[42] Letter from John Etchart, Chairman, Northwest Power Planning Council, to Don Young, Chairman, U.S. House Committee on Resources (Mar. 21, 1996) (on file with the Northwest Power Planning Council).

[43] MEMORANDUM OF AGREEMENT AMONG THE DEPARTMENTS OF THE ARMY, COMMERCE, ENERGY, AND INTERIOR CONCERNING THE BONNEVILLE POWER ADMINISTRATION'S FINANCIAL COMMITMENT FOR COLUMBIA BASIN FISH AND WILDLIFE COSTS (SEPT. 16, 1996).

[44] *Id*. Use of the $325 million contingency fund is limited to circumstances dictated by adverse water conditions, court orders, natural disasters declared by the President, and "fisheries emergencies jointly declared by resolution of the Secretaries of the Interior and Commerce." *Id*. Access to the contingency funds is also limited "in the aggregate" to $15 million per year. *Id*.

[45] *Id*.

[46] 16 U.S.C. §§ 1531 to 1544 (1994).

[47] The Secretaries of Interior and Commerce make listing determinations. 16 U.S.C. § 1533(a)(1); *see also* 50 C.F.R. pt. 424 (1995). Interested persons may petition the Secretary to list a species. 16 U.S.C. § 1533(b)(3)(A); *see also* 50 C.F.R. § 424.14.

the critical habitat of such species.[48] Any proposed action that is likely to jeopardize a listed species or adversely affect its critical habitat requires the action agency to consult with either the USFWS or NMFS.[49] The ESA also prohibits action agencies from "taking" any endangered species.[50] Taking is defined broadly to include harassing or harming species,[51] but incidental take "statements" (similar to permits) may be issued by the expert agency.[52] In 1986, the Ninth Circuit determined that because Congress created the Council to represent state concerns the Council constitutes an interstate compact agency rather than a federal agency.[53] Therefore, ESA requirements do not apply to the Council's activities. However, the Council's program must "complement" fish and wildlife activities (presumably including ESA activities),[54] and federal agencies that adopt and implement directives from the Council's program must satisfy ESA requirements.[55]

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[48] 16 U.S.C. § 1536(a)(2). The Secretaries of Interior and Commerce must, "to the maximum extent prudent and determinable," designate critical habitat concurrent with the listing of a species. *Id*. § 1533(a)(3)(A); *see also* 50 C.F.R. § 424.12 (criteria for designating critical habitat). BPA also has an affirmative obligation under the ESA to take actions to conserve listed species. 16 U.S.C. § 1536(a)(1).

[49] 16 U.S.C. § 1536(a)(2). USFWS (Department of the Interior)(non-marine species) and NMFS (Department of Commerce)(marine species) are the two federal agencies which share responsibility for administering the ESA. 50 C.F.R. § 402.01(b). *See infra* §§ 2.8(2)(A) (USFWS), 2.7(2)(A) (NMFS).

[50] The ESA prohibits all persons (including federal agencies) from the "taking" of any endangered fish and wildlife species. 16 U.S.C. § 1538(a)(1). Federal regulations expand this prohibition to threatened species as well. 50 C.F.R. § 17.31(a).

[51] The ESA defines "take" as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in such conduct. 16 U.S.C. § 1532(19). Federal regulations further define "harm" as any act that actually kills or injures wildlife, including "significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering." 50 C.F.R. § 17.3. This regulation was upheld by the Supreme Court. *Babbitt* v. *Sweet Home Chapter*, Communities For A Greater Oregon, 115 S. Ct. 2407 (1995).

[52] An incidental take is a taking that results from, but is not the purpose of, "carrying out an otherwise lawful activity conducted by the Federal agency or applicant." 50 C.F.R. § 402.02. An incidental take requires a statement issued by the expert agency during formal consultation that sets out the terms and conditions that must be complied with by the federal agency. *Id*. § 402.14(i). Incidental take statements may be included in a BiOp. For example, the 1995 BiOp issued by NMFS concerning the effect of the operation of the FCRPS on listed Snake River salmon contained an incidental take statement. *See* 1995 BIOP, *supra* note 32, at 159.

[53] Seattle Master Builders Assoc. v. Pacific Northwest Electric Power and Conservation Planning Council, 786 F.2d 1359 (9th Cir. 1986), *cert. denied*, 479 U.S. 1059 (1987).

[54] 16 U.S.C. § 839b(h)(6)(A).

[55] *See* § 2.1(2)(A) for a discussion of ESA consultation requirements.

(3) Environmental Regulation

(A) The National Environmental Policy Act

The National Environmental Policy Act (NEPA)[56] requires any federal agency to complete a detailed statement on the environmental impacts of any "major Federal actions significantly affecting the quality of the human environment."[57] However, because the Ninth Circuit recognizes the Council as an interstate compact agency and not a federal agency,[58] NEPA requirements do not apply to the Council's activities. Federal agencies that adopt and implement directives from the Council's program must satisfy NEPA requirements.[59]

(4) Land Management

(A) The Columbia River Basin Fish and Wildlife Program

While not binding on federal land managers,[60] the Council's program nonetheless makes several recommendations for the BLM and the Forest Service to follow. Both agencies are called upon to develop and implement procedures that comply with the Council's habitat goal, which is to "[p]rotect and improve habitat conditions to ensure compatibility with the biological needs of salmon, steelhead[,] and other fish and wildlife species."[61] The Council also recommends that both agencies continue to implement on-going

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[56] 42 U.S.C. §§ 4321 to 4370d (1994).

[57] 42 U.S.C. § 4332(2)(C). For a discussion of what constitutes a "major federal action," see GEORGE C. COGGINS & ROBERT L. GLICKSMAN, 2 PUBLIC NATURAL RESOURCES LAW §§ 10G.03[2] to 10G.04 (1996). There has been much litigation surrounding what is a "major" action, *see id.* § 10G.04, and what is a "federal" action. *Id.* § 10G.03[2] (the key factor in determining whether an action is "federal" is the "agency's authority to influence significant nonfederal activity. . . . [T]he federal agency must possess actual power to control the nonfederal activity") (quoting Sierra Club v. Hodel, 848 F.2d 1068, 1089 (10th Cir. 1988)); *see also* 40 C.F.R. § 1508.18.

[58] Seattle Master Builders Assoc. v. Pacific Northwest Electric Power and Conservation Planning Council, 786 F.2d 1359 (9th Cir. 1986), *cert. denied*, 479 U.S. 1059 (1987).

[59] *See* § 2.1(2)(A) for a discussion of NEPA requirements.

[60] The "consistency" and "take into account" provisions of the NPA apply only to BPA and other federal agencies "responsible for managing, operating, or regulating" federal and non-federal "hydroelectric facilities located on the Columbia River and its tributaries." 16 U.S.C. § 839b(h)(11)(A). In short, the Corps, the Bureau, and FERC.

[61] 1994 PROGRAM, *supra* note 17, at 7-33 to 7-36.

land management strategies specific to the Columbia Basin.[62] The program encourages land exchanges or purchases to improve and maintain salmon and steelhead production in habitat areas located on private lands.[63]

The Council recommends that the Forest Service and BLM require fish screens and other passage facilities as a condition for any new or existing water use authorizations.[64] The Council also asks BLM to include pertinent elements of the program in conditions BLM attaches to projects exempt from FERC licensing.[65] The Council requests that both agencies incorporate the program into their permit procedures for licensing FERC projects on lands managed by the agencies.[66] The Forest Service was also asked to help fund a program to protect and rebuild Snake River sockeye.[67]

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[62] *Id*. at 7-44 to 7-45 (including implementing any actions needed for recovery in streams where either water quality objectives or land management objectives for habitat and water quality are not being met). The Program also directs BLM and the Forest Service to work with model watershed committees to identify and protect habitat associated with perennial and intermittent streams "that contribute to anadromous and resident fish production, regardless of whether a particular portion of a stream is fish-bearing." *Id*. at 7-45 to 7-46.

[63] *Id*. at 7-46. BLM and the Forest Service may exchange lands, purchase lands, or obtain easements. *Id*. The acquisition of easements should be the preferred approach in protecting these riparian areas and adjacent lands. *Id*.

[64] *Id*. at 7-55 (this section also applies to the Bureau). *See supra* §§ 2.5(1) (Forest Service), 2.6(1) (BLM) for more on Forest Service and BLM authority over water use on national forest and public lands.

[65] 1994 PROGRAM, *supra* note 17, at 12-5. FERC licenses and exemptions issued after 1992 for projects located on BLM-managed lands require a right-of-way permit pursuant to the Federal Land Policy and Management Act (FLPMA). 43 U.S.C. §§ 1761(a)(4), (d) (1994). The Council's request also applies to fish and wildlife recommendations by NMFS and the USFWS (and state fish and wildlife agencies) for projects exempt from FERC licensing pursuant to the FPA. 16 U.S.C. § 823a(c).

[66] 1994 PROGRAM, *supra* note 17, at 12-5. FERC may issue licenses in federal land reservations managed by the Forest Service, so long as FERC: (1) finds that the project will not interfere or be inconsistent with the reservation's purpose and (2) includes in the license any conditions deemed necessary by the Forest Service. 16 U.S.C. § 797(e). Once FERC issues notice that a license application is "ready for environmental analysis," federal land management agencies have 60 days to file their conditions. 18 C.F.R. § 4.34(b) (1996). Federal land management agencies must "specifically identify and explain the mandatory terms and conditions or prescriptions and their evidentiary and legal basis." *Id*. § 4.34(b)(1).

[67] 1994 PROGRAM, *supra* note 17, at 7-28 (along with NMFS and BPA).

4.1 Idaho

(1) Department of Water Resources

The Department of Water Resources (Department) is responsible for managing Idaho's water resources according to the general policies established by the Idaho Water Resource Board (Board).[1] The day-to-day management authority of the Department is vested in the Director,[2] who is required to administer and enforce the state's water resources law as defined by statute, [3] and carry out any other duties delegated by the Board.[4] The

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[1] The Board is empowered to formulate and implement a state water plan for optimum development of the state's "unappropriated" water resources in the public interest. IDAHO CONST. art. 15, § 7. *See also* IDAHO CODE § 42-1734A (requiring the Board to formulate and develop a comprehensive state water plan for the conservation, development, management, and optimum use of all "unappropriated waters" in the state). The Board can develop the plan based on waterways, river basins, drainage areas, river reaches, groundwater aquifers, or any other geographic consideration so long as each component of the plan describes the water resource that is the subject of the plan, the significant resources included in the waterway, the various existing and planned uses for the waterway, and the goals and objectives for improving or conserving the waterway. *Id*. § 1734A(2)(a)-(d). For a discussion of the comprehensive water planning process, see *infra* § 2.4(1)(D).

Generally, the Board is not responsible for setting Department of Water Resources policy relating to the administration of "appropriated" waters; this responsibility rests with the Director of the Department. The Board refrains from playing an oversight role over Department water right allocation and enforcement decisions because the Board itself is a holder of water rights, and is often an applicant for water right permits being considered by the Department. *See infra* § 4.1(1)(D) (discussing Idaho's minimum streamflow program).

[2] The Director must be a licensed civil or hydraulic engineer with at least five years experience, and must be familiar with irrigation in Idaho. IDAHO CODE § 42-1701 (1996).

[3] IDAHO CODE § 42-1706 (1996). These statutorily-imposed duties include: (1) the careful measurement of the flow of the various state streams and waters that may be subject to appropriation; (2) the collection of data necessary to make surveys to find suitable locations for reservoirs; (3) familiarity with the needs of the state as to irrigation matters; and (4) the management of full and complete records of all measurements of streams, surveys, and any other information collected in carrying out the duties of the department. *Id*.

[4] IDAHO CODE § 42-1805(6) (1996) (requiring the director to "perform administrative duties and such other functions as the Board may from time to time assign to the Director to enable the Board to carry out its powers and duties"). The Governor is responsible for appointing an eight-member Board, no more than four of which can be members of the same political party. *Id*. § 42-1732. The Senate must ratify the Governor's appointments. *Id*. In addition, to ensure equal representation of water users within the state, at least one member must be appointed from each of the four districts (comprised of counties) identified by statute. *Id*.

While the Department is the state entity responsible for the day-to-day management of Idaho's water resources, the Board serves primarily a policy-making function. The responsibilities of the Board are broad-based: establish the general policies necessary to guide the management of Idaho's water resources, and oversee the operation and management of the Department. IDAHO CODE § 42-1734.

The powers and duties of the Board also include the ability to: (1) initiate court proceedings to adjudicate water rights to a particular water source; (2) initiate, finance, and acquire the water rights necessary to construct, operate, and maintain water projects; (3) develop and propose legislation necessary to assist it in the conservation, development, and utilization of state water resources; and (4) issue procedural and substantive rules and

Department's primary responsibilities regarding the management of Idaho's water resources include: (1) supervising the allocation and distribution of water; (2) issuing water rights and establishing rules to govern the change or transfer of water rights if a change in use is contemplated after the sale of such rights; (3) participating in the state's water rights adjudication process; (4) approval of all minimum stream flows; (5) providing staff and technical support to the Board concerning Idaho's protected rivers program; and (6) administering Idaho's stream channel protection program.[5]

(A) Supervisory Control Over the Allocation and Distribution of Water

The Department has control over the "distribution of water from all natural water sources within a water district," and to all "canals, ditches, pumps and other facilities diverting therefrom."[6] Director-appointed watermasters,[7] responsible for monitoring water use within each district in conformance with state law, supervise water distribution in water districts.[8] In addition to

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regulations. *Id*. §§ 42-1734(2), (4)-(8), (18), (19).

[5] For discussion of each of these duties, see *infra* §§ 4.1(1)(A) to 4.21(1)(F). For other Department responsibilities, see IDAHO CODE § 42-238 (licensing of well drillers and well construction standards); *id*. §§ 42-3913 to 42-3915 (construction and use of injection wells); *id*. § 42-4003 (drilling for geothermal resources); *id*. § 42-1714 to 42-1721 (mine tailing impoundment structures); *id*. §§ 42-1709 to 42-1721 (safety of dams); *id*. § 42-1761 to 42-1765 (water supply bank); *id*. § 42-1760 (water management account). In addition, the Department has an active role in the implementation of Idaho's Ground Water Quality Plan, including the development of a statewide ambient water quality monitoring network. *See* GROUND WATER QUALITY COUNCIL, IDAHO GROUND WATER QUALITY PLAN: PROTECTING GROUND WATER QUALITY IN IDAHO 41, 51 (Dec. 1996).

[6] IDAHO CODE § 42-602 (1996). The Director is ordered to divide the state into water districts so that "each public stream and tributaries, or independent source of water supply, shall constitute a water district[.]" *Id*. § 42-604.

[7] Each watermaster is elected by the water users within a water district. The Director must then formally appoint the elected watermaster. IDAHO CODE § 42-605(3) (1996). For additional statutory requirements pertaining to the removal of a watermaster, see *id*. §§ 42-605(8), (9).

[8] IDAHO CODE § 42-607 (1996). The watermaster is directed to distribute the waters of the public streams within a water district according to the rights of each user. *Id*. The role of the watermaster in the distribution of water includes the duty to shut off a particular water user's headgates in times of scarcity to preserve prior rights. *Id*.

Each watermaster is required to submit to the Director each year an annual report documenting (1) the total amount of water delivered by the watermaster during the previous year, (2) the amount delivered to each user, (3) the total expense of delivery, and (4) the apportionment of the expenses of delivery among the various users. *Id*. § 42-606.

For Idaho's laws regarding the installation and maintenance of headgates and measuring devices, see *id*. §§ 42-701 to 42-715. *See also* IDAHO ADMIN. CODE § 42-701 (1996). Idaho has special rules governing the use of measurement devices in the Big Lost River Basin. *Id*. § 37.03.12.035 (1996). In the Big Lost River Basin, all users except small

controlling the allocation and distribution of water within certain specified water districts, the Department can also halt water diversions from any water source where no valid water right exists or where the use of such water is not in conformance with the conditions of a valid water right.[9]

(B) Issuance of Water Rights

The Idaho Water Code defines the nature of property in water, providing that "[a]ll the waters of the state, . . . are declared to be the property of the state."[10] The right to use water in Idaho is governed both constitutionally and statutorily by the doctrine of prior appropriation.[11] Therefore, the right to use water is granted on the basis of priority; the first user to divert water from a particular source and apply such water to a beneficial use obtains

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domestic and stock water users from groundwater must install and maintain measuring devices at their own expense at all points of diversion. *Id*. Water conveyance entities in the Big Lost River Basin must also install and maintain measuring devices. *Id*.

In addition, the Director of the department is authorized by statute to create water measurement districts to help carry out the state policy regarding the measurement of water use. IDAHO CODE § 42-705 (1996). The Director has control over all measurements within each created district from all public water uses, surface or ground. *Id*. Idaho is divided into water measurement districts, with any state-recognized water district excluded from the process. *Id*. § 42-706. All hydropower, instream flow, aquaculture, or irrigation district appropriators may petition to be excluded from a water measurement district, but must show that they are making accurate measurements by acceptable methods and submit a report to the Director similar to that required of a water measurement district as per Idaho Code § 42-708. *Id*. § 42-706. The intricacies of a water measurement district (the creation and electoral logistics of such districts, the annual reports of the district hydrographer, and the measurement requirements to be followed by the hydrographer) are laid out by statute. *Id*. §§ 42-707 to 42-715.

[9] *See* IDAHO CODE § 42-350 (1996) (allowing the Director to revoke license to divert water where user has failed to put such water to beneficial use for five continuous years or has willfully or intentionally failed to comply with the conditions placed in such license); *id*. § 42-351 (allowing the Director to obtain cease and desist order whenever it is found that a user is "diverting water or has diverted water from a natural watercourse or from a ground water source without having obtained a valid water right to do so or is applying water or has applied water not in conformance with a valid water right").

For a discussion of the water right permit process and how one obtains a valid right to utilize water in Idaho, see *infra* § 4.1(1)(B).

[10] IDAHO CODE § 42-101 (1996). *See also id*. § 42-226 (declaring all groundwater sources to be public waters).

[11] IDAHO CONST. art. 15, § 3 (1993) ("[p]riority of appropriations shall give the better right as between those using the water"); Idaho Code § 42-106 ("[a]s between appropriators, the first in time is first in right"). The prior appropriation doctrine applies to both surface and ground water appropriators. *See id*. §§ 42-103, 42-229. *See also* IDAHO CONST. art. 15, § 3 ("[t]he right to divert and appropriate the unappropriated waters of any natural stream to beneficial uses, shall never be denied").

priority.[12] Every appropriation of water in Idaho must be for a "beneficial purpose," and such purpose serves as the baseline requisite in determining both the right to use water and the amount of water that can be allocated for a particular use.[13]

The right to use water in Idaho must be acquired pursuant to the application, permit, and license procedures established by the state's water code. This applies to both surface and ground water applications.[14] In processing water right applications to divert surface and groundwater, the Department has adopted a conjunctive management approach.[15] This approach is defined as the "[l]egal and hydrologic integration of administration of the diversion and use of water under water rights from

[12] While there is no "physical diversion" requirement in the state constitution, Idaho's Supreme Court has held that the state water code does require a diversion in order to appropriate water. State Dep't of Parks v. Idaho Dep't of Water Admin., 530 P.2d 924, 928-29 (1974). However, no diversion is required where the legislature has specifically authorized a state agency to appropriate water for instream flow water rights. *See* IDAHO CODE §§ 42-1501 to 42-1505; and Phillip J. Rassier, *Idaho, in* 6 WATERS AND WATER RIGHTS 324 (Robert E. Beck ed., 1991). *See infra* § 4.1(1)(D), for a discussion of Idaho's minimum streamflow protection program.

[13] IDAHO CODE § 42-104 (1996). The Idaho Constitution specifically deems various purposes "beneficial:" agriculture, mining, manufacturing, milling, power, and domestic. IDAHO CONST. art. 15, § 3. The state water code does not place statutory limitations on what can constitute a beneficial use, and the Idaho Supreme Court has held that the beneficial uses identified by the constitution are not exclusive. State Dep't of Parks v. Idaho Dep't of Water Admin., 530 P.2d 924, 927-28 (1974) (holding that water used for recreation and scenic beauty could be deemed "beneficial" under certain circumstances).

[14] *See* IDAHO CODE § 42-103 (1996) (right to use unappropriated surface waters must be acquired pursuant to statutory procedure); and § 42-229 (right to use unappropriated groundwater must be acquired pursuant to statutory procedure).

The Idaho legislature made all groundwater appropriations subject to the mandatory licensing procedures in 1963, and did the same for all surface water appropriations in 1971. Phillip J. Rassier, *Idaho, in* 4 WATERS AND WATER RIGHTS 324 (Robert E. Beck ed., 1991). All surface and ground water rights established by diversion and application of the water to beneficial use prior to those dates were referred to as "beneficial" or "constitutional" use water rights. *Id*. Such rights, other than those for domestic purposes, were required to be filed with the Department by June 30, 1983, or were deemed relinquished unless claimed in a general water rights adjudication commenced prior to June 30, 1988. IDAHO CODE §§ 42-243, 42-245.

[15] *See generally* IDAHO ADMIN. CODE § 37.03.11 (1996). The rules govern situations where the diversion and use of water by a junior-priority groundwater user (either individually or collectively with other groundwater appropriators) causes material injury to a surface user who has a prior right. *Id*. § 37.03.11.020.01. Special water distribution rules apply in both the Eastern Snake Plain Aquifer and the Big Lost River Basin (Water District 34). *Id*. §§ 37.03.11.050, 37.03.12.

surface and ground water sources, including areas having a common ground water supply."[16] The Director is responsible for the issuance of all permits to divert and use water in Idaho.[17]

Each person intending to "acquire the right to the beneficial use" of Idaho's waters must submit an application to the Department for a permit.[18] The application must include: (1) the name and address of the applicant; (2) the source of the water supply; (3) the proposed use or uses of the water and the time of year during which the water will be used; (4) the location of the diversion point and description of the proposed ditch, channel, or well and the amount of water to be diverted for use; and (5) the time required for the completion of the work and application of the water to the proposed use.[19] In addition, each application must be accompanied by a plan and map of the proposed diversionary works.[20]

Upon receipt of an application, the Department must give public notice of the filing.[21] Anyone is allowed to protest an application to divert water.[22] If a protest is filed, a hearing must be held within sixty days from the date the Department receives the protest.[23] If no protest is filed, a hearing is not

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[16] IDAHO ADMIN. CODE § 37.03.11.010.03 (1996).

[17] IDAHO CODE § 42-202 (1996).

[18] IDAHO CODE § 42-202 (1996). The application must be filed prior to the commencement of any activities concerning the "construction, enlargement or extension of the ditch, canal, well, or other distributing works, or performing any work in connection with said construction or proposed appropriation or the diversion of any waters into a natural channel." *Id*.

Only the diversion of groundwater for domestic purposes is exempt from the statutory permit procedure; all other appropriators must comply. *Id*. § 42-227.

[19] IDAHO CODE § 42-202(1)(a)-(e) (1996). A fee is charged for each application with the amount varying depending on the amount of water that is proposed for appropriation. *Id*. § 42-221.

[20] IDAHO CODE § 42-202(4) (1996). The plan and map must show the character, location and dimensions of the proposed reservoirs, dams, canals, ditches, pipelines, wells, and all other works to be used for the diversion of water. *Id*.

[21] IDAHO CODE § 42-203A (1996). The notice must specify: (1) the number of the application; (2) the date of filing; (3) the name and address of the applicant; (4) the source of the water supply; (5) the amount of water to be appropriated; (5) the nature of the proposed use; (6) the location of the diversion; and (7) the point of use. *Id*. § 42-203A(1)(a)-(h). The notice must also clarify that any protest of the application must be filed within ten days of publication of the notice. *Id*. Ordinarily, the notice need only be published in the county where the point of diversion is located, but statewide circulation is required for proposed diversions in excess of ten cubic feet per second or one thousand acre-feet. *Id*. § 42-203(2).

[22] *IDAHO CODE* § 42-203A(4) (1996). The protest must state the name and address of, and be signed by, the objector, and provide detail of specific objections. *Id*. There is a $50 filing fee for each protest. *Id*. § 42-222.

[23] IDAHO CODE § 42-203(4) (1996).

required and the Director may approve such application if it conforms to the requirements imposed by both the water code and the administrative regulations promulgated by the Department.[24]

The Director may reject any application to use water if: (1) the proposed use will reduce the quantity of water under existing rights; (2) the water supply itself is insufficient for the purpose for which it is sought to be appropriated;[25] (3) the Director determines that the application is not made in good faith or merely for delay or speculative purposes; (4) the applicant does not have enough money to complete the project; (5) the project will conflict with the local public interest; [26] or (6) the proposed use is contrary to the conservation of Idaho's water resources.[27] The Director may approve in whole or in part, condition, or deny an application to appropriate water.[28]

Once granted, a water right permit holder has five years to complete the project and apply the water to beneficial use.[29] Once the permit holder submits proof of beneficial use, the Department examines the use of water

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[24] *Id*. For the Department's water appropriation rules see IDAHO ADMIN. CODE § 37.03.08 (1996).

[25] The water supply will be deemed insufficient for the proposed use "if water is not available for an adequate time interval in quantities sufficient to make the project economically feasible (direct benefits to applicant must exceed direct costs to applicant), unless there are noneconomic factors that justify application approval." IDAHO ADMIN. CODE § 37.03.08.045.01(b) (1996).

[26] "Local Public Interest" is defined as "the affairs of the people in the area directly affected by the proposed use." IDAHO CODE § 42-203A(5)(e). The Idaho Supreme Court maintains that the public interest considerations in Idaho's Water Code are directly related to the public trust doctrine. Shokal v. Dunn, 707 P.2d 441, 447 (Idaho 1985). In addition, the Idaho Supreme Court has held that the public trust doctrine applies to the water appropriation process. Kootenai Envtl. Alliance, Inc. v. Panhandle Yacht Club, Inc., 671 P.2d 1085, 1094 (Idaho 1983) (holding that "the public trust doctrine takes precedent even over vested water rights," and that "[g]rants to individuals of public trust resources will be construed as given subject to the public trust doctrine unless the legislature explicitly provides otherwise"). *See also* Idaho Conservation League v. State, 911 P.2d 748 (Idaho 1995) (noting that proprietary rights to use water "are held subject to the public trust"). However, in 1996, Idaho enacted legislation to eliminate the application of the public trust doctrine in the water rights context. *See* IDAHO CODE § 1203(2)(b) (1996) (directing that the public trust doctrine does not apply to "[t]he appropriation or use of water, or the granting, transfer, administration, or adjudication of water or water rights").

[27] IDAHO CODE § 42-203A(5)(a)-(f) (1996).

[28] IDAHO CODE § 42-203A(5) (1996).

[29] IDAHO CODE § 42-204 (1996). The Department may grant extensions for specific statutorily-defined reasons. *Id*. §§ 42-204(1)-(4) (where the project has been delayed because of the pendency of any matter with the federal government; litigation surrounds the underlying water right; or because of the large size of the project). In addition, the Department may grant one extension not to exceed an additional five years for other requests where the facts do not meet the statutory criteria. *Id*. § 42-204(5).

under the permit.[30] If such use is deemed satisfactory, the Department issues a license for the water right.[31] The issuance of a water right license by the Department is prima facie evidence of the existence of such a right, and is "binding upon the state as to the right of such licensee to use the amount of water mentioned therein."[32]

Once established pursuant to state permit and license procedures, a water right is real property under Idaho law,[33] and therefore may be acquired by lease or purchase.[34] Anyone with a perfected water right (a license-holder)

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[30] IDAHO CODE § 42-217 (1996). The Department examines the place where the water is diverted and used, the area and location of the land if the water is used for irrigation, the capacities of the ditches or canals, and the quantity of water that has been beneficially applied. *Id*. § 42-217(6)(1)-(2).

[31] IDAHO CODE § 42-219 (1996). The date of priority established by the license is the date when the holder applied for the water right permit. *Id*. § 42-219.

[32] IDAHO CODE § 42-220 (1996). So long as the license-holder pays properly levied fees and complies with state law, the right to use water pursuant to the terms of the license exists in perpetuity. *Id*. However, a water right may be lost by statutory forfeiture, common-law abandonment, or prescription.

A water right may be lost by statutory forfeiture when the license-holder fails to apply the water to the beneficial use for which it was appropriated for five consecutive years. *Id*. § 42-222. Water rights appurtenant to lands included in a federal cropland set-aside program are not forfeited because of non-use during the contracted time-period. *Id*. In addition, water rights are not subject to forfeiture when placed in the state water supply bank. *Id*. § 42-1764(2). A license-holder can apply to the Department for an extension of time to avoid forfeiture not to exceed five additional years. *Id*. § 42-222. All water rights lost through forfeiture revert to the state and are again available for appropriation pursuant to Idaho law. *Id*.

In order to abandon a water right in Idaho, the actions of the license-holder must evince a clear intent to abandon, and such intent must be proved by clear and convincing evidence of "unequivocal acts." Jenkins v. State Dep't of Water Resources, 647 P.2d 1256, 1260-61 (1982). Mere non-use of a water right in and of itself is not sufficient to constitute abandonment. *Id*.

Prescriptive title to a water right in Idaho can be acquired by adverse use of such water against another user for five years if the use is open, hostile, exclusive, continuous, and under a claim of right. Gilbert v. Smith, 552 P.2d 1220, 1225 (1976). The element of prescription must be established by clear and convincing evidence. *Id*.

[33] IDAHO CODE § 55-101 (1996).

[34] IDAHO CONST. art 15, §1 (1993). If a water right is leased or sold separate from the land, such conveyance must comply with state laws governing the change in use, place of use, or period of use. *See supra* note 32 and accompanying text. Water rights are appurtenant to the land on which the water is used in Idaho, and pass with the conveyance of the land for which the right of use was granted. IDAHO CODE § 42-220 (1996).

who wants to change the point of diversion, place of use, period of use, or nature of use of the underlying water right must first obtain Department approval.[35]

(C) Idaho's Water Rights Adjudication Process

Idaho's statutory scheme provides for private, general, and supplemental water right adjudications.[36] Idaho's adjudication process formally recognizes claims to water use rights in existence prior to the enactment of Idaho's application, permit, and licensing process.[37] The state has both administrative and judicial components to its adjudication process. Generally, an adjudication begins when water users petition the Department.[38] If the Department decides that an adjudication would be in the public interest, it requests the state attorney general to file an action to commence the proceeding.[39] The Department must give mail notice to all identifiable claimants and notify all other possible claimants by publication and posting at local courthouses.[40]

The Department then investigates each individual claim; the Director can conduct a fact-finding hearing as necessary to obtain all relevant facts.[41] Following full investigation, the Department files a report documenting its

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[35] IDAHO CODE § 42-222 (1996). The Director may approve the proposed transfer if: (1) no other water rights are injured, (2) the change does not constitute an enlargement in use of the original right, (3) the change is consistent with the conservation of Idaho's water resources, and (4) the transfer is in the local public interest as defined by Idaho Code § 42-203A(5). *Id*. § 42-222.

[36] *See* IDAHO CODE §§ 42-1401A(6), 42-1404 (1996) (a private adjudication is a judicial determination of rights on waters for which a general adjudication has not commenced, and is binding only on those water users joined in the action); *id*. § 42-1405 to 42-1407 (a general adjudication is an action to judicially determine the extent and priorities of all persons to use water from a particular water system in Idaho); *id*. § 42-1424 (a supplemental adjudication is a judicial determination of the rights of a claimant or claimants who were not joined pursuant to a previous private or general adjudication).

[37] Idaho's adjudication process also recognizes claims to existing federal rights to state waters. The state's adjudication process is noted for is diversity of parties and issues. *See* Dar Crammond, *Counting Raindrops: Prospects for Northwestern Adjudications* A-1 (1996) (on file with the Northwest Water Law and Policy Project) (commenting that "[f]ew states have such a diversity of parties, competition among uses and difficult legal and hydrologic issues").

[38] IDAHO CODE § 42-1405 (1996). Five or more or a majority of water users from a water system can petition the Department. *Id*. For Idaho's administrative rules governing the adjudication process, see IDAHO ADMIN. CODE §§ 37.03.01.00 to 37.03.01.065 (1996).

[39] IDAHO CODE §§ 42-1405 to 42-1407 (1996).

[40] IDAHO CODE § 42-1408 (1996).

[41] IDAHO CODE § 42-1410 (1996).

findings with the court.[42] Claimants are allowed to object to the Department's report, and a hearing is provided to voice such objections.[43] Any uncontested portion of the Department's report is deemed prima facie evidence of a water right.[44] Idaho district courts are responsible for hearing all objections to any water right or the finding in the Department's report, and for issuing a final decree.[45]

The Snake River Basin Adjudication (SRBA) is currently proceeding in Idaho. The SRBA encompasses most of the state except for the Bear River Basin and the state's panhandle region.[46] Initiated in 1987, the SRBA has proceeded slowly and remains far from completion due in part to the large number of claims involved.[47]

(D) Minimum Stream Flows

The Idaho Water Code's minimum stream flow provisions declare that the preservation of water is a "beneficial use," and outline a process whereby the Department is able to approve applications for permits to appropriate stream flow to preserve water from subsequent appropriation for other out-of-stream uses.[48] The Water Resource Board is the only entity authorized to

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[42] IDAHO CODE § 42-1411 (1996).

[43] IDAHO CODE § 42-1411 (1996).

[44] IDAHO CODE § 42-1411(4) (1996). When a claim is contested, the Department's report is prima facie evidence and the claimant has the burden to rebut the findings of the Department. *Id*. § 42-1411(5).

[45] IDAHO CODE § 42-1412 (1996). The district court has the authority to appoint special masters. *Id*. § 42-1422.

[46] *See* Phillip J. Rassier, *Idaho, in* 6 WATERS AND WATER RIGHTS 327 (Robert E. Beck ed., 1994). No comprehensive adjudicative decree exists at this time for the state's panhandle region. *Id*. The rights to use water in the Bear River Basin were adjudicated by a federal court in the 1920 "Dietrich Decree." *Id*. *See also* Utah Power & Light Co. v. Last Chance Canal Co., Equity No. 203 (D. Idaho 1920).

[47] For a more in-depth discussion of the history and development of the SRBA, see Dar Crammond, *Counting Raindrops: Prospects for Northwestern Water Right Adjudications* A-1 to A-18 (1996) (on file with the Northwest Water Law and Policy Project).

[48] IDAHO CODE § 42-1501 (1996). "Minimum stream flow" is defined as the amount of streamflow (in cubic feet per second) or lake level (in feet above sea level) necessary to "protect the fish and wildlife habitat, aquatic life, recreation, aesthetic beauty, navigation, transportation, or water quality of a stream in the public interest." *Id*. § 42-1502(f). "Stream" is defined as any "lake, spring, creek, stream, river or other natural body of standing or moving water which is subject to appropriation" under Idaho state law. *Id*. § 42-1502(e).

apply to the Director to approve such flows.[49] After the Board has submitted an application, the Director must forward a copy to the Departments of Fish and Game, Health and Welfare, Parks and Recreation, and any other public entity likely to have an interest.[50]

In order to approve a minimum stream flow application, the Director must find that such right: (1) will not interfere with any prior vested water right, permit, or water right application; (2) is in the public interest; (3) is necessary to preserve fish and wildlife habitat, aquatic life, recreation, aesthetic beauty, navigation, transportation, or water quality of a stream; (4) is the minimum flow or lake level and not the most desirable flow or lake level; and (5) is capable of being maintained in light of existing records.[51] The Idaho legislature must subsequently ratify all administratively approved minimum stream flow applications.[52]

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[49] IDAHO CODE § 42-1503 (1996). When the Board wishes to apply for a minimum stream flow on a particular stream, it must complete an application that includes: (1) the name of the stream and the legal description of the stretch of stream where the minimum stream flow is to be appropriated; (2) the quantity proposed; (3) the purpose for which the minimum stream flow is proposed; (4) the time of year during which the appropriation is proposed; and (5) any other information requested by the Director. *Id*.

While the Board is the only entity allowed to file an application with the Director, any person, association, municipality, county, or state or federal agency may submit a request in writing asking the Board to consider the appropriation of a minimum stream flow. *Id*. § 42-1504. Such a request must include the same information required in an application by the Board to the Director to establish a minimum stream flow. *Id*. In addition, a number of early instream flow licenses are held by the Idaho Department of Parks and Recreation (IDPR) and the Idaho Parks and Recreation Board (IPR Board) pursuant to legislation enacted prior to the state's minimum stream flow statute. *See* IDAHO CODE §§ 67-4307 to 67-4310 (1995) (directing the Idaho Park and Recreation Board to appropriate certain waters to be held in trust for the citizens of Idaho; licenses for water rights obtained pursuant to this statute are held by the IDPR and IPR Board).

[50] IDAHO CODE § 42-1503 (1996). The Director also must issue a public notice and publish such notice once weekly for two consecutive weeks in the county where the minimum stream flow is proposed. *Id*. The Director also must hold a public hearing regarding the minimum stream flow application. *Id*.

[51] IDAHO CODE § 42-1503 (1996).

[52] IDAHO CODE § 42-1503 (1996). The Director must submit all approved applications to the legislature by the fifth legislative day of each session; applications approved by the Director do not become effective unless approved by concurrent resolution of the Idaho legislature. *Id*. However, an application will be deemed approved if the legislature fails to act prior to the end of the regular session in which the application was submitted. *Id*.

(E) The Protected Rivers Program

Enacted in 1988, the Idaho Comprehensive Water Planning and Protected Rivers Act[53] directed the Water Resource Board (Board) to develop a comprehensive state water plan. Within each completed portion of the comprehensive state plan,[54] the Board may designate selected waterways as protected rivers.[55] Any completed portion of the comprehensive state water plan approved by the Board is subject to review and amendment by the legislature, and a protected river segment cannot be part of any such final plan until approved by law.[56] The Board must review, re-evaluate, and revise completed portions of the comprehensive state water plan every five years.[57]

The Board designates protected rivers based upon a determination that the "value of preserving a waterway for particular uses outweighs that of developing the waterway for other beneficial uses."[58] The Board must designate each river or river segment protected under a comprehensive state water plan as either "natural" or "recreational."[59] Prior to the completion and ratification of a particular part of the state comprehensive water plan, the Board may designate "interim" protected rivers.[60] Interim protection decisions by the Board are not subject to judicial review, and are based (1) on the probability that the legislature will subsequently approve the protected status and (2) that protection is necessary to protect river values.[61]

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[53] IDAHO CODE §§ 42-1734A to 42-1734I (1996).

[54] The Board has the ability to develop the comprehensive state water plan in stages based on waterways, river basins, drainage areas, river reaches, groundwater aquifers, or other geographic distinctions. *Id*. § 42-1734A(2). As of 1996, the Board had completed comprehensive state water plans and designated numerous protected river segments in the South Fork Boise River Sub-basin, Payette River Reaches, the North Fork Clearwater Basin, the Henry's Fork Basin, the Upper Boise River Basin, the Snake River from Milner Dam to King Hill, and the Priest River Basin. On December 13, 1996, the Board adopted the comprehensive state water plan for the South Fork Snake River Basin; the plan was subsequently approved by the state legislature March 19, 1997. SB 1234, 54th Leg., 1st Reg. Sess., 1997 Idaho Laws §§ 1-2.

[55] IDAHO CODE §§ 42-1734A(1), (4) (1996).

[56] IDAHO CODE §§ 42-1734B(6), (8) (1996).

[57] IDAHO CODE § 42-1734B(7) (1996).

[58] IDAHO CODE § 42-1734A(4) (1996).

[59] IDAHO CODE § 42-1734A(4) (1996).

[60] IDAHO CODE § 42-1734D (1996). Any state agency may petition the Board to designate a waterway as an interim protected river. *Id*. § 42-1734D(1).

[61] IDAHO CODE §§ 42-1734D(2), 42-1734D(2)(a)-(b) (1996). In addition, the Board must identify certain activities that must be prohibited to ensure river protection during its interim status. *Id*. § 42-1734D(3). The interim protected river status lasts until the earliest of (1) the completion of the comprehensive state water plan for the waterway protected, (2) two years, or (3) the revocation of the river's interim status by law. *Id*. § 42-1734D(4)(a)-(c).

Various prohibitions apply to activities that occur in areas below the high water line on protected rivers. On "natural" rivers, the Board must prohibit: (1) the construction or expansion of dams or impoundments, (2) the construction of hydropower projects, (3) the construction of water diversion works, (4) dredge or placer mining, (5) alterations of the stream bed, and (6) mineral or sand and gravel extraction within the stream bed.[62] On "recreational" rivers, the Board decides which activities listed above would adversely affect river values and therefore be prohibited.[63] Board prohibitions on protected river segments do not apply to approved applications to appropriate water, vested property rights, or existing licensed hydropower projects.[64]

Numerous natural and recreational protected rivers and streams have been designated by the Department and subsequently ratified by the legislature pursuant to the South Fork Boise, Payette, North Fork Clearwater, Henry's Fork, Upper Boise, Snake (Milner Dam to King Hill), and Priest River Basin comprehensive state water plans.[65]

(F) Stream Channel Protection Program

No person in Idaho is allowed to engage in any project or activity that would "alter a stream channel" without first obtaining a permit from the Director.[66]

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[62] IDAHO CODE § 42-1734A(5)(a)-(f) (1996).

[63] IDAHO CODE § 42-1734A(6) (1996).

[64] IDAHO CODE § 42-1734F (1996). In addition, mere designation of a river as protected does not establish any instream water rights. *Id*. § 42-1734G. Any water needed to protect river values must be secured pursuant to the state's minimum stream flow program. *See supra* § 4.1(1)(D).

[65] IDAHO CODE §§ 42-1734A, 42-1734B (1996). Each of the comprehensive plans listed more than one river or stream stretch that was granted protected status. *See, e.g., id*. the Henry's Fork Basin comprehensive state water plan identifies five rivers, ten creeks, and two lakes that are afforded protected status. Seven separate segments of the Henry's Fork River are protected. *Id*.

[66] IDAHO CODE § 42-3803 (1996). "Alter" means to "obstruct, diminish, destroy, alter, modify, relocate, or change the natural existing shape or direction of water flow of any stream channel within or below the mean high watermark thereof." *Id*. § 42-3802(b). In addition, "stream channel" is defined as a "natural watercourse of perceptible extent, with definite bed and banks, which confines and conducts continuously flowing water." *Id*. § 42-3802(d).

The stream channel protection rules do not impair vested water rights, or the existing diversion of water pursuant to a vested water right or water right permit for irrigation, domestic, commercial or other use recognized under Idaho law. *Id*. § 42-3806. No permit is required to clean, maintain, construct in, or fix any diversion structure, canal ditch, or lateral. *Id*. And no permit is required for a water user to remove any obstruction from a stream if such obstruction is likely to interfere with the delivery or use of water pursuant to

Any person who plans to alter a stream channel must file an application with the Director at least sixty days prior to commencing construction.[67] Upon receipt of an application, the Director must forward copies to other state agencies in order to determine the likely effects of the proposed activities on fish and wildlife habitat, aquatic life, recreation, aesthetic beauty, and water quality values of the stream.[68] The Director then bases approval or disapproval of the permit on her own investigation and the recommendations and alternate plans provided by other state agencies.[69] Each permit issued by the Director imposes certain minimum conditions which vary depending on the nature of the stream channel activity.[70]

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an existing water right or water right permit. *Id*.

Department regulations also exempt certain activities from the stream alteration permit process including: (1) work on existing or proposed reservoir projects, (2) work within the portions of the Snake and Clearwater Rivers from the state boundary upstream to the upper boundary of the Port of Lewiston Port District, and (3) the removal of debris so long as no equipment will be working in the channel and material is disposed outside the channel so that it cannot re-enter. IDAHO ADMIN. CODE § 37.03.07.025 (1996). Work on existing or proposed reservoir projects is subject to separate regulation by the Department. *See id*. § 37.03.06 (dam safety rules).

[67] IDAHO CODE § 42-3803 (1996). It is important to note that the Department regulates the fill and removal of material from all streams; the Idaho Department of Lands (IDL) regulates fill and removal activities involving the beds and waters of navigable lakes. *See infra* § 4.1(3)(B). The Department, IDL, and the Army Corps of Engineers have developed a joint application form for proposed fill and removal activities that will affect state rivers and lakes. IDAHO ADMIN. CODE § 37.03.07.030.01 (1996).

[68] IDAHO CODE § 42-3804 (1996).

[69] IDAHO CODE § 42-3805 (1996). Prior to the issuance of the permit, the Director must consider the following items: (1) the purpose of the work; (2) the necessity and justification of the alteration; (3) whether the alteration is reasonable and likely to accomplish the project's purpose; (4) the ability of the alteration to serve as a permanent solution; (5) the creation of any harmful flooding or erosion problems; (6) the affect the alteration will have on fish habitat; (7) the impact on turbidity or other water quality problems; (8) the interference with any recreation uses; (9) detraction from the aesthetic beauty of the area; (10) modifications of the proposal that may be reasonably possible to reduce stream disturbance; (11) compliance with adopted minimum standards; and (12) any public safety factors.

[70] IDAHO ADMIN. CODE § 37.03.07.055 (1996). Department regulations outline minimum conditions for stream alteration procedures dealing with: (1) construction; (2) dumped rock riprap; (3) gabions; (4) drop structures, sills, and barbs; (5) dikes and levees; (6) jetties; (7) culverts and bridges; (8) removal of sand and gravel deposits; (9) suction dredges and non-powered sluice equipment; (10) pilings; (11) pipe crossings; and (12) concrete plank boat launch ramps. *Id*. §§ 37.03.07.056 to 37.03.07.067. The regulations establish "minimum" standards only, and individual permits may incorporate more stringent conditions depending on the nature of the activity and its determined impact on the stream channel. *Id*. § 37.03.07.055.

(2) Department of Health and Welfare: Division of Environmental Quality

The Idaho Department of Health and Welfare, Division of Environmental Quality (DEQ), is responsible for the development and implementation of Idaho water policy regarding surface and ground water quality.[71] Many of DEQ's primary activities involve fulfilling Idaho's responsibilities under the federal Clean Water Act[72] (CWA). DEQ's primary duties under the CWA include: (1) the development and maintenance of state water quality standards; (2) the identification water quality limited waterbodies; (3) ensuring that proposed projects requiring a federal license or permit comply with state water quality standards; (4) a role subordinate to EPA regarding the implementation of the NPDES program governing point source discharges; and (5) the development and maintenance of programs dealing with nonpoint source pollutants.[73] Furthermore, DEQ also has the duty to carry out state-imposed programs dealing with water quality.[74]

(A) Water Quality Standards

Section 303 of the CWA requires that Idaho develop water quality standards for all surface waters.[75] In setting state water quality standards, DEQ designates uses for all state waters and establishes water quality criteria for each waterbody based on such uses.[76] DEQ must hold public hearings in

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[71] In carrying out state water quality policies, DEQ is subject to the executive and administrative oversight powers of the Director of the Department of Health and Welfare (Director). IDAHO CODE §§ 39-104, 39-105 (1994). In addition, the Board of Health and Welfare (Board) serves as the policy-making entity regarding Idaho's environmental protection and health. *Id.* § 39-107.

The Board consists of seven members, all of which are appointed by the Governor and approved by the Senate. *Id.* § 39-107(1). Not more than four members may be from the same political party, and all members must be chosen "with due regard to their knowledge and interest in environmental protection and health." *Id.*

[72] Federal Water Pollution Control Act, 33 U.S.C. §§ 1251 to 1387 (1994).

[73] For a discussion of DEQ's responsibilities under the CWA, see *infra* § 4.1(2)(A)-(D).

[74] For a discussion of DEQ's obligations pursuant to Idaho's Groundwater Quality program see *infra* § 4.1(2)(E).

[75] 33 U.S.C. § 1313(c)(2) (requiring that standards be established "to protect the public health or welfare, enhance the quality of water and serve the purposes of this [Act]").

[76] In designating uses for state waters, the CWA directs DEQ to consider the value of Idaho's waters for "public water supplies, propagation of fish and wildlife, recreational purposes, and agricultural, industrial, and other purposes, and also taking into consideration their use and values for navigation." *Id.* § 302(c)(2)(A). EPA requires that DEQ protect not only existing uses on a waterbody, but also any uses that are "attainable." 40 C.F.R. § 131.10.

order to review existing water quality standards at least once every three years, and provide the final results of each review to the federal Environmental Protection Agency (EPA).[77]

Surface water uses for which DEQ may classify Idaho waters include: (1) agricultural, domestic, or industrial water supply; (2) aquatic life, including both cold and warm water biota and salmonid spawning; (3) either primary or secondary contact recreation; (4) wildlife habitat; and (5) aesthetics.[78] DEQ has promulgated regulations which set forth water quality criteria and apply to all surface waters in Idaho.[79] In addition, DEQ has developed water quality criteria that apply to specific types of waters depending on the use for which the particular water was classified.[80]

(B) Water Quality Limited Waterbodies

Also pursuant to CWA Section 303, Idaho must identify those waters that do not meet state water quality standards.[81] Once identified, Idaho must

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(1996) (a particular use is "attainable" if it "can be achieved by the imposition of effluent limits required under section 301(b) and 306 of the [CWA] and cost-effective and reasonable best management practices for nonpoint source control). In designating the uses for which a waterbody's water quality standards will be established (fishing, swimming, etc.) DEQ may not eliminate existing uses, and has a limited ability to later eliminate designated uses. *Id.* § 131.10(g)-(h).

DEQ is also responsible for setting water quality criteria that serve to protect the designated uses of state waters. These criteria vary depending on the uses for which the particular water was designated, and are generally based on EPA established guidelines. *Id.* § 131.11.

[77] 33 U.S.C. § 1313(c)(1).

[78] IDAHO ADMIN. CODE § 16.01.02.100 (1996).

[79] IDAHO ADMIN. CODE § 16.01.02.200 (1996). These criteria apply to hazardous materials, toxic substances, deleterious materials, floating/suspended or submerged matter, excess nutrients, oxygen-demanding materials, and sediment. *Id.*

[80] IDAHO ADMIN. CODE § 16.01.02.250 (1996). *See, e.g., id.* § 16.01.02.250.01(a) (requiring that waters designated for primary contact recreation not have more than 500/100 ml of fecal coliform bacteria at anytime between May 1 and September 30 of each year). DEQ may also develop site-specific (as opposed to use-specific) water quality criteria when needed. *Id.* § 16.01.02.275.

[81] 33 U.S.C. § 1313(d)(1)(A). The waters identified pursuant to this section are referred to as "water quality limited waterbodies." EPA defines a water quality limited waterbody as "any segment where it is know that water quality does not meet applicable water quality standards, and/or is not expected to meet applicable water quality standards, even after the application of the technology-based effluent limitations required by sections 301(b) and 306 of the Clean Water Act." 40 C.F.R. § 130.2(j). In Idaho, the technology-based effluent limitations are set by EPA. *See infra* § 4.1(2)(D).

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prioritize the water quality limited waters, taking into account the severity of the pollution and the uses made of such waters.[82] In accordance with the priority ranking given to each water, DEQ must establish the total maximum daily load (TMDL) for each pollutant suitable for calculation, at a level necessary to implement state established water quality standards.[83] Section 303 also requires that proposed new discharges in Idaho adhere to EPA's antidegradation policy.[84]

In 1992, Idaho submitted a list to EPA (who subsequently approved the 1992 list) that included only 36 water quality limited water bodies. The Idaho Sportmen's Coalition and Idaho Conservation League sued and the federal district court found the list inadequate; the court ordered EPA to promulgate a water quality limited list for Idaho. Idaho Sportsmen's Coalition v. Browner, No. C93-140WD (W.D. Wash. 1994). The EPA complied with the court order and published the state's 1994 list containing 962 waterbodies. Idaho Sportsmen's Coalition v. Browner, WL 710883 (W.D. Wash. 1996).

The Idaho DEQ's 1996 section 303(d) list included 969 different segments of water quality limited waterbodies. IDAHO DEPARTMENT OF ENVIRONMENTAL QUALITY, THE 1996 § 303(d) LIST FOR THE STATE OF IDAHO (Oct. 1996). In order to complete the list, DEQ divides the state into six hydrologic basins: (1) Bear Basin, (2) Upper Snake River Basin, (3) Southwest Idaho Basin, (4) Salmon Basin, (5) Clearwater Basin, and (6) the Panhandle Basin. *Id*.

[82] 33 U.S.C. § 1313(d)(1)(A).

[83] 33 U.S.C. § 1313(d)(1)(C). Establishing the TMDL for each pollutant is a three-step process: (1) establish the total amount of the pollutant that can be present in the particular waterbody while still complying with water quality standards; (2) allocate the TMDL to all known sources (including nonpoint sources), reserve some for new sources, and account for scientific uncertainty; and (3) translate the allowable load to end-of-the-pipe permit limits. Id. § 1313(d)(1)(C); 40 C.F.R. § 130.7.

Originally, EPA and Idaho DEQ entered into an agreement that called for the TMDL process to be spread out over 25 years, until the year 2021. Idaho Sportsmen's Coalition v. Browner, WL 710883, at 1 (W.D. Wash. 1996). A federal district court in Washington held that the proposed TMDL schedule violated the Clean Water Act because of (1) its "extreme slowness" and (2) the fact that it did not provide for TMDL development for all of Idaho's water quality limited waters. *Id*. at 3-4. The court ruled that EPA and Idaho must amend that schedule so that TMDLs were established for all waters on the list within approximately five years. *Id*. at 6. Idaho has until March 26, 1997 to adopt a "reasonable" TMDL schedule with a time-frame consistent with the court order. *Id*.

[84] 33 U.S.C. § 1313(d)(4)(B). EPA's antidegradation policy includes the following three requirements: (1) all existing uses and the water quality standards necessary to preserve them must be maintained; (2) where the water quality level of a waterbody is greater than that needed to support the propagation of fish, shellfish, wildlife, and recreation, such level must be maintained unless the state finds after completing a public process that allowing water quality to decline is necessary to accommodate important economic or social development; and (3) where high quality waters represent an outstanding national resource (outstanding resource waters (ORWs)), they must be maintained at current high levels. 40 C.F.R. § 131.12.

See also IDAHO CODE § 39-3603 (1994, 1996 Suppl.) (state general water quality standards and antidegradation policy); *id* § 39-3617 (designation of outstanding resource waters). Idaho does not allow new sources or the substantial modification of existing nonpoint source activity that is reasonably expected to lower the water quality of an ORW. *Id*. § 39-3618. Existing activities may continue in a manner that protects the water quality of the ORW. *Id*. § 39-3619. Furthermore, DEQ must develop BMPs for reasonably

(C) Clean Water Act Section 401 Certification

Section 401 of the CWA requires Idaho to issue a water quality certificate prior to the issuance of a federal license or permit that would result in a discharge into state waters.[85] The certificate issued by DEQ must include "any effluent limitations and other limitations, and monitoring requirements necessary to assure" that the federal license or permit will comply with both the CWA and any appropriate state law.[86] The United States Supreme Court has broadly construed state powers under the section 401 certification process.[87] Both Federal Energy Regulatory Commission hydropower licenses and Army Corps of Engineer CWA Section 404 dredge and fill permits cannot be issued without DEQ first certifying that such activities will not violate state water quality standards.[88]

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foreseeable nonpoint source

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activities on an a waterbody within six months of its designation as an ORW. *Id*. § 39-3620. For rules governing the monitoring and enforcement of activities on ORWs, see *id*. §§ 39-3621 to 39-3623. *See also* IDAHO ADMIN. CODE § 16.01.02.053 (outstanding resource waters); *id*. § 16.01.02.350.04 (restricting nonpoint source activities on ORWs).

[85] 33 U.S.C. § 1341(a).

[86] 33 U.S.C. § 1341(d). Any measures called for in the state certificate are then incorporated as an operating condition in the federal license or permit. *Id*.

[87] P.U.D. No. 1 of Jefferson County v. Washington Dept. of Ecology, 114 S.Ct. 1900 (1994). The Supreme Court noted that water quality standards under the CWA are comprised of two components-(1) designated uses of individual waterbodies and (2) water quality criteria-and that "pursuant to § 401(d) the [s]tate may require that a permit applicant comply with both the designated uses and the water quality criteria of the state standards." *Id*. at 1910. In addition, the court upheld the Washington Department of Ecology's minimum instream flow requirements noting that "water quantity is closely related to water quality; a sufficient lowering of the water quantity in a body of water could destroy all of its designated uses, be it for drinking water, recreation, navigation or, as here, as a fishery." *Id*. at 1913.

[88] IDAHO DEPARTMENT OF HEALTH AND WELFARE, DIVISION OF ENVIRONMENTAL QUALITY, THE 1992 IDAHO WATER QUALITY STATUS REPORT 45 (Dec. 1992). Idaho DEQ has promulgated water quality rules establishing dissolved oxygen standards for waters discharged from dams, reservoirs, and hydroelectric facilities. IDAHO ADMIN. CODE § 16.01.02.276 (1996). *See also id*. § 16.01.02.900 (administrative regulations dealing with gas supersaturation associated with spills at water impoundment facilities).

In recent years DEQ--after consultation with the Idaho Department of Fish and Game--has granted short term activity exemptions to the National Marine Fisheries Service (NMFS) to allow temporary exceedence of state water quality standards to supplement flows in the lower Snake River. *See, e.g.*, Letter from Wallace N. Cory, Administrator, *Idaho Department of Health and Welfare Division of Environmental Quality* to William Stelle Jr., Regional Director, *U.S. Dep't. of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Northwest Region* (Apr. 17, 1996) (allowing voluntary spills from Dworschak Reservoir that exceed state water quality standards for total dissolved gas during the time period when actively migrating juvenile spring/summer chinook, sockeye, and steelhead are present in the lower Snake River).

Both the Idaho Department of State Lands (IDL) and Water Resources Department

(D) Point and Nonpoint Source Programs

Idaho's water quality standards are implemented through both point and nonpoint source programs. First, the National Pollutant Discharge Elimination System (NPDES) regulates point source pollutant discharges.[89] The EPA, with coordinated participation on the part of DEQ, administers the NPDES program.[90] Therefore, the EPA is responsible for issuing permits to individual point-source polluters in Idaho, while DEQ's primary role is to establish effluent limitations in accordance with Idaho's water quality standards.[91] The EPA then incorporates these limitations as conditions into the individual NPDES permits issued by EPA.[92]

The DEQ also has assumed other responsibilities to assure that point source discharges are properly monitored in Idaho. DEQ conducts an engineering plan and specification review, whereby it examines municipal and industrial wastewater treatment plants to ensure that such facilities are designed to

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(WRD) review U.S. Army Corps of Engineers (CORPS) section 404 permits. *See* IDAHO ADMIN. CODE § 37.03.07.030.01 (1996) (noting that the IDL, WRD, and Corps have developed a joint permit application form).

[89] The CWA establishes and defines the NPDES program. *See* 33 U.S.C. § 1342. The NPDES program applies to all discharges of pollutants from point sources into navigable waters. 33 U.S.C. § 1362(12). Anyone who wishes to discharge pollutants from a point source into navigable waters must comply with the NPDES, and obtain a permit. 33 U.S.C. § 1342(a)(1). The permit generally contains conditions specifying limitations on the amount of pollution that can be discharged. *Id*.

[90] IDAHO DEPARTMENT OF HEALTH AND WELFARE, DIVISION OF ENVIRONMENTAL QUALITY, THE 1994 IDAHO WATER QUALITY STATUS REPORT, 92 (Oct. 1994). Every state has the option to present to EPA a program under which the state would establish and administer the NPDES according to state law or under an interstate compact. 33 U.S.C. § 1342(b). Idaho has yet to fulfill this requirement, and therefore the state DEQ still has a subordinate role in carrying out the NPDES program.

[91] IDAHO DEPARTMENT OF HEALTH AND WELFARE, DIVISION OF ENVIRONMENTAL QUALITY, THE 1994 IDAHO WATER QUALITY STATUS REPORT, 92 (Oct. 1994).

[92] Section 301 of the CWA establishes technology-based requirements for industrial discharges, with the severity of such requirements varying depending on whether the polluter is an existing discharger, a new source, or a pretreater (a facility that discharges into a publicly owned treatment works (POTW)). 33 U.S.C. § 1311.

The EPA must impose more stringent non-technological based limitations on NPDES permit recipients as necessary to achieve compliance with Idaho's water quality standards. Id. § 1311(b)(1)(C). Federal regulation requires the permit issuer (the EPA in Idaho) to determine whether permitted discharges have the reasonable potential to cause or contribute to state water quality violations. 40 C.F.R. § 122.44(d)(1). Furthermore, EPA regulations disallow permit issuance where conditions are insufficient to prevent water quality violations. *Id*.

DEQ regulations regarding point source discharges are located at IDAHO ADMIN. CODE § 16.01.02.400 (1996).

meet state water quality standards.[93] In addition, DEQ developed and maintains a permit program for cyanide heap-leach ore processing.[94] Recently, DEQ expressed concern regarding the implementation of the NPDES program; DEQ depends on EPA's issuance of permits to both major and minor water pollution discharges in Idaho, but EPA has been issuing permits only for major sources in Idaho.[95]

Second, DEQ is responsible for the coordination and implementation of Idaho's nonpoint source programs.[96] Idaho's administrative regulations note that nonpoint sources include, but are not limited to: (1) irrigated and non-irrigated lands utilized for grazing, crop production, or silviculture; (2) log storage or rafting; (3) construction sites; (4) recreation sites; and (5) septic tank disposal fields.[97] The Idaho DEQ implements the nonpoint source program "through interagency coordination with local, state, and federal natural resource agencies."[98]

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[93] IDAHO DEPARTMENT OF HEALTH AND WELFARE, DIVISION OF ENVIRONMENTAL QUALITY, THE 1994 IDAHO WATER QUALITY STATUS REPORT, 92 (Oct. 1994). *See also* IDAHO ADMIN. CODE §§ 16.01.02.420, 16.01.02.440 (1996).

[94] IDAHO DEPARTMENT OF HEALTH AND WELFARE, DIVISION OF ENVIRONMENTAL QUALITY, THE 1994 IDAHO WATER QUALITY STATUS REPORT, 92 (Oct. 1994). Prior to issuing a permit DEQ inspects the ore processing facility to assure surface and ground water protection, and includes specific monitoring and leak protection requirements in each permit. *Id*.

[95] *Id*. at 92-93 (noting that neither DEQ nor EPA have sufficient staff to inspect the minor facilities and that "[n]o permits are being issued for new minor sources of pollution and existing minors are not being re-issued," and that "[i]n all likelihood this inaction is adversely impacting water quality in Idaho").

[96] *Id*. at 94. Section 319 of the CWA governs the development and maintenance of state nonpoint source management programs. 33 U.S.C. § 1329. According to Section 319, Idaho must prepare and submit a report to EPA that (1) identifies waters that will not achieve water quality standards without some form of nonpoint source pollution control, (2) identifies problem nonpoint source pollutants by category and subcategory, (3) describes the process whereby best management practices and measures are developed to control nonpoint source pollution, and (4) identifies and describes state and local measures to control nonpoint source pollution. *Id*. § 1329(a)(1)(A)-(D).

Idaho must also submit a nonpoint source management program to EPA. *Id*. § 1329(b). This program must incorporate the following mechanisms: (1) an identification of the best management practices (BMPs) to be implemented; (2) a description of the specific programs necessary to carry out the BMPs; (3) a schedule documenting stages for the implementation of the BMPs; (4) certification by the state attorney general that Idaho's laws provide adequate authority for the program's implementation; and (5) sources of federal and other assistance to implement the program. *Id*. § 1329(b)(2)(A)-(E).

[97] IDAHO ADMIN. CODE § 16.01.02.003.60 (1996).

[98] IDAHO DEPARTMENT OF HEALTH AND WELFARE, DIVISION OF ENVIRONMENTAL QUALITY, THE 1994 IDAHO WATER QUALITY STATUS REPORT, 94 (Oct. 1994). The state's nonpoint source control strategy is "based on the feedback loop concept;" this concept focuses primarily implementing and monitoring site-specific best-management practices. *Id*. Depending on the location of the site, a local, state, or federal government entity may be responsible for

The primary components of the nonpoint source program in Idaho include (1) establishing site-specific "best management practices" (BMPs) that govern the development and implementation of certain activities that are recognized nonpoint sources of pollution (irrigation, grazing, mining, silviculture, etc...); and (2) monitoring such activities to ensure that established BMPs are sufficient to maintain water quality.[99] DEQ has a prominent role in the development of BMPs and monitoring programs to deal with individual nonpoint source activities including but not limited to the state agricultural water quality, forest practices, and mining programs.[100]

First, the Agricultural Water Quality Program (AWQP) was originally created in 1980 to implement BMPs on cultivated farmlands.[101] The program now includes grazing, riparian area management, planning on a watershed basis, comprehensive program and project evaluation, management practice effectiveness review, and groundwater impacts from agricultural chemicals, dairies, and feedlots.[102] State Soil Conservation Districts implement the program at the local level with funding and monitoring provided by DEQ.[103]

Second, federal and state agencies have developed nonpoint source programs dealing with forest practices. Idaho's Forest Practices Water Quality Management Plan (FPWQMP) outlines the guidelines for interagency cooperation regarding the control of nonpoint source pollution from logging activities; the Idaho Department of Lands (IDL) implements forest BMPs on

implementing the specific pollution control practices.

[99] *Id*. The nonpoint source program in Idaho emphasizes: (1) evaluation and monitoring techniques to determine beneficial use attainability and status; (2) creating public awareness; (3) institutionalizing the feedback loop components (site-specific BMPs combined with monitoring) into state and federal programs using the CWA requirements; and (4) integrating nonpoint source control strategies through implementation of the state antidegradation policy. *Id*. When a water body does not meet water quality standards despite implementation of activity-based BMPs, then DEQ recommends changes. *Id*.

[100] DEQ is the primary state agency charged with overseeing the state's nonpoint source program, but other state and federal agencies play a role in both the development and implementation of BMPs. Idaho DEQ also has a prominent role in controlling nonpoint source activities that affect state ground water sources. *See infra* § 4.1(2)(E). In addition, DEQ participates in a number of nonpoint source programs dealing with lakes, and the development of a bioassessment protocol and sediment monitoring techniques. IDAHO DIVISION OF ENVIRONMENTAL QUALITY, THE 1994 IDAHO WATER QUALITY STATUS REPORT 100-101 (Oct. 1994).

[101] IDAHO DIVISION OF ENVIRONMENTAL QUALITY, THE 1994 IDAHO WATER QUALITY STATUS REPORT 100-101 (Oct. 1994).

[102] *Id*.

[103] *Id*. For information regarding Idaho's soil conservation districts, see IDAHO CODE §§ 22-2701 to 22-2733 (1995).

state lands through the Idaho Forest Practices Act,[104] while the United States Forest Service (USFS) and Bureau of Land Management (BLM) implement and monitor BMPs on federal forest lands in Idaho.[105] Regarding established forest BMPs, the primary role of DEQ is to review the adequacy of such BMPs, conduct monitoring, review planned projects, and coordinate implementation of the FPWQMP.[106]

Third, Idaho's water quality standards were recently modified to include rules and regulations promulgated by the IDL dealing with dredge and placer mining and surface mining in Idaho.[107] DEQ has primarily an oversight role regarding the development and implementation of mining BMPs, ensuring that persons participating in mining or reclamation activities adhere to water quality standards.[108]

(E) The Idaho Ground Water Protection Program

In 1989, the Idaho Legislature passed the Ground Water Quality Protection Act[109] in order to deal with both point and nonpoint source pollutants that adversely affect state ground water quality. The legislature designated DEQ as the primary state agency to coordinate and administer the Act.[110] The DEQ's primary responsibilities under the Act include: (1) the prioritization of

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[104] For a discussion of IDL's implementation of the Idaho Forest Practices Act and the rules and regulations promulgated thereto, see *infra* § 4.1(3)(A).

[105] IDAHO DIVISION OF ENVIRONMENTAL QUALITY, THE 1994 IDAHO WATER QUALITY STATUS REPORT 97 (Oct. 1994). A memorandum of understanding between DEQ, IDL, USFS, and BLM ensures the state-wide implementation of the forest BMPs whether such activities occur on state or federal lands. *Id*. Both the Forest Service and BLM are required by the CWA to ensure that activities allowed on federal lands subject to agency oversight comply with state established water quality BMPs. 33 U.S.C. § 1323 (1994).

[106] IDAHO DIVISION OF ENVIRONMENTAL QUALITY, IDAHO NONPOINT SOURCE MANAGEMENT PROGRAM 72 (1989).

[107] For a brief discussion of these rules, and the role of the IDL in ensuring that mining on Idaho state lands complies with water quality standards, see *infra* § 4.1(3)(B). In addition to surface and dredge and placer mining, other mining operations monitored by IDL include: underground mining; mineral exploration; oil, gas, water, and geothermal drilling; and orphaned or abandoned mines. These activities all create nonpoint source impacts, including the fall-out from related activities such as road construction, open pits, waste rock dumps, tailing impoundments, processing facilities, and the transport of hazardous materials. IDAHO DIVISION OF ENVIRONMENTAL QUALITY, IDAHO NONPOINT SOURCE MANAGEMENT PROGRAM 89-90 (1989).

[108] IDAHO DIVISION OF ENVIRONMENTAL QUALITY, THE 1994 IDAHO WATER QUALITY STATUS REPORT 99 (Oct. 1994).

[109] 1989 Idaho Laws 1269 (codified at IDAHO CODE §§ 39-120 to 39-127).

[110] IDAHO CODE § 39-120(1) (1994).

sources of contamination based on the risk to ground water; [111] (2) the development of a management strategy, in coordination with the IDL, to protect groundwater quality from mining operations;[112] (3) the prioritization of regional and local monitoring projects;[113] (4) the development of BMPs to ensure that groundwater recharge projects comply with the state Ground Water Quality Plan;[114] (5) helping the Department of Water Resources with establish and maintain an inventory of groundwater quality data collection programs;[115] and (6) the development of regulations for ground water remediation.[116]

(3) Department of Lands

The Idaho Department of Lands (IDL), subject to the rules and general policies established by the State Land Board (Board), is responsible for administering state laws pertaining to the management, control, and disposition of state lands.[117] The IDL's administrative duties include, but are not limited to: indemnity lieu land selections;[118] appraising, leasing, and selling state lands;[119] granting rights of way over state lands;[120] and removing timber from state lands.[121] In addition, IDL has important roles in (1) establishing best management practices which apply to forestry and mining activities that adversely affect water quality, and (2) administering state laws regarding encroachment on navigable lakes.[122]

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[111] IDAHO GROUND WATER QUALITY COUNCIL, IDAHO'S GROUND WATER QUALITY PLAN: PROTECTING GROUNDWATER QUALITY 29 (Dec. 1996).

[112] *Id*. at 32.

[113] *Id*. at 42.

[114] *Id*. at 43.

[115] *Id*. at 44.

[116] *Id*. at 45.

[117] *See* IDAHO CODE § 58-119 (1994) (powers and duties of the IDL); *id*. § 58-104 (powers and duties of the Board). Board membership includes the governor, secretary of state, attorney general, state auditor, and superintendent of public instruction. *Id*. § 58-101.

[118] *See* IDAHO CODE §§ 58-201 to 58-206 (1994).

[119] *See* IDAHO CODE §§ 58-301 to 58-337 (1994).

[120] *See* IDAHO CODE §§ 58-601 to 58-604 (1994).

[121] *See* IDAHO CODE §§ 58-401 to 58-416 (1994).

[122] For a discussion of these duties, see *supra*, § 4.1(3)(A)-(B).

(A) Best Management Practices

The IDL is responsible for administering Idaho's Forest Practices Act[123] pursuant to the rules and regulations promulgated by the Board.[124] The Board promulgates rules identifying "minimum standards" (best management practices (BMPs)) that apply to forest practices conducted in Idaho. These rules must be based on criteria focused on harvest methodology, road construction, reforestation, the use of chemicals, slash management, and salvage logging.[125] IDL duties pursuant to the Forest Practices Act include (1) advising and assisting the Board, (2) ensuring coordination among the state agencies concerned with the "forest environment," (3) cooperating with and providing assistance and advice to landowners regarding the management of forest lands, (4) entering into contracts or cooperative agreements necessary to carry out the purposes of the Act, and (5) developing "methods for controlling watershed impacts resulting from cumulative effects."[126]

The Idaho Surface Mining Act[127] and Dredge and Placer Mining Protection Act[128] are intended to protect water quality and ensure reclamation on all

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[123] IDAHO CODE §§ 38-1301 to 38-1314 (1994). The Act defines "forest practices" as "(a) the harvesting of forest tree species; (b) road construction associated with harvesting of forest tree species; (c) reforestation; (d) use of chemicals or fertilizers for the purpose of growing or managing forest tree species; (e) the management of slashings resulting from harvest, management or improvement of forest tree species; or (f) the prompt salvage of dead or dying timber or timber that is threatened by insects, disease, windthrow, fire or extremes of weather." *Id*. § 38-1303(1).

[124] IDAHO CODE § 38-102 (1994).

[125] IDAHO CODE § 38-104(1)(a)-(f) (1994). *See also* IDAHO ADMIN. CODE § 20.02.01 (1996) (pertaining to the administration of the Idaho Forest Practices Act; BMPs for timber harvest, road construction, chemical use, slash management, and salvage logging).

[126] IDAHO CODE § 38-1305(3)-(6), (8) (1994, 1996 Supp.). In addition, all site-specific BMPs approved by the IDL prior to July 1, 1995, remain in force in Idaho. *Id*. § 38-1305(7).

[127] IDAHO CODE §§ 47-1501 to 47-1519 (1994, 1996 Supp.). Each person wishing to conduct surface mining operations must submit to the Board a map of the mine panel, diagrams documenting the planned locations of mining pits and other land disturbances, and a reclamation plan. *Id*. § 47-1506(1)-(3). The operator's map must include (1) the location of existing and anticipated roads; (2) the approximate land boundaries of the project area; (3) the approximate location of all streams, creeks, or waterbodies in the project area; (4) the drainage adjacent to the surface operation area; and (5) the approximate boundaries of the lands that will become affected as a result of the surface mining activities. *Id*. § 47-1506(1)(i)-(iii), (v)-(vi).

[128] IDAHO CODE §§ 47-1301 to 47-1324 (1996 Supp.). Any person conducting dredge or placer mining operations must "commence restoration of disturbed lands in the permit area" within one year after permanent "cessation" of operations. *Id*. § 47-1314 (1996 Supp.). Idaho law requires that "surfaces shall be returned to a contour reasonably comparable to that contour existing prior to disturbance, topsoil shall be replaced where deemed appropriate by

Idaho lands. The Board has promulgated rules establishing best management practices for placer, dredge, exploration, and surface mining operations.[129]

(B) Encroachment on Navigable Lakes

The IDL regulates the beds, waters, and airspace over Idaho's navigable lakes pursuant to rules and regulations established by the Board.[130] Each person wishing to construct, enlarge, or replace a nonnavigational or commercial navigational encroachment or a navigational encroachment beyond the navigability line must apply to the state for a permit.[131] The Board or IDL must give proper notice regarding the application and any

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the Board, and vegetation shall be planted reasonably comparable to that vegetation existing prior to the disturbance." *Id*. In addition, any waters disturbed by dredge or placer operations must be "restored to a configuration and pool structure conducive to good fish and wildlife habitat and recreational use." *Id*. Where water used in dredge or placer operations flows into a natural watercourse, the operator must "construct and use" adequate settling ponds or other water clarification devices necessary to ensure state water quality standards are not violated. *Id*. § 47-1315.

[129] *See* IDAHO ADMIN. CODE § 20.03.01.040 (BMPs for placer and dredge mining operations); id. § 20.03.02.140 (BMPs for exploration and surface mining).

[130] IDAHO CODE § 58-1303 (1994). Although Idaho by statute identifies the Board as the primary state entity to administer the lakebed permit process, the Board has delegated many of the permit application process duties to IDL (via the Director of the IDL). *See, e.g.*, IDAHO ADMIN. CODE § 20.03.04.020 (directing that no one may cause any encroachment on a navigable lakebed "without first making application to and receiving written approval from the director").

The Idaho Legislature declares that "all encroachments upon, in or above the beds or waters of navigable lakes of the state [must] be regulated in order that the protection of property, navigation, fish and wildlife habitat, aquatic life, recreation, aesthetic beauty and water quality be given due consideration." IDAHO CODE § 58-1301 (1994).

Idaho defines "navigable lake" to mean "any permanent body of relatively still or slack water, not privately owned and not a mere marsh or stream eddy, and capable of accommodating boats or canoes and includes man-made reservoirs except where the jurisdiction thereof is asserted and exclusively assumed by a federal agency." *Id*. § 58-1302(a).

[131] IDAHO CODE § 58-1306 (1994). An "encroachment in aid of navigation" includes docks, piers, floats, pilings, breakwaters, boat ramps, channels or basins. *Id*. § 58-1302(h). An "encroachment not in aid of navigation" means "all other encroachments on, in or above the beds or waters of a navigable lake, including landfills or other structures not constructed primarily for use in aid of the navigability of a lake." *Id*. § 58-1302(i).

For regulations outlining the permit application process, see IDAHO ADMIN. CODE §§ 20.03.04.020 to 20.03.04.050 (1996).

person may request a hearing regarding the review of such application.[132] The state investigates every application, and bases its approval or denial of the permit on (1) the "economics of navigational necessity" including its public and private benefits, and (2) any detrimental effects on adjacent real property and lake value factors.[133]

(4) Department of Fish and Game

The Idaho Department of Fish and Game (IDFG), pursuant to the general policies and regulations promulgated by the Idaho Fish and Game Commission (Commission), is responsible for managing state fishery and wildlife resources.[134] The primary role of IDFG is to administer rules and licensing procedures applicable to fishing and hunting activities that occur within state boundaries.[135] The IDFG does have some control over certain water use activities that impact state fishery resources; the agency regulates the use of fish racks and traps,[136] fishways in dams,[137] and the screening of

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[132] IDAHO CODE § 58-1306(b)-(c) (1994). It is important to note that IDL is responsible for regulating fill and removal activities that affect the beds and shores of Idaho's navigable lakes; the Idaho Water Resources Department regulates fill and removal activities affecting rivers or streams pursuant to the state's stream channel protection program. *See supra* § 4.1(1)(F). The IDL, Department of Water Resources, and the Army Corps of Engineers have developed a joint application form for proposed fill and removal activities that will affect state rivers and lakes. IDAHO ADMIN. CODE § 37.03.07.030.01 (1996).

[133] IDAHO CODE § 58-1306(d) (1994). Idaho law emphasizes that the most important factors considered by the Board are the unreasonable adverse effects of the proposed project and adjacent property and undue interference with navigation. *Id*. § 58-1306(e).

[134] *See* IDAHO CODE § 36-101 (establishing the IDFG); *id*. § 36-106 (IDFG powers and duties); *id*. § 36-102 (Commission established); *id*. § 36-104 (Commission powers and duties).

[135] *See* IDAHO CODE §§ 36-301 to 36-310 (1994) (issuance and sale of licenses); *id*. §§ 36-401 to 36-414 (licenses to hunt, fish, and trap); *id*. §§ 36-501 to 36-505 (restrictions on the possession, transportation, sale and use of wildlife); *id*. §§ 36-601 to 36-606 (commercial traffic in skins, hides, and pelts of wildlife); *id*. §§ 36-801 to 36-805 (commercial fishing); *id* §§ 36-1301 to 36-1305 (the enforcement and application of fish and game law). *See also* IDAHO ADMIN. CODE §§ 13.01.04 to 13.01.17 (1996).

The Commission is also responsible for the classification and protection of state wildlife. Idaho Code §§ 36-201 to 36-202 (1994). *See also* IDAHO ADMIN. CODE § 13.01.06 (1996).

[136] IDAHO CODE § 36-905 (1994). All persons must obtain a permit from IDFG prior to placing a rack, trap, or any other obstruction across any stream or water of the state to take fish. *Id*.

[137] IDAHO CODE § 36-906(a) (1994). Since 1976, fishways have been required in Idaho for all dams or obstructions that restrict the "free and uninterrupted passage of fish in any stream." *Id*. *See also id*. § 36-906(d) (existing dams or other obstructions may be removed by the IDFG where such structures are either abandoned or not serving any "useful" purpose and appear to be detrimental to the fishery resource). Each fishway must be installed and maintained at the expense of the owner, and must accommodate both the upstream and

(continued)

water diversions.[138] In addition, the IDFG actively participates in the states minimum stream flow protection program.[139] The IDFG also participates in the federal hydropower licensing and re-licensing process.[140]

downstream migration of fish. *Id*. § 36-906. The IDFG must approve all fishway plans and specifications. *Id*. *See also id*. § 36-907 (allowing IDFG to keep a dam or obstruction open until the installation of an adequate fishway).

[138] IDAHO CODE § 36-906(b) (1994). Idaho requires fish screens for all diversions; such screens must be installed and maintained by the owner *Id*. IDFG also has the authority itself to install and maintain screens on gravity-diversions of less than 125 cfs so long as there is no interference with the amount of flow diverted. *Id*. § 36-908. For the last 35 years, Idaho has used federal funds to ensure that the most damaging diversions were screened. *See* James D. Crammond, *Screening Water Diversions for Fish Protection: A Survey of Policy, Practices and Compliance in the Pacific Northwest*, 2 Animal Law 101, 112 (1996). It is a misdemeanor offense in Idaho to tamper with fish screens. *Id*. §§ 36-908, 36-909.

[139] *See* IDAHO CODE § 42-1504 (1996) (allowing any state agency to submit a request in writing asking the Idaho Water Resource Board to consider the appropriation of a minimum stream flow). For a discussion of Idaho's minimum stream flow protection program, see *supra* § 4.1(1)(D).

[140] *See supra* § 2.3(2)(B) (examining the role of state fishery agency recommendations in the Federal Energy Regulatory Commission licensing process).

4.2 Montana

(1) Department of Natural Resources and Conservation: Water Resources Division

The Department of Natural Resources and Conservation (Department) is responsible for the management and allocation of Montana's water resources.[1] One of the Department's primary responsibilities involves administering Montana's water rights system. Specific Department duties relating to water rights include (1) issuing new water rights; (2) administering the states general water rights change authorization process; (3) processing federal and state agency applications to reserve instream flows; and (4) a limited role in the state's water right adjudication process.[2]

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[1] MONT. CODE ANN. § 85-1-101 (1995) (directing that the state, through the Department of Natural Resources and Conservation (Department), "shall coordinate the development and use of the water resources of the state so as to effect full utilization, conservation, and protection of its water resources"). *See also id.* § 85-2-204 (establishing Department authority over state water).

While the Department is the state's primary water resources agency, the Department's Water Resource Division (Division) is responsible for the day to day management of state water resources; the Division is further divided into the Water Projects Bureau, Water Management Bureau, Water Rights Bureau, and Water Operations Bureau. Unless otherwise noted, the remainder of this section will refer only to actions of the Department and not those specific to a particular Division or Bureau.

[2] For a discussion of each of these duties, see *infra* § 4.2(1)(A)-(C). The Department has numerous other important responsibilities regarding the management of Montana's water resources. First, the Department provides technical and management assistance to local water users associated with over thirty state-owned water projects. MONT. CODE ANN. §§ 85-1-107 to 85-1-811 (1995) (authorization scattered throughout these provisions). Second, the Department administers Montana's dam safety and flood plain management programs. *See id.* § 85-15-101 to 85-15-503 (Dam Safety Act); *and id.* § 76-5 (flood plain management). Third, the Department, through its state water plan, provides planning assistance addressing local water problems and state water policy development. *See id.* § 85-1-203 (directing the Department to develop and maintain a state water plan that outlines a "progressive program for the conservation, development, and utilization of the state's water resources").

For other Department powers and duties relating to water resources, see MONT. CODE ANN. §§ 85-2-111 to 85-2-113 (1995) (establishing Department powers and duties); *id.* § 85-7-103 (requiring the Department to report to the legislature regarding the establishment of irrigation districts); *id.* § 85-9-201 (creating water districts); *id.* §§ 76-13-101 to 76-13-601 (timber management); *id.* §§ 76-14-101 to 76-14-116 (rangeland management); *id.* §§ 76-15-105 (duties of Department regarding the supervision of conservation districts); *id.* §§ 76-16-104 to 76-16-105 (Department role in supervising and coordinating the formation and operation of grazing districts).

Actual supervisory control over the distribution of water in Montana belongs to Water Commissioners appointed by, and under the jurisdiction of, state district court judges. *See id.* §§ 85-2-406, 85-5-101 to 85-5-408. The Department does appoint and control ground water supervisors, who monitor the withdrawal of groundwater and carry out the orders of the Department regarding such withdrawals. *Id.* § 85-2-518.

(A) Issuance of New Water Rights

The Montana Constitution declares that "all surface, underground, flood, and atmospheric waters within the boundaries of the state are the property of the state for the use of its people and are subject to appropriation for beneficial use as provided by law."[3] According to Montana statutory and case law, the prior appropriation doctrine governs water use;[4] the first user to divert water from a particular source and apply such water to a beneficial use receives priority over subsequent appropriators.[5] All appropriations must be for a statutorily-defined beneficial use.[6]

Post-1973 rights to use water are acquired pursuant to the application, permit, and license procedures established by the Montana Water Use Act.[7] Montana's statutory procedures establish the exclusive means of acquiring a new right to appropriate state waters.[8] The appropriation procedures apply

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[3] MONT. CONST. art. IX, § 3, cl. 3. *See also* MONT. CODE ANN. § 85-2-101 (1995).

[4] *See* MONT. CODE ANN. § 85-2-401 (1995) (stating that "as between appropriators, the first in time is the first in right"); Mettler v. Ames Realty Co., 201 P. 702, 707-708 (1921) (concluding that the "common-law doctrine of riparian rights has never prevailed in Montana" and that the doctrine of prior appropriation "was intended to be permanent in its character, exclusive in its operation, and to fix the status of water rights in [Montana]").

[5] According to Montana's Water Code, to "appropriate" means to divert, impound, or withdraw a quantity of water. MONT. CODE ANN. § 85-2-102(1) (1995).

[6] Montana defines "beneficial use" to be the "use of water for the benefit of the appropriator, other persons, or the public, including but not limited to agricultural (including stockwater), domestic, fish and wildlife, industrial, irrigation, mining, municipal, power, and recreational uses." MONT. CODE. ANN. § 85-2-102(2) (1995). The beneficial use requirement serves as the basis, measure, and limit of usufructuary water rights acquired under Montana state law. McDonald v. State, 722 P.2d 598, 605 (Mont. 1986).

[7] MONT. CODE ANN. §§ 85-2-101 to 85-2-520 (1995). This Act, together with Montana's state-wide adjudication statute passed in 1979, creates a two-pronged approach to the control over, and documentation of, state water rights. The legislation in 1979 was enacted to streamline the adjudication process established by the State to certify and document valid water rights in existence prior to 1973. *See* Al Stone, *Montana, in* 6 WATERS AND WATER RIGHTS 478 (Robert E. Beck ed., 1991). For a brief discussion of Montana's adjudication process, and an explanation of the Department's role in such procedures, see *infra* § 4.2(1)(C).

[8] MONT. CODE ANN. § 85-2-302 (1995). *See also id.* § 85-2-301. The Department has the authority to promulgate rules that reject, modify, or condition permit applications in basins designated as "highly appropriated." *See id.* §§ 85-2-112(7), 85-2-319(1). Pursuant to this authority, the Department has closed to appropriation or required conditional or modified permit procedures for certain small stream and creek subbasins located within the Columbia River Basin. *See* MONT. ADMIN. R. § 36.12.1011 (1992) (Grant Creek Basin-Grant Creek is a tributary to the Clark Fork River); *id.* § 36.12.1014 (Walker Creek Basin-Walker Creek is a tributary of the Whitefish River); *id.* § 36.12.1017 (Sharrot Creek Basin-Sharrat Creek is a tributary of McCalla Creek in the Bitterroot River hydrologic basin); *id.* § 36.12.1018 (Willow Creek Basin-the Willow Creek Basin is part of the Bitterroot hydrologic basin); *id.* § 36.12.1020 (Sixmile Creek Basin-Sixmile Creek is a tributary of the Clark Fork River).

to both surface and ground water withdrawals.[9] However, outside the boundaries of a controlled groundwater area withdrawals of less than 35 gallons per minute do not require a permit.[10]

The Department is responsible for establishing the procedures governing the issuance of water right permits.[11] Each person wishing to appropriate state waters must submit an application to the Department. Once the application is deemed complete, the Department prepares a notice with facts pertinent to the application, and publishes the notice once in a newspaper that is distributed in the area of the water source.[12] Any person may object to an application if a proposed appropriation adversely affects her property, water rights, or interests.[13]

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[9] *Id*. While post-1973 surface and ground water uses are subject to the state permit process, Montana law does not require the integrated management of surface and ground waters. The Department recently called for the development of both a statutory and administrative framework for the integrated management of surface and ground water through the state planning process. DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION, WATER RESOURCES DIVISION, 1993-1997 STRATEGIC PLAN 17 (Sept. 1993).

[10] MONT. CODE ANN. § 85-2-306(1) (1995). Groundwater users outside such an area need only file a notice with the Department within 60 days of completing the construction of the well. *Id*. *See also id*. § 85-2-306(3) (stating that no permit is required prior to the construction of an impoundment or pit and the appropriation of water for stockwater purposes so long as (1) the capacity of the impoundment or pit is less than 15 acre-feet, (2) the appropriation is less than 30 acre-feet per year, (3) the appropriation is from a source other than a perennial flowing stream, and (4) the works are constructed on land that is owned by the applicant and is 40 acres or larger).

[11] MONT. CODE ANN. § 85-2-113 (1995). *See also* MONT. ADMIN. R. §§ 36.12.101 to 36.12.103 (1995).

[12] MONT. CODE ANN. § 85-2-307 (1995). The Department has the discretion to send the notice to any public agency or other person that the Department feels may be interested in or affected by the appropriation. *Id*. As a general rule, the Department provides personal notice to known water users in the affected area. Letter from Curt Martin, Regional Manager, Montana Department of Natural Resources and Conservation, to Brett Swift, Northwest Water Law and Policy Project (May 6, 1997) (on file with the Northwest Water Law and Policy Project).

[13] For the rules governing objections, see MONT. CODE. ANN. §§ 85-2-308, 85-2-309 (1995). *See also* MONT. ADMIN. R. §§ 36.12.201 to 36.12.234 (1995) (listing the rules for water right contested case hearings).

The Department must issue a permit where the applicant proves by a preponderance of the evidence that the statutory criteria governing permit-issuance have been met.[14] Applications to appropriate 4,000 acre-feet or more of water a year and 5.5 cubic feet per second (cfs) of water must satisfy additional criteria by clear and convincing evidence.[15] The Department may issue a permit subject to the terms, conditions, restrictions, and limitations deemed necessary to fulfill the permit-issuance criteria.[16] Furthermore, any permit issued by the Department prior to the determination of existing rights (under the correlative adjudication process established for pre-1973 rights) is provisional, and remains subject to final determination.[17]

Each permit specifies the time limits for the "perfection" of the water right; the time period in which the commencement of the appropriation works, completion of construction, and actual application of the water to the

[14] MONT. CODE. ANN. § 85-2-311 (1995). The applicant must show: (1) there is unappropriated water available at the point of diversion; (2) the rights of existing prior appropriators will not be affected; (3) the proposed diversion, construction, and operations of the appropriations works are sufficient; (4) the proposed use will not interfere with other planned uses for which a permit has been issued or for which water has been reserved; (5) she has a possessory interest or permission from someone who has a possessory interest in the land to which the water will be applied; (6) the water quality of a prior appropriator will not be adversely affected; (7) the proposed use will not interfere with the use for which the water source was classified by the state pursuant to the federal Clean Water Act; and (8) the ability of a water pollution discharge permit-holder to satisfy effluent limitations will not be deterred. *Id*. § 85-2-311(1)(a)-(i).

The Department requires that applicants show the "physical availability" of water. On gauged streams where there are sufficient flow records, the "physical availability of flows on a monthly basis must be demonstrated using available water resources data," including "monthly means and 20, 50, and 80th percentile exceedance frequency flows." MONT. ADMIN. R. § 36.16.105B(2)(a). For drainages with no gauging records, the Department may either waive calculation requirements or approve an acceptable flow estimation technique. *Id*. § 36.16.105B(2)(b).

[15] MONT. CODE ANN. § 85-2-311(3) (1995). The proposed use must be "reasonable," based on a consideration of: (1) existing and future demands of water for all beneficial purposes; (2) the benefits to the applicant and the state; (3) the effects on the quantity and quality of water for existing beneficial uses; (4) the availability and feasibility of using low-quality water for the proposed use; (5) the effects on private property by any creation of saline seep; and (6) the probable significant adverse environmental impact of the proposed use. *Id*.

Applications for the out-of-state transportation and use of Montana water must satisfy additional criteria by clear and convincing evidence. *See id*. § 85-2-311(4)(b)(i)-(iv).

[16] MONT. CODE ANN. § 85-2-312(1) (1995). The Department may not approve an application in a modified or conditional form unless the applicant is first given an opportunity to be heard. *See id*. § 85-2-310(2).

[17] MONT. CODE ANN. § 85-2-313 (1995).

proposed beneficial use must occur.[18] Following the initial application of the water to the proposed beneficial use, the permit holder must submit a certified statement describing the design, construction, and operation of the project.[19] The Department analyzes the applicant's statement and may inspect the project area.[20] If the permittee has completed the appropriation "in substantial accordance" with the terms of the prior-issued permit, the Department issues a water right certificate.[21] Once the Department issues a water right certificate, such right generally exists in perpetuity, and is appurtenant to the specific land to which the water is applied.[22]

(B) Water Rights Change Authorization Process

The Department must approve any changes to an existing appropriative right.[23,24] The appropriator must establish by a preponderance of evidence that certain statutory criteria are met prior to Department approval of the

[18] MONT. CODE ANN. § 85-2-312(2) (1995). The time limits set by the Department are based on the size, cost, and engineering and physical features of the project. *Id*. Failure to meet the time limitations imposed by the Department can result in the revocation or modification of the permit if the permit-holder does not show sufficient cause for the delay. *Id*. § 85-2-314.

[19] MONT. CODE ANN. § 85-2-315 (1995).

[20] *Id*.

[21] Id. The priority of a certificated water right dates from the filing of an application for a permit from the Department. *Id*. § 85-2-401.

[22] Al Stone, *Montana, in* 6 WATERS AND WATER RIGHTS 477 481 (Robert E. Beck ed., 1991). Montana law does not allow a water user to obtain or lose post-1973 water rights by adverse use, adverse possession, prescription, or estoppel. MONT. CODE ANN. § 85-2-301(3) (1995). However, an abandonment statute creates a presumption that a water right holder has abandoned her water right after ten years of non-use if water was available. *Id*. § 85-2-404. The abandonment statute does not apply to rights existing prior to 1973 unless such rights have been formally identified via the state adjudication process. *Id*. § 85-2-404(5).

[23] MONT. CODE ANN. § 85-2-402 (1995). For the criteria utilized by the department to analyze a particular change to an appropriation right, see *id*. § 85-2-402(2)-(6). These criteria are very similar to those utilized by the Department to evaluate the initial permit application. *See supra* notes 14-15. If more than 4,000 acre-feet a year or 5.5 cfs are to be consumed, the Department must also petition the Montana Legislature to approve the change in purpose of use or place of use. *Id*. § 85-2-402(5).

[24] A "valid objections" must "contain substantial credible information establishing to the satisfaction of the department" that either (1) the water quality of an appropriator will be adversely affected, or (2) the ability of a discharge permit holder to satisfy effluent limitations will be adversely affected.

change.[25] In addition, any water right holder seeking a change in the purpose of use or place of use for an appropriation of 4,000 or more acre-feet of water a year or 5.5 or more cubic feet per second of water must satisfy additional statutory requirements.[26] Department decisions regarding the change of purpose or use of such large appropriations must be confirmed by the Montana legislature after one or more public hearings.[27]

Montana law now allows the Montana Department of Fish, Wildlife, and Parks, and other public and private entities to seek instream flow protection through the state's general water rights change authorization process. Each of the instream flow alternatives except water reservations require an applicant to go through the water right change process; the role of the Department is to approve or disprove such applications, not as an advocate, but as the neutral decision-maker with responsibilities to both the people of the state and all water right holders.[28]

The Department is responsible for approving water right changes that allow water leases necessary to preserve instream flows. Pursuant to a statutorily imposed study, the Department may designate a stream reach eligible for the

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[25] The appropriator must establish that (1) the proposed use will not adversely affect the water rights of other persons or other planned uses for which a permit has been issued or for which water is reserved; (2) the proposed diversion, construction, and operation of the appropriation works is adequate; (3) the proposed use is a beneficial use; (4) the applicant has a possessory interest or written permission from a person with a possessory interest in the land to which the water will be applied; and (5) if the change involves salvaged water, the water-saving methods will in fact salvage the amount of water asserted by the appropriator. MONT. CODE ANN. § 85-2-402(2)(a)-(e) (1995).

If a valid objection is filed, the appropriator must also show that the water quality of an appropriator will not be adversely affected and that the ability of a discharge permit holder to satisfy effluent limitations will not be adversely affected. *Id*. § 85-2-402(2)(f)-(g). A "valid objection" includes "substantial credible information establishing to the satisfaction of the department" that water quality or effluent limitations will be adversely affected. *Id*. § 85-2-402(3).

[26] In addition to the general criteria, large appropriations must establish that the proposed use is a reasonable use. MONT. CODE ANN. § 85-2-402(4)(a)-(b) (1995). The Department's finding of reasonable use is based on a consideration of (1) the existing demands on the state's water supply and future projected uses including municipal water supplies, irrigation uses, and minimum streamflows; (2) the benefits to the applicant and the state; (3) the affects on the quantity and quality of water for existing uses; (4) the availability and feasibility of using low-quality water for the proposed use; (5) the effects on private property rights caused by saline seep; and (6) the probable significant adverse environmental impacts of the proposed use. *Id*. § 85-2-402(4)(b)(i)-(vi).

[27] MONT. CODE ANN. § 85-2-402(5)(a)-(b) (1995).

[28] Letter from Curt Martin, Regional Director, Montana Department of Natural Resources and Conservation, to Brett Swift, Northwest Water Law and Policy Project (May 6, 1997) (on file with the Northwest Water Law and Policy Project). For a discussion of Montana's water reservation process, see *infra* § 4.2(1)(C).

water leasing study only where water leasing is "necessary to maintain or enhance streamflows or fisheries."[29] The Department may identify only twenty stream reaches where water leasing can occur under the study.[30] Once a particular stream reach is approved for water leasing, the Montana Department of Fish, Wildlife, and Parks (DFWP) may apply to the Department to change an existing appropriative right in order to lease water to maintain or enhance streamflows to benefit fisheries. The amount of water available for each lease cannot exceed that which has historically been consumed by the lessor. [31]

By October 1996, the Department had approved nine water leases pursuant to the water leasing study program.[32] The most recent leases were established on Chamberlain and Pearson Creeks in order to preserve instream flows necessary to support important Westslope cutthroat trout populations located in the Blackfoot River drainage, an important Columbia River subbasin.[33] The Department has also approved leases for Mill, Cedar, Blanchard, Hells Canyon, and Tin Cup Creeks.[34] The Department has also approved the designation of Swamp, Big, Rattlesnake, and Rock Creeks as leasing study waters.[35]

In addition to instream rights secured pursuant to the state's water leasing study, the 1995 Montana Legislature enacted a temporary statute enabling the Department to process applications for a change in appropriation rights

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[29] MONT. CODE ANN. 85-2-437 (1995). The Montana Department of Fish, Wildlife, and Parks (DFWP) is primarily responsible for identifying streams where water leasing would be beneficial, and for monitoring and implementing the lease once approved by the Department of Natural Resources and Conservation. MONTANA DEPARTMENT OF FISH, WILDLIFE AND PARKS, ANNUAL PROGRESS REPORT: WATER LEASING STUDY 2 (Nov. 30, 1996). The DFWP submits an annual report to the Department of Natural Resources and Conservation regarding leasing activities for the previous year. MONT. CODE ANN. § 85-2-436(3)(a) (1995).

[30] MONT. CODE ANN. § 85-2-437 (1995).

[31] MONT. CODE ANN. § 85-2-436(2)(d) (1995). The lease term may be up to ten years, and can be renewed for another term not to exceed ten years. *Id*. § 85-2-436(2)(e).

[32] MONTANA DEPARTMENT OF FISH, WILDLIFE AND PARKS, ANNUAL PROGRESS REPORT: WATER LEASING STUDY 3 (Nov. 30, 1996).

[33] *Id*. For information about these new leases including the length of the stream reach, the technical methods used to verify critical streamflow, the legal standards governing the lease, the steps taken to insure existing users are not injured, and the means used to monitor the water lease see *id*. at 5-7.

[34] *Id*. The water leases have been secured from various individual water rights holders, a sewer district, and the United States Forest Service. *Id*. at 14.

[35] Id. at 2.

to "maintain or enhance instream flow to benefit the fishery resource."[36] Pursuant to the statute, the Department may authorize a change in use if the owner of a water right voluntarily agrees to (1) change the purpose of a consumptive use water right to instream flow for the benefit of the fishery resource, or (2) leases a consumptive right to another person for the purposes of benefiting the fishery resource.[37]

The 1995 Montana Legislature also created the Upper Clark Fork River Basin Instream Flow Pilot Program.[38] The law authorizes the Department to ratify the change or lease of appropriative rights within the Upper Clark Fork River Basin to preserve instream flows.[39] Like Montana's first instream flow statute, the program is temporary, and the maximum amount of water that can be preserved instream is limited to the amount historically consumed by the right-holder.[40] The Montana Department of Fish, Wildlife, and Parks (DFWP) has converted the salvaged portions of some of the agency's existing irrigation water rights to instream flows pursuant to the Upper Clark Fork Program.[41] The water will increase instream flows to protect important bull and brown trout spawning reaches and resident Westlope cutthroat trout habitat in Cottonwood Creek, a tributary of the Blackfoot River.[42]

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[36] MONT. CODE ANN. § 85-2-408 (1995). The statute expires June 30, 2005. *Id*. All temporary changes authorized pursuant to the statute prior to that date are valid until they expire, but may not be extended or renewed beyond that date. *Id*. § 85-2-409.

[37] MONT. CODE ANN. § 85-2-408(2)(a)(i)-(ii) (1995). The applicant for the change in use must show by a preponderance of the evidence that the change will not adversely affect existing uses and that the water is needed for instream flows. *Id*. § 85-2-408(3).

[38] MONT. CODE ANN. § 85-2-439 (1995). The Upper Clark Fork River Basin Steering Committee is directed to complete a report (to be submitted by 2004) (1) documenting the effects of the program on other water right holders, tax values and revenue, fisheries, recreation, water quality, and other economic, social, and environmental effects; and (2) recommending the termination, continuation, enlargement, or other modifications of the program. *Id*. § 85-2-439(9).

[39] *Id*. Each applicant must (1) include specific information on the length and location of the stream reach where flows are to be maintained or enhanced, (2) provide a detailed streamflow measurement plan, and (3) pay the costs associated with the installation of measuring devices and measuring and recording flows. *Id*. § 85-2-439(1)-(2).

[40] MONT. CODE ANN. §§ 85-2-439(3), (10) (1995).

[41] MONTANA DEPARTMENT OF FISH, WILDLIFE AND PARKS, ANNUAL PROGRESS REPORT: WATER LEASING STUDY 3-4 (Nov. 30, 1996). "Salvaged" water is made "available for beneficial use from an existing valid appropriation through application of water-saving methods." MONT. CODE ANN. § 85-2-102(15) (1995).

[42] MONTANA DEPARTMENT OF FISH, WILDLIFE AND PARKS, ANNUAL PROGRESS REPORT: WATER LEASING STUDY 3-4 (Nov. 30, 1996).

(C) Montana's Reservation System

Any state or federal agency may apply to the Department "to reserve flows for existing or future beneficial uses or to maintain a minimum flow, level, or quality of water."[43] The Department must limit any flows reserved for minimum flow, level, or quality of water to a maximum of fifty percent of the average annual flow of record on gauged streams.[44] All reservations have a priority date relating back from the filing with the Department of a notice of intention to reserve waters in a specific basin.[45] A reservation may not adversely affect any existing rights to water.[46]

The reservation process has been completed on the Yellowstone and Missouri River basins.[47] A reservation process on the Upper Clark River Basin was initiated but put on hold. The reservation process was replaced by a conflict resolution process implemented through the formation of the Upper Clark Fork River Basin Steering Committee and the legislative closure of the Basin to certain new water permits.[48] The Steering Committee completed the conflict resolution process and published the Upper Clark Fork River Basin Water Management Plan in 1994.[49]

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[43] MONT. CODE ANN. § 85-2-316 (1995). The applicant must denote the purpose of the reservation, the need for the reservation, the amount of water necessary, and that the reservation is in the public interest. *Id*. § 85-2-316(4)(a)(i)-(iv). The Department's criteria for determining the public interest are located at *id*. § 85-2-316(4)(b)(i)-(iv). For the Department's administrative regulations pertaining to the water reservation process, see MONT. ADMIN. R. §§ 36.16.101 to 36.16.122 (1994).

[44] MONT. CODE ANN. § 85-2-316(6) (1995). The allocation of ungauged streams is up to the discretion of the Department. *Id*.

[45] MONT. CODE ANN § 85-2-316(9)(a) (1995).

[46] *Id*.

[47] Al Stone, *Montana, in* 6 WATERS AND WATER RIGHTS 474 (Robert E. Beck ed., 1991). Waters on the Yellowstone River were reserved for irrigation and conservation districts, municipalities, the federal government, and state departments of State Lands, Natural Resources and Conservation, Health and Environmental Sciences, and Fish and Game. *Id*.

[48] MONT. CODE ANN. § 85-2-338 (1995).

[49] *See* UPPER CLARK FORK RIVER BASIN STEERING COMMITTEE, UPPER CLARK FORK RIVER BASIN WATER MANAGEMENT PLAN (Dec. 1994).

(D) Montana's Water Rights Adjudication Process

Montana has a statutory adjudication process whereby the validity of pre-1973 surface and ground water rights are determined.[50] Montana's adjudication process is mostly judicial; the State Water Divisions, presided over by Water Judges, hold the primary responsibility for determining these pre-code rights.[51] The Department's role in the state adjudication process is limited to the following administrative duties: (1) providing information and assistance as required by the water judge, (2) establishing information and assistance programs to aid claimants, (3) conducting field investigations of claims that the water judge has determined warrant inquiry, and (4) providing the water judge with all available information regarding existing rights.[52]

Currently, the entire state of Montana is under adjudication; over 216,000 water right claims having been filed with Montana water courts.[53] Among these claims are claims by the Department of Fish, Wildlife, and Parks for pre-code water rights established by special legislation passed in 1968 to protect instream flows in twelve of Montana's "blue ribbon" trout streams.[54] In the Columbia Basin these include the Blackfoot River, Rock Creek, and the North, South, and Middle Forks of the Flathead River.[55]

(2) Department of Environmental Quality

The Montana Department of Environmental Quality (DEQ) is responsible for the implementation of state water policy regarding surface and ground water

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[50] MONT. CODE ANN. §§ 85-2-201 to 85-2-243 (1995). *See also* Al Stone, *Montana, in* 6 WATERS AND WATER RIGHTS 478-480 (Robert E. Beck ed., 1991).

[51] *See* MONT. CODE ANN. §§ 3-7-101 to 3-7-502 for state guidelines regarding water divisions, water judges, water masters, and the disputes over which such entities have jurisdiction.

[52] MONT. CODE ANN. § 85-2-243 (1995).

[53] For a more in-depth discussion of Montana's adjudication process, see Dar Crammond, *Counting Raindrops: Prospects for Northwestern Water Right Adjudications*, D-1 to D-10 (1996) (on file with the Northwest Water Law and Policy Project). As of 1995, Montana had acted on 100,000 pre-1973 claims to state water; of the 85 declared subbasins in the state, 15 were under investigation, 34 had temporary decrees, six had preliminary decrees, and six had final decrees. *Id*. at D-9.

[54] Letter from Curt Martin, Regional Director, Montana Department of Natural Resources and Conservation, to Brett Swift, Northwest Water Law and Policy Project (May 6, 1997) (on file with the Northwest Water Law and Policy Project).

[55] *Id*.

quality.[56] DEQ carries out its regulatory duties pursuant to the rules promulgated by Montana's Board of Environmental Review (Board).[57] Most DEQ and Board actions involve fulfilling Montana's obligations under the federal Clean Water Act[58] (CWA). The state's primary duties under the CWA include: (1) the development and maintenance of state water quality standards; (2) formally identifying waters that are water quality limited; (3) ensuring that proposed projects requiring a federal license or permit comply with state water quality standards; (4) the implementation of the permit system governing point source discharges of water pollution; and (5) the development and maintenance of programs dealing with nonpoint source pollutants.[59]

(A) Water Quality Standards

Section 303 of the CWA requires that Montana develop water quality standards for all surface waters.[60] In setting state water quality standards, the Board designates uses for all state waters and establishes water quality

[56] MONT. CODE ANN. § 75-5-211 (1995).

[57] MONT. CODE ANN. § 75-5-201 (1995). The Board has seven members all appointed by the Governor. *Id*. § 2-15-3502. *See also id*. § 2-15-3502 for other Board membership requirements.

[58] Federal Water Pollution Control Act, 33 U.S.C. §§ 1251 to 1387 (1994).

[59] For a discussion of Montana's responsibilities under the CWA, see *infra* §§ 4.2(2)(A)-(D). For other DEQ duties that impact water resources, see MONT. CODE ANN. §§ 75-6-101 to 75-6-225 (1995) (public water supplies and treatment); *id*. §§ 75-10-101 to 75-10-1101 (solid, hazardous, and infectious waste management); *id*. § 75-11-201 to 75-11-301 (underground storage tanks); *id*. §§ 75-20-101 to 75-20-1205 (major facility citing including hydroelectric projects); *id*. §§ 80-15-101 to 80-15-414 (duties pursuant to the Montana Agricultural Chemical Ground Water Protection Act); *id*. §§ 82-4-101 to 82-4-446 (reclamation of strip, underground, coal, uranium, metal, and opencut mining operations).

[60] 33 U.S.C. § 1313(c)(2) (requiring that standards be established "to protect the public health or welfare, enhance the quality of water and serve the purposes of this [Act]").

criteria for each waterbody based on such uses.[61] The Board must hold public hearings in order to review existing water quality standards at least once every three years, and provide the final results of each review to the federal Environmental Protection Agency (EPA).[62]

Montana's water use classification system is based on four categories, under which state waters are designated as class A, B, C, or I.[63] These categories divide and classify Montana's waters primarily on the basis of "water temperature, fisheries, and aquatic life."[64] Montana has adopted water-use classifications for all of the major rivers and tributary streams of the Columbia River Drainage consisting of the Clark Fork, Flathead, and

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[61] In designating uses for state waters, the CWA directs the Board to consider the value of Montana's waters for "public water supplies, propagation of fish and wildlife, recreational purposes, and agricultural, industrial, and other purposes, and also taking into consideration their use and values for navigation." *Id*. § 302(c)(2)(A). EPA requires Montana to protect not only existing uses on a waterbody, but also any uses that are "attainable." 40 C.F.R. § 131.10. (1996) (stating that a particular use is "attainable" if it "can be achieved by the imposition of effluent limits required under section 301(b) and 306 of the [CWA] and cost-effective and reasonable best management practices for nonpoint source control"). In designating the uses for which a waterbody's water quality standards will be established (fishing, swimming, etc..) the Board may not eliminate existing uses, and has a limited ability to later eliminate designated uses. *Id*. §§ 131.10(g)-(h). *See also* MONT. CODE ANN. § 75-5-302 (1995).

The Board is also responsible for setting water quality criteria that serve to protect the designated uses of state waters. These criteria vary depending on the uses for which the particular water was designated, and are generally based on EPA established guidelines. *Id*. § 131.11.

[62] 33 U.S.C. § 1313(c)(1).

[63] *See* MONT. ADMIN. R. §§ 16.20.616 to 16.20.624 (1994). Montana also has a groundwater classification system established pursuant to the state's groundwater pollution control system. *See* MONT. ADMIN. R. §§ 16.20.1001 to 16.20.1025 (1994). Groundwater in Montana is classified as either class I (the most pure), II, III, or IV (the least pure). *Id*. § 16.20.1002.

[64] MONTANA DEPARTMENT OF HEALTH AND SCIENCES, WATER QUALITY DIVISION, 1994 MONTANA 305(B) REPORT: MONTANA WATER QUALITY 11 (June 1994). The A-closed and A-1 waters are "very high quality," the principal beneficial use of such waters is domestic, and various "[w]atershed protection and use restrictions that may be authorized by the A classifications are intended to protect the principal beneficial use." *Id*. The B waters are "multiple use waters" that are suitable for domestic use only after conventional treatment; such waters are also suitable for the propagation of cold-water (B-1 and B-2) and warm-water (B-3) fish, associated aquatic life and wildlife, and agricultural and industrial uses. *Id*.

Class C waters have designated uses similar to those identified for class B waters except that class C waters do not include drinking water as a beneficial use. *Id*. Class C-3 streams are "naturally high in total dissolved solids and may support warm water (non-salmonid) fisheries." *Id*.

Class I (impacted) waters have been "impacted by an activity which would not allow the stream to fully support drinking, recreation or fishery uses at the time the first stream classifications were determined (1955)." *Id*. Montana's primary goal regarding Class I waters is to fully recover class I waters to support all appropriate beneficial uses. *Id*.

Kootenai River Basins.[65] The state has also set forth water quality criteria that apply to specific waters depending on the designated uses for which a water has been classified.[66] Montana has yet to develop water quality standards specific to lakes and wetlands; existing surface water quality standards apply to all water types.[67]

(B) Water Quality Limited Waterbodies

Also pursuant to CWA Section 303, Montana must identify those waters that do not meet state water quality standards.[68] Once identified, Montana must prioritize the water quality limited waters, taking into account the severity of the pollution and the uses made of such waters.[69] In accordance with the priority ranking given to each water, Montana must establish the total

[65] *See* MONT. ADMIN. R. §§ 17.30.607 to 17.30.609 (1996).

[66] These criteria are the same for all classes of state waters, but the allowable level of a particular criteria varies depending on the particular uses for which a water has been classified. The criteria include: coliform bacteria; dissolved oxygen concentration; turbidity; water temperature; sediment, settlable solids, oils, or floating solids; true color; and carcinogens and toxics. MONTANA DEPARTMENT OF HEALTH AND SCIENCES, WATER QUALITY DIVISION, 1994 MONTANA 305(B) REPORT: MONTANA WATER QUALITY 11 (June 1994). *See, e.g.*, MONT. ADMIN. R. § 17.30.621 (1996) (disallowing any change from naturally occurring turbidity or water temperature on a water designated class A-closed).

[67] MONTANA DEPARTMENT OF HEALTH AND SCIENCES, WATER QUALITY DIVISION, 1994 MONTANA 305(B) REPORT: MONTANA WATER QUALITY 12 (June 1994).

[68] 33 U.S.C. § 1313(d)(1)(A). The waters identified pursuant to this section are referred to as "water quality limited waterbodies." EPA defines a water quality limited waterbody as "any segment where it is know that water quality does not meet applicable water quality standards, and/or is not expected to meet applicable water quality standards, even after the application of the technology-based effluent limitations required by sections 301(b) and 306 of the Clean Water Act." 40 C.F.R. § 130.2(j). In Montana, technology-based effluent limitations are set by the state. *See infra* § 4.2(2)(D).

[69] 33 U.S.C. § 1313(d)(1)(A). Montana prioritizes water quality limited waterbodies based on the following criteria: (1) the magnitude of the noncompliance or whether the waterbody is a high-quality resource at an early stage of degradation; (2) resource value; (3) size; (4) the availability of corrective technology or resources; (5) public recommendations; and (6) the potential for establishing TMDLs for the waterbody within two years. MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY, MONTANA LIST OF WATERBODIES IN NEED OF TOTAL MAXIMUM DAILY LOAD DEVELOPMENT 3-4 (1996).

maximum daily load (TMDL) for each pollutant suitable for calculation, at a level necessary to implement state established water quality standards.[70] Section 303 also requires that proposed new discharges in Montana adhere to EPA's antidegradation policy.[71]

Within the Columbia River Basin, over 240 miles of Montana's Clark Fork River Basin have been designated by the state as water quality limited due to a "nuisance algae problem" caused by high concentrations of phosphorous and nitrogen.[72] These sections of the Clark Fork River Basin have been a high priority for TMDL development since 1992.[73] Currently the state is working towards implementing the Clark Fork River Voluntary Nutrient

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[70] 33 U.S.C. § 1313(d)(1)(C). Establishing the TMDL for each pollutant is a three-step process: (1) establish the total amount of the pollutant that can be present in the particular waterbody while still complying with water quality standards; (2) allocate the TMDL to all known sources (including nonpoint sources), reserve some for new sources, and account for scientific uncertainty; and (3) translate the allowable load to end-of-the-pipe permit limits. Id. § 1313(d)(1)(C); 40 C.F.R. § 130.7.

See also MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY, MONTANA LIST OF WATERBODIES IN NEED OF TOTAL MAXIMUM DAILY LOAD DEVELOPMENT 6 (1996) (noting that a TMDL "consists of three components: waste load allocations (WLAs) for point sources of pollution, load allocations (Las) for nonpoint sources of pollution, and a margin of safety (MOS) which incorporates the uncertainty in making the other allocations"). Recent state legislation allows DEQ an additional ten years to complete the TMDL process. *See* H.B. 546, 55th Regular Session, 1997.

[71] 33 U.S.C. § 1313(d)(4)(B). EPA's antidegradation policy includes the following three requirements: (1) all existing uses and the water quality standards necessary to preserve them must be maintained; (2) where the water quality level of a waterbody is greater than that needed to support the propagation of fish, shellfish, wildlife, and recreation, such level must be maintained unless the state finds after completing a public process that allowing water quality to decline is necessary to accommodate important economic or social development; and (3) where high quality waters represent an outstanding national resource (outstanding resource waters (ORWs)), they must be maintained at current high levels. 40 C.F.R. § 131.12.

See also MONT. CODE ANN. § 75-5-303 (1995); MONT. ADMIN. R. §§ 17.30.701 to 17.30.717 (1996). Montana's nondegradation policy does not allow the DEQ to authorize a new project that would degrade state waters unless (1) there are no economical, environmental, or technical modifications that would make the project not degrade state waters; (2) the project will result in important economic or social development that outweighs the costs of allowing a water to be degraded; (3) existing and anticipated uses of state waters are protected; and (4) the least degrading water quality protection measures will be implemented prior to project approval. MONT. CODE ANN. § 75-5-303 (1995). *See also* MONT. ADMIN. R. § 17.30.708 (establishing DEQ procedures for issuing preliminary and final determinations regarding authorizations to degrade); *id* § 17.30.712 (delineating criteria for determining nonsignificant changes in water quality); *id*. § 17.30.715 (establishing criteria for determining nonsignificant changes in water quality).

For Montana's laws regarding the identification and classification of ORWs, see MONT. CODE ANN. §§ 75-5-315 - 316 (1995).

[72] MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY, MONTANA LIST OF WATERBODIES IN NEED OF TOTAL MAXIMUM DAILY LOAD DEVELOPMENT 9-10 (1996).

[73] *Id*.

Reduction Program (VNRP); the program focuses on water quality restoration by controlling the four main point source discharges that contribute 70-80 percent of the phosphorus and nitrogen loading into the river, and on water quality protection by controlling nutrient loading caused by nonpoint sources and new development activities.[74]

(C) Clean Water Act Section 401 Certification

Section 401 of the CWA requires Montana to issue a water quality certificate prior to the issuance of a federal license or permit that would result in a discharge into state waters.[75] The certificate issued by DEQ must include "any effluent limitations and other limitations, and monitoring requirements necessary to assure" that the federal license or permit will comply with both the CWA and any appropriate state law.[76] The United States Supreme Court has broadly construed state powers under the section 401 certification process.[77] Both Federal Energy Regulatory Commission hydropower licenses and Army Corps of Engineer CWA Section 404 dredge and fill permits cannot be issued without DEQ first certifying that such activities will not violate state water quality standards.[78]

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[74] *Id*.

[75] 33 U.S.C. § 1341(a). For Montana's rules governing the certificate application process, see MONT. ADMIN. R. § 16.20.1703 (1991). *See also id*. §§ 16.20.1706 to 16.20.1709 (covering tentative determinations, public notice, final determinations, and appeals to the Board).

[76] 33 U.S.C. § 1341(d). Any measures called for in the state certificate are then incorporated as an operating condition in the federal license or permit. *Id*. *See also* MONT. ADMIN. R. § 16.20.1705 (1991) (stating that DEQ certification options include conditional certification).

[77] P.U.D. No. 1 of Jefferson County v. Washington Dept. of Ecology, 114 S.Ct. 1900 (1994). The Supreme Court noted that water quality standards under the CWA are comprised of two components-designated uses of individual waterbodies and water quality criteria-and that "pursuant to § 401(d) the [s]tate may require that a permit applicant comply with both the designated uses and the water quality criteria of the state standards." *Id*. at 1910. In addition, the court upheld the Department's minimum instream flow requirements noting that "water quantity is closely related to water quality; a sufficient lowering of the water quantity in a body of water could destroy all of its designated uses, be it for drinking water, recreation, navigation or, as here, as a fishery." *Id*. at 1913.

[78] Montana must certify that any applicant for a federal license or permit that would result in a discharge into state waters will not violate state water quality standards. MONT. ADMIN. R. § 16.20.1701(2). The state defines "applicant" to mean "a person who applies for a license or permit issued by an agency of the federal government to conduct an activity that may result in discharge into state waters." *Id*. § 16.20.1702(1). Furthermore, "licensing or permitting agency" means "an agency of the federal government to which application is made for a license or permit to conduct an activity which may result in a discharge into state waters." *Id*. § 16.20.1702(2).

(D) Point and Nonpoint Source Programs

Montana's water quality standards are implemented through both point and nonpoint source programs. First, the Montana Pollutant Discharge Elimination System (MPDES) regulates point source pollutant discharges.[79] Therefore, Montana must establish effluent limitations in accordance with state water quality standards and incorporate these limitations as conditions into the individual MPDES permits issued by DEQ.[80]

[79] The CWA establishes and defines the National Pollution Discharge Elimination System (NPDES) program. *See* 33 U.S.C. § 1342. The NPDES applies to all discharges of pollutants from point sources into navigable waters. 33 U.S.C. § 1362(12). Anyone wanting to discharge pollutants from a point source into navigable waters must comply with the NPDES, and obtain a permit. 33 U.S.C. § 1342(a)(1). The permit generally contains conditions specifying limitations on the amount of pollution that can be discharged. *Id*.

Every state has the option to present to EPA a program under which the state would establish and administer the NPDES according to state law or under an interstate compact. 33 U.S.C. § 1342(b). Montana applied for and received authorization from EPA to administer the Montana Pollutant Discharge Elimination System (MPDES) in 1974. MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY, U.S. ENVIRONMENTAL PROTECTION AGENCY, 1996-1997 COOPERATIVE AGREEMENT 31 (Nov. 1996).

[80] Section 301 of the CWA establishes technology-based requirements for industrial discharges, with the severity of such requirements varying depending on whether the polluter is an existing discharger, a new source, or a pretreater (a facility that discharges into a publicly owned treatment works (POTW)). 33 U.S.C. § 1311.

The EPA must impose more stringent non-technological based limitations on NPDES permit recipients as necessary to achieve compliance with Idaho's water quality standards. Id. § 1311(b)(1)(C). Federal regulation requires the permit issuer (the state in Montana) to determine whether permitted discharges have the reasonable potential to cause or contribute to state water quality violations. 40 C.F.R. § 122.44(d)(1). Furthermore, EPA regulations disallow permit issuance where conditions are insufficient to prevent water quality violations. Id.

Montana has been given control over the point source discharge program because its effluent limitations and permit requirements are as stringent as those required by EPA. Montana law dictates that DEQ issue, suspend, revoke, modify or deny MPDES permits consistently with the rules established by the Board. MONT. CODE ANN. § 75-5-402 (1995). For a list of MPDES permits issued by DEQ, see MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY, MONTANA LIST OF WATERBODIES IN NEED OF TOTAL MAXIMUM DAILY LOAD DEVELOPMENT appendix A (1996).

Second, DEQ is responsible for the coordination and implementation of Idaho's nonpoint source programs.[81] Montana's nonpoint source program was approved by EPA in 1988 and focuses primarily on three major source categories: (1) agriculture, (2) forestry, and (3) mining.[82] For each of these activities, DEQ oversees the development and implementation of best management practices (BMPs)-- minimum standards established to ensure that agricultural, forestry, and mining practices are conducted in a manner that protects and maintains state water quality standards.[83]

(3) Department of Natural Resources and Conservation: State Lands Division

The Department of Natural Resources and Conservation(Department), subject to the policies established by the Board of Land Commissioners (Board), is responsible for the management and disposition of state-owned lands.[84] Pursuant to these responsibilities, Department duties include enforcing state laws and promulgating regulations governing: (1) the classification and development of state lands;[85] (2) the use of state rock, mineral, coal, oil, gas, geothermal, and hydroelectric resources;[86] and (3)

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[81] Section 319 of the CWA governs the development and maintenance of state nonpoint source management programs. 33 U.S.C. § 1329. According to Section 319, Montana must prepare and submit a report to EPA that (1) identifies waters that will not achieve water quality standards without some form of nonpoint source pollution control, (2) identifies problem nonpoint source pollutants by category and subcategory, (3) describes the process whereby best management practices and measures are developed to control nonpoint source pollution, and (4) identifies and describes state and local measures to control nonpoint source pollution. *Id*. § 1329(a)(1)(A)-(D).

Montana must also submit a nonpoint source management program to EPA. *Id*. § 1329(b). This program must incorporate the following mechanisms: (1) an identification of the best management practices (BMPs) to be implemented; (2) a description of the specific programs necessary to carry out the BMPs; (3) a schedule documenting stages for the implementation of the BMPs; (4) certification by the state attorney general that Montana's laws provide adequate authority for the program's implementation; and (5) sources of federal and other assistance to implement the program. *Id*. § 1329(b)(2)(A)-(E).

[82] MONTANA DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES- WATER QUALITY DIVISION, MONTANA WATER QUALITY 1994: THE MONTANA 305(B) REPORT 33 (June 1994).

[83] *Id*. For a brief discussion of other Montana nonpoint source programs and educational activities, see *id*. at 34.

[84] *See* MONT. CODE ANN. §§ 77-1-301 to 77-1-304. *See also id*. § 77-1-202 (setting forth the powers and duties of the Board). The Board is comprised of the governor, superintendent of public instruction, auditor, secretary of state, and attorney general. MONT. CONST. art. X, § 4 (1995).

[85] MONT. CODE ANN. §§ 77-1-401 to 77-1-613 (1995).

[86] MONT. CODE ANN. §§ 77-3-101 to 77-4-211 (1995).

agricultural, grazing, and other surface leases.[87] In addition, the Department monitors forest practices on state and private lands, and is required by statute to establish "streamside management zones."[88] The Department is also the sole state agency with the authority to determine title to the beds of lakes and streams in Montana.[89]

(4) Department of Fish, Wildlife, and Parks

The Department of Fish, Wildlife and Parks (DFWP), subject to the polices established by the Fish, Wildlife, and Parks Commission (Commission), is responsible for managing Montana's fish and wildlife resources.[90] The primary role of DFWP is to establish rules and licensing procedures applicable to fishing and hunting activities that occur within state boundaries.[91] However, DFWP does specifically influence the management of Montana's water resources by requesting that stream flows be reserved for

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[87] MONT. CODE ANN §§ 77-6-101 to 77-6-508 (1995).

[88] MONT. CODE ANN §§ 75-5-301 to 75-5-307 (1995). "Streamside management zone" means "a stream, lake, or other body of water and an adjacent area of varying width where management practices that might affect wildlife habitat or water quality, fish, or other aquatic resources need to be modified." *Id*. § 77-5-302(8). The streamside management zone is a strip "at least 50 feet wide" on both sides of the stream or lake, measured from the ordinary high water mark, but can extend beyond the high water make to protect wetlands and other areas that provide additional protection to sensitive areas. *Id*.

Montana law states that the purposes of the streamside management zones program are to (1) protect the quality and quantity of state waters, (2) provide standards that guide forest practices in such areas, and (3) provide guidelines for the management of wildlife habitat in streamside areas. *Id*. § 75-5-301(5)(a)-(c). In carrying out the purposes of the streamside management zone program, the Department must give operators the "flexibility" to use practices adapted to site-specific conditions. *Id*. § 75-5-301(5)(d). *See id*. § 77-5-303 for the state standards for forest practices in streamside management zones. The Department has the authority to "inspect forest practices on any federal, state, or private land" in Montana to enure compliance with the streamside management zone standards. *Id*. § 75-5-304. *See also id*. §§ 76-13-101 to 76-13-601 (Montana's general forest practices act; provisions applying to timber practices on state or private lands); *id*. §§ 76-16-101 to 76-16-415 (responsibilities of the Department regarding grazing practices in Montana).

[89] MONT. CODE ANN. § 77-1-105 (1995).

[90] MONT. CODE ANN. §§ 87-1-201 (1995). *See also id*. § 87-1-301 (discussing the powers and duties of the Commission). The Commission is comprised of five members, with one representative from each of the state districts identified by statute. *Id*. § 2-15-3402. At least one member "must be experienced in the breeding and management of domestic wildlife." *Id*.

[91] *See* MONT. CODE ANN. §§ 87-2-100 to 87-2-1004 (1995). The DFWP also has obligations to manage nongame and endangered species pursuant to Montana's Nongame and Endangered Species Conservation Act. *See id*. §§ 87-5-101 to 87-5-122 for DFWP and Commission duties pursuant to the Act.

fish and wildlife or recreational purposes,[92] implementing water leases for instream flows,[93] administering the state river restoration program,[94] and developing and maintaining fish hatcheries and fish ladders.[95] In addition, DFWP has an important role in protecting Montana's streams and streambeds from the adverse affects caused by either state government or private activities.

(A) Montana's Original Streambed Protection Act

Under Montana's original stream protection statute,[96] the DFWP must be given notice prior to the initiation by any agency or subdivision of the state of a construction project that will "obstruct, damage, diminish, destroy, change, modify, or vary the natural existing shape and form of any stream or its banks or tributaries."[97] The DFWP examines and investigates project plans, and if it determines that the proposed activities would adversely affect fish or game habitat it prescribes recommendations or alternatives that will diminish or

[92] *See* MONT. CODE ANN. § 85-2-316 (1995) (allowing any state agency to apply to the Department of Natural Resources and Conservation "to reserve waters for existing or future beneficial uses or to maintain a minimum flow, level, or quality of water throughout the year or at periods or for a length of time that the department designates").

[93] For a discussion of the DFWP's role in Montana's instream flow water leasing program, see *supra* § 4.2(1)(B)(2).

[94] MONT. CODE ANN. §§ 85-1-255 to 85-1-259 (1995). Montana's river restoration program involves "physical projects" to "improve rivers and their associated lands in order to conserve and enhance fish and wildlife habitat." *Id*. § 87-1-257. The DFWP works cooperatively with other state, local, private, tribal, and federal organizations to implement specific projects. *Id*. The program is funded by the river restoration account, which consists of a percentage of state resident, nonresident, and sportsman's license revenue. *Id*. § 87-1-258 - 259.

[95] MONT. CODE ANN. § 87-1-222 (1995) (requiring DFWP to "furnish plans for, direct, and compel the construction, installation, and repair of fish ladders upon dams and other obstructions in streams"). The fish ladders at dams must be installed and maintained at the expense of the dam owner. *Id*. The DFWP is responsible for paying for and installing fish screens, fish wheels, or any other device necessary to prevent fish from entering an irrigation ditch. *Id*. *See also id*. §§ 87-1-222(3), 87-1-223, for DFWP's authority to utilize state waters for fish propagation purposes.

[96] 1965 Mont. Laws ch. 10 (*codified at* MONT. CODE ANN. §§ 87-5-501 to 87-5-509 (1995)).

[97] MONT. CODE ANN. § 87-5-502 (1995).

eliminate such affects.[98] If the project operator refuses to modify theproject to avoid adversely affecting fish or game habitat, the DFWP may have the dispute arbitrated.[99]

(B) The Natural Streambed and Land Preservation Act of 1975

Pursuant to The Natural Streambed and Land Preservation Act of 1975,[100] all persons must give notice to the local conservation district prior to initiating a construction project in any state stream.[101] After a review of the project area and recommendation by the administrative team,[102] the decision whether to issue the permit is made by the board of supervisors of the applicable state conservation district.[103] Although DFWP actively participates in the review of non-state agency construction projects to ensure that fish and wildlife resources are protected, the Montana Department of Natural Resources and Conservation's Conservation and Resource Development Division is responsible (after consultation with the association of conservation districts) for promulgating the rules governing the streambed project process.[104]

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[98] MONT. CODE ANN. §§ 85-5-503, 85-5-504 (1995).

[99] MONT. CODE ANN. § 85-7-505 (1995).

[100] 1975 Mont. Laws ch. 463 (*codified at* MONT. CODE ANN. §§ 75-7-101 to 75-7-124 (1995)).

[101] MONT. CODE ANN. § 75-7-11 (1995). "Person" is defined as "any individual, corporation, partnership, association, or other legal entity not covered under 87-5-502." *Id.* § 75-7-103. In other words, any person not considered to be a federal or state agency must comply with the Act. Montana defines "stream" to mean "any natural perennial-flowing stream or river, its bed, and its immediate banks except a stream or river that has been designated by district rule as not having significant aquatic and riparian attributes in need of protection or supervision under 75-7-102." *Id.* § 87-5-503(6). Projects proposed to occur in or around lakeshore areas must apply for a permit from the local governing body. *See id.* §§ 75-7-201 to 217.

[102] The "team" is comprised of one representative each from the board of supervisors of the local conservation district, DFWP, and the applicant or applicant's representative. MONT. CODE ANN. § 75-7-503(8).

[103] Both the recommendations of the "team" and decision by the "supervisors" must be based on their determination of the reasonableness of the project considering the following factors: (1) the effects on soil erosion and sedimentation; (2) the availability of reasonably practical modifications or alternatives; (3) the likelihood that the project would cause upstream or downstream flooding or erosion; (4) the effects of the project on stream alteration; (5) streamflow, turbidity, and water quality; and (6) fish and aquatic habitat. MONT. CODE ANN. § 75-7-112(9)(b)(i)-(vi) (1995).

[104] Mont. Code Ann. § 75-7-117 (1995).

4.3 Oregon

(1) Water Resources Department

The Water Resources Department (Department) is responsible for managing Oregon's water resources according to the general policy direction established by the Water Resources Commission (Commission).[1] The day-to-to management authority of the Department is vested in the Director,[2] who is required to administer and enforce the state's water resources law as defined by statute,[3] and carry out any other duties delegated by the Commission.[4]

The Department's primary responsibilities regarding the management of Oregon's water resources include: (1) supervising the allocation and distribution of water, including regulating well-drilling and dam construction; (2) issuing water rights; (3) administering Oregon's instream flow statute; (4) initially determining pre-1909 rights to state water via Oregon's water rights adjudication process; and (5) licensing hydroelectric projects.[5]

(A) Supervisory Control Over the Allocation and Distribution of Water

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[1] OR. REV. STAT. §§ 536.025, 536.039 (1995).

[2] OR. REV. STAT. § 536.037 (1995). The Director is appointed by the Governor and confirmed by the Senate. *Id*. § 536.032. The Director serves a term of four years, and either she or a principal assistant must be a licensed engineer experienced in water related engineering. *Id*.

[3] OR. REV. STAT. § 536.037(1)(c) (1995).

[4] OR. REV. STAT. §§ 536.025, 536.037(1) (1995). While the Department is the state entity responsible for the general management of state water resources, the Commission serves primarily a policy-making function establishing the general procedures and guidelines for the operation of the Department. *Id*. § 536.025. The Commission consists of seven persons appointed by the Governor and approved by the Senate. *Id*. § 536.022. The Commission must include at least one member from both sides of the Cascade Mountain Range, with the remaining members taken from each of the five regional river basin management sections. *Id*.

The Commission has the power to conduct public hearings, issue subpoenas, and administer oaths. *Id*. § 536.029. In addition, one of the primary duties of the Commission is to formulate the state's water resources program. Oregon law describes this program as an "integrated, coordinated program for the use and control" of all water resources in the state, taking into consideration: (1) the existing water resources in the state; (2) the available means and methods for conserving and augmenting state waters; (3) the existing and contemplated uses of water for domestic, municipal, irrigation, power development, industrial, mining, recreation, wildlife, and fish life uses; and (4) for water pollution abatement. *Id*. § 536.300.

The water resources program consists of a state-wide water resources strategic plan, *id*., each of the individual basin plans, *id*, and the administrative rules promulgated by the Commission to carry out the state's integrated water policies, *id*. § 536.027. For Oregon's general policy statement regarding water resources, see *id*. § 536.220.

[5] For a discussion of these duties, see *infra* §§ 4.3(1)(A)-(E). For other Department responsibilities, see OR. REV. STAT. §§ 537.747 to 537.765 (regulation of water well construction); *id*. §§ 537.400 to 537.409 (reservoir permits); *id*. §§ 537.801 to 537.870 (diversion of waters from basin of origin); *id*. §§ 541.510 to 541.545 (release of water from impoundment or diversion structure).

The Department is responsible for the allocation of state water in accordance with Oregon law.[6] The Director appoints one watermaster for each of the state's water districts.[7] The Director-appointed watermasters supervise water distribution within the districts; each watermaster must "regulate the distribution of water among the various users of water from any natural surface or ground water supply in accordance" with existing rights of record.[8]

Oregon's statutory scheme grants discretion to the Commission regarding the installation and maintenance of measuring devices to assist the watermaster in determining the amount of water diverted from a stream.[9] The Commission generally requires such devices only when deemed "necessary for regulation or management purposes" by the watermaster.[10] However, recent Department policy requires that all new water permits be conditioned either to require measurement or reporting of actual water use, or to allow the Department to require such monitoring if necessary for proper water management.[11]

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[6] OR. REV. STAT. § 540.020 (1995).

[7] OR. REV. STAT. §§ 540.010-540.020 (1995). Oregon has 16 watermasters and ten assistant watermasters. OREGON WATER RESOURCES COMMISSION AND WATER RESOURCES DEPARTMENT, 1997-1999 STRATEGIC PLAN FOR MANAGING OREGON'S WATER RESOURCES 56 (Jan. 1997). These persons are responsible for the enforcement of over 70,000 water rights covering an area larger than 97,000 square miles. *Id*.

[8] OR. REV. STAT. § 540.045(1)(a) (1995). Watermaster duties include stream gauging and measurement, preparation of hydrographic records, dam safety and loan program inspections, well construction compliance and enforcement, final water right surveys, mapping and proposed certificate preparation, and field assistance to other Department units. OREGON WATER RESOURCES COMMISSION AND WATER RESOURCES DEPARTMENT, 1997-1999 STRATEGIC PLAN FOR MANAGING OREGON'S WATER RESOURCES 56 (Jan. 1997).

[9] OR. REV. STAT. § 540.310(2) (1995). The Commission may also require that the owner of a reservoir install and maintain a measuring device below and above the reservoir on each stream or source that flows into the reservoir. *Id*. § 540.330(1).

[10] OR. ADMIN. R. § 690-250-060 (1996). The watermaster must approve all measuring devices prior to installation. *Id*. The methods for the measurement and documentation of water use are governed by administrative rule. *Id*. § 690-85-015.

[11] OREGON WATER RESOURCES COMMISSION AND WATER RESOURCES DEPARTMENT, 1997-1999 STRATEGIC PLAN FOR MANAGING OREGON'S WATER RESOURCES 49 (Jan. 1997).

(B) Issuing Water Rights

The Oregon Water Code declares that "[a]ll water within the state from all public sources of water supply belongs to the public."[12] Since 1909, the doctrine of prior appropriation has governed the right to use surface waters in Oregon.[13] Under the doctrine of prior appropriation in Oregon, priority is granted to the first person who legally appropriates water and applies such water to a beneficial use.[14] "Beneficial use" is the "basis, the measure and the limit" of all water rights in Oregon.[15]

Oregon's Water Code delineates a specific application, permit, and licensing process pursuant to which one can acquire the right to use state waters. The use of either surface or ground water requires a permit from the Department,[16] although the statute exempts certain uses of both surface and

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[12] OR. REV. STAT. § 537.110 (1995). Washington and Montana also assert state ownership of water pursuant to statute. *See* WASH. REV. CODE § 90.03.010 (1996) ("Subject to existing rights all waters within the state belong to the public. . . ."); MONT. CODE ANN. § 85-2-101 (1995) (". . . the legislature declares that any use of water is a public use and that the waters within the state are the property of the state for the use of its people . . . ."). Idaho does so in its constitution. *See* IDAHO CONST. art. XV, § 1 (1993) ("The use of all waters now appropriated, or that may hereafter be appropriated . . . is hereby declared to be a public use, . . .").

[13] The 1909 Water Right Act established an exclusive permit system whereby water users could obtain rights to state water according to the doctrine of prior appropriation, thereby abolishing riparian rights not in existence at that time. OR. REV. STAT. § 539.010(8) (1995). Oregon recognizes riparian rights only to the extent such rights were established before the passage of the 1909 Water Code. *Id*. §§ 539.010(1)-(3). For a discussion of riparian rights in Oregon and the protections afforded thereto, see Janet C. Neuman, *Oregon, in* 6 WATERS AND WATER RIGHTS 699-700 (Robert E. Beck ed., 1994); and CHAPIN D. CLARK, SURVEY OF OREGON'S WATER LAWS (1983).

[14] The beneficial uses to which Oregon's waters may be applied include (1) domestic, (2) municipal, (3) irrigation, (4) power development, (5) industrial, (6) mining, (7) recreation, (8) wildlife and fish, and (9) water pollution abatement. OR. REV. STAT. § 536.300(1) (1995).

Some waters in Oregon have been withdrawn from appropriation. *See* OR. REV. STAT. §§ 538.110 to 538.300 (1995). In addition, specific Commission basin plans and surface or ground water regulations may further limit or prioritize the uses for which water may be used. *See* OR. ADMIN. R. §§ 690-500 to 690-520 (1996).

[15] OR. REV. STAT. § 540.610 (1995).

[16] OR. REV. STAT. §§ 537.130, 537.615 (1995). The remainder of this section focuses only on the surface water permit scheme. The method by which ground water is appropriated is very similar; the Department has for the most part joined the management of surface and ground waters into the same permit system. *See* Janet C. Neuman, *Oregon, in* 6 WATERS AND WATER RIGHTS 700 (Robert E. Beck ed., 1994). For the application and permit procedures established by the Oregon Groundwater Act, see OR. REV. STAT. §§ 537.505 to 537.796 (1995).

ground water from the permit process.[17] The Department manages surface and ground water sources conjunctively whenever it determines that the sources are hydrologically connected.[18]

To acquire a water right, one must first submit an application to the Department for a permit.[19] Within fifteen days of receiving an application, the Department must certify if the application is complete, and if so, endorse the date of receipt as the priority date for any water right issued thereafter.[20] When the application is complete, the Department performs an initial review to determine (1) if the proposed use is restricted or limited by statute or rule,

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[17] For exceptions to the permit and certificate requirement for surface water, see OR. REV. STAT. § 537.132 (1995) (treated ("reclaimed") municipal water); *id.* § 537.142 (any salmon and trout enhancement project certified by the Oregon Department of Fish and Wildlife); *id.* § 537.141(1) (emergency fire-fighting uses, water uses that divert water to water tanks or troughs from a reservoir for use under the existing permit or license for the reservoir, fish screens and fish bypass structures, and land management practices to save soil or improve water quality by temporarily impeding or changing the flow of diffuse surface water); *id.* § 537.405 (exempting certain ponds and reservoirs from the permit process).

Ground water uses exempt from the state permit and licensing procedures include: (1) stockwatering purposes; (2) the watering of any lawn or noncommercial garden not exceeding one-half acre; (3) the watering of school grounds, lawns, or fields not over 10 acres in a critical groundwater area; (4) single or group domestic purposes not exceeding 15,000 gallons a day; (5) down-hole heat exchange purposes; and (6) any single industrial or commercial purposes not exceeding 5,000 gallons a day. *Id.* § 537.545.

The Department may also grant a limited license to use or store surface or ground water for a fixed or short-term time period. *See id.* § 537.143.

[18] *See* OR. ADMIN. R. §§ 690-09-030 to 690-09-040 (1996) (standards by which the Department determines hydraulic connectivity and the potential that groundwater withdrawals will substantially interfere with surface flows). In addition, Water Resources Director must determine the hydrologic relationship between surface and ground waters tributary to a state scenic waterway. *See* OR. REV. STAT. § 390.835(8)(a) (1995) (stricter requirements apply to ground water permit applications where the Water Resources Director finds "that the use of ground water will measurably reduce the surface water flows necessary to maintain the free-flowing character of a scenic waterway in quantities necessary for recreation, fish and wildlife").

[19] OR. REV. STAT. § 537.140 (1995). The application must include: (1) the source of water supply; (2) the nature and amount of the proposed use; (3) the location and description of the proposed ditch, canal, or other works; (4) a statement declaring whether the applicant has permission or an easement allowing access to lands not owned by the applicant across which the proposed works lie; (5) the time when construction will begin; (6) the time needed for completion; (7) the time when the water will be applied to the proposed use; and (8) any other information required by the Department. *Id.* § 537.140(1)(a)(A)-(I). Other requirements apply if the water is to be used for irrigation, reservoir, municipal water supply, or mining. *See id.* § 537.140(1)(b)-(f). *See also* OR. ADMIN. R. § 690-310-040 (1996). The application must also include a map detailing the location of the proposed point of diversion and proposed place of use. OR. REV. STAT. § 537.140(4).

[20] OR. REV. STAT. §§ 537.150(1)-(2) (1995).

(2) whether water is available from the proposed source, and (3) any other issue the Department identifies at this early stage that may preclude or restrict permit approval.[21]

Within thirty days of determining the completeness of an application, the Department must complete its initial review and notify the applicant of its preliminary determination.[22] After notifying the applicant of its preliminary determination, the Department has sixty days to complete its review and issue a proposed final order approving or denying the application. In completing its review of an application, the Department must ensure that the appropriation will not impair or be detrimental to the public interest. Oregon's Water Code presumes that a proposed use will not impair or be detrimental to the public interest if four criteria are met: (1) the proposed use is allowed in the applicable basin program, (2) water is available, (3) the proposed use will not injure other water rights, and (4) the proposed use complies with Commission regulations.[23] A finding by the Department that one or more of the above criteria are not met effectively rebuts this presumption.[24] Additional public interest criteria apply to water right

[21] OR. REV. STAT. § 537.150(4)(a)-(c) (1995).

[22] OR. REV. STAT. § 537.150(5) (1995). Within seven days of notifying the applicant, the Department must give public notice in its weekly publication. *Id*. § 537.150(6). The public is then given 30 days in which to submit written comments to the Department. *Id*. § 537.150(7).

[23] OR. REV. STAT. § 537.153(2) (1995). In order to determine if water is available, each water right application is subject to "water availability analysis." *See* OR. ADMIN. R. § 690-300-010 (1996) (defining "water availability analysis" to mean "the investigation of stream flow or groundwater measurement records, watermaster distribution records, flow requirements of existing water rights, stream flow modeling in ungauged basins, minimum perennial streamflows, or scenic waterway flow requirements to determine if water is available to support the proposed use"). Water is deemed unavailable from a stream where (1) "the quantity of surface water available during a specified period is not sufficient to meet the expected demands from all water rights at least 80 percent of the time during that period," or (2) "[t]he appropriation of groundwater resources by all water rights exceeds the average annual recharge to a groundwater source over the period of record or results in the further depletion of already over-appropriated surface waters." *Id*. § 690-400-010.

[24] OR. REV. STAT. § 537.153(2)(a)-(b) (1995). The presumption can also be rebutted by evidence presented by comments, a formal protest, or the Department, that specific statutory public interest considerations would be impaired or detrimentally affected by the proposed use. *Id*. § 537.153(2)(b). These considerations include: (1) conserving the highest use of water for all purposes (including public recreation and the protection of commercial and game fishing and hunting); (2) the maximum economic development of state waters; (3) the control of state waters for all beneficial purposes; (4) the availability of water; (5) the prevention of waste or unreasonable use of water; (6) vested existing rights to the water source; and (7) the state water resources policy. *Id*. § 537.170(8)(a)-(g).

Furthermore, even where the Department finds the statutory presumption is met, it can still find that the proposed use would impair or detrimentally affect the public interest after considering the potential adverse effects that the proposed use may have on the following

applications to divert from either the mainstem Columbia or its tributaries upstream or downstream from Bonneville Dam.[25]

In order to obtain standing in a contested case proceeding or to protest the Department's proposed final order, a person must submit such requests within 45 days after the Department publishes the proposed final order.[26] The Director must issue her final order no more than sixty days after the close of the period for receiving protests.[27] Alternatively, the Director may schedule a contested case hearing if a protest was submitted and she finds that there are "significant disputes related to the proposed use of water."[28]

The Department may issue a permit for less water than applied for, or insert any terms or conditions in the permit necessary for the protection of the public interest.[29] The permittee must begin actual construction work within one year of the application's approval, and complete the work within a reasonable time, not to exceed five years from the approval date.[30] Upon completion of construction, the permittee must hire a water right examiner to survey the appropriation, submit a map of the survey to the Department,

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factors: (1) water use efficiency; (2) threatened, endangered, or sensitive species; (3) water quality; (4) fish or wildlife; (5) recreation; (6) economic development; and (7) local comprehensive plans. OR. ADMIN. R. § 690-310-120(3)(b)(A)-(G) (1996).

[25] *See* OR. ADMIN. R. §§ 690-33-000 to 690-33-230 (1996).

[26] OR. REV. STAT. § 537.153(5)-(6) (1995). It costs $50 to request standing, $150 to participate in a contested case, and $200 to submit a protest. *Id*. § 536.050(k), (p), (q).

[27] OR. REV. STAT. § 537.153(8) (1995).

[28] OR. REV. STAT. § 537.153(8)(b)(A) (1995). The Director may also schedule a contested case when requested by the applicant. *Id*. § 537.153(8)(b)(B). For the laws regarding Department contested case hearings, see *id*. § 537.170. The Department has 180 days from the time it proceeds with a water right application to issue a final order or schedule a contested case hearing. *Id*. § 537.170(1). If the Department does not act within the 180 day period, the applicant may apply to the Marion County Circuit Court for a writ of mandamus to compel the Department to issue a final order or schedule a contested case. *Id*. § 537.175(4). Therefore, if the Department does not act within the statutory period, it may be forced to issue a water right unless it submits an affidavit showing that issuing the permit would harm an existing water right. *Id*.

[29] OR. REV. STAT. § 537.190(1) (1995). The permit must specify the details of the authorized use, and identify any terms, conditions, or limitations on such use. *Id*. § 537.211(1). In addition, the permit-holder must apply for and receive approval from the Department prior to changing the point of diversion or using the water on land not appurtenant. *Id*. § 537.211(4).

[30] OR. REV. STAT. § 537.230 (1995). The Department can allow an extension upon a showing by the permit-holder that "good cause" exists for the delay. *Id*. *See id*. § 539.010(5) for the factors the Department considers in determining whether the extension is granted.

The "one year to begin construction" rule does not apply to municipal corporation or municipal water use applications. *Id*. § 537.230(1).

and request a water right certificate.[31] The Department issues a final water right certificate if it determines that the appropriation has been perfected in accordance with Oregon law and the conditions of the permit.

A certificated water right established pursuant to state permit and license procedures constitutes "conclusive evidence of the priority and extent of the appropriation."[32] The right to use water exists in perpetuity so long as the water right holder continually applies the water to its designated beneficial use in accordance with the terms of the certificate.[33] The right to use water is appurtenant to the specific land to which the water is applied; the Department must approve any change in the use or place of use of such water.[34]

(C) Oregon's Instream Flow Statute

Oregon law provides for the establishment of instream water rights, for beneficial uses of water without a diversion. The instream water rights statute[35] authorizes three state agencies to request an instream water right.[36] Either the Department of Fish and Wildlife (ODFW), the Department of Environmental Quality (DEQ), or the Department of Parks and Recreation (DPR) may determine the quantity of water necessary to

[31] OR. REV. STAT. § 537.230(3) (1995).

[32] OR. REV. STAT. § 537.270 (1995).

[33] OR. REV. STAT. § 537.250(3) (1995). A water right can be lost by statutory forfeiture, common-law abandonment, or possibly prescription. For the law relating to forfeiture, *see id.* § 537.610. Abandonment must be shown by both the relinquishment or ceasing of use and the intent to abandon. *See* Janet C. Neuman, *Oregon*, *in* 6 WATERS AND WATER RIGHTS 706 (Robert E. Beck ed., 1994). Prescriptive rights to water could be obtained in Oregon prior to 1909, but no case law exists regarding the loss of rights established after the 1909 Water Code. *Id.*

[34] OR. REV. STAT. § 540.510 (1995). *See id.* §§ 540.505 to 540.580 for Oregon laws governing changes in the use of water, the transfer of water rights, and exchanges. Generally, requests to change a water right will be reviewed by the Department to ensure there will be no injury to existing rights. *Id.* § 537.530.

[35] OR. REV. STAT. §§ 537.332 to 537.360 (1995).

[36] OR. REV. STAT. § 537.336 (1995). The Department defines "instream" as being within the natural stream channel or lake bed or place where water naturally flows or occurs," and "instream flow" as the minimum amount of water needed to "support the public use requested by an agency." OR. ADMIN. R. §§ 690-77-010(13)-(14) (1996).

preserve or enhance a particular public use, and then request that the Water Resources Commission issue an instream water right for that amount.[37]

The Department receives all agency applications for new instream water rights.[38] The Department determines whether the application is complete and undertakes an initial review to ensure that (1) no statute or rule limits the proposed use, (2) water is available from the proposed source during the times and for the amounts requested, (3) and there are no other issues that would preclude approval or restrict the proposed use.[39] The Department then decides if the public interest presumption is established for the proposed use.[40] A finding by the Department that specific statutory public interest considerations would be impaired or detrimentally affected by the proposed instream use effectively rebuts this presumption.[41]

After the Director issues a final order approving an instream water right, the Commission issues a certificate, with the right being held "in the name of the

[37] OR. REV. STAT. §§ 537.336(1)-(3) (1995). The ODFW requests instream rights in the amount necessary to support public uses relating to the "conservation, maintenance and enhancement of aquatic and fish life, wildlife and fish and wildlife habitat." *Id*. The DEQ may request water needed for "pollution abatement." *Id*. The DPR seeks instream rights needed to enhance or preserve public uses "relating to recreation and scenic attraction." *Id*.

Pursuant to statute, the Commission promulgated regulations governing the content requirements for an instream water right application. *See* OR. ADMIN. R. § 690-77-020(4)(a)-(k) (1996). The Department also encourages applications to (1) propose the means and location for measuring the instream water right and (2) and strategy for monitoring the flows for the instream right. *Id*. § 690-77-020(5).

[38] OR. ADMIN. R. § 699-77-027 (1996).

[39] OR. ADMIN. R. §§ 699-77-027, 699-77-029 (1996). For Department regulations governing public notice and comment periods for instream water rights, see *id*. § 690-77-031.

[40] OR. ADMIN. R. § 690-77-037 (1996). While the public interest presumption is the same as that applied to general permit applications pursuant to state statute (OR. REV. STAT. § 537.153 (1995)), the presumption for instream rights is invoked by administrative rule. The presumption is established where (1) the proposed use is allowed under the applicable basin program, (2) water is available, (3) the proposed use will not injure existing water rights, and (4) the proposed use complies with all other rules established by the Commission. *Id*. § 690-77-033.

[41] OR. ADMIN. R. § 690-77-037(3) (1996). The statutory considerations include (1) conserving the highest and best use of water for all purposes, (2) the maximum economic development of the waters involved, (3) the control of state waters for beneficial purposes, (4) the amount of waters available, (5) the prevention of wasteful uses, (6) the consideration of vested rights, and (7) the state water resources policy. OR. REV. STAT. § 537.170(8) (1995).

Even where the presumption is established, the Department may still find that the proposed use will impair or detrimentally affect the public interest considering the impact of the proposed use on the following factors: (1) threatened, endangered or sensitive species; (2) water quality; (3) fish or wildlife; (4) recreation; (5) economic development; and (6) local comprehensive plans. OR. ADMIN. R. § 690-77-037(3)(b) (1996).

Water Resources Department as trustee for the people of Oregon."[42] All instream water rights have the same legal status as any other water rights issued pursuant to the state's permit and licensing procedures,[43] and have a priority date relating back to the application filing date.[44] The statute contains a strict proviso that an instream water right shall not take away or impair any rights granted by the state prior to the establishment of the instream right.[45]

The Commission has formally adopted a state-wide policy goal to establish an instream water right on every stream, river, and lake that can "provide significant public benefit" in Oregon.[46] As of November 1996, the Department had granted 1315 instream water right certificates.[47] In addition, the Department is currently processing 151 new instream water right applications.[48]

(D) Oregon's Administrative Adjudication Process

Because Oregon recognizes water rights established prior to the adoption of the 1909 Water Code and 1955 Groundwater Code, the state has implemented a statutory system to verify and document the existence of such rights.[49] The Department plays a major role in Oregon's adjudication process; the agency conducts the initial investigation of various claims, and

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[42] OR. REV. STAT. § 537.341 (1995). *See also* OR. ADMIN. R. § 690-77-053 (1996).

[43] OR. REV. STAT. § 537.350 (1995).

[44] OR. REV. STAT. § 537.341 (1995). *See also id*. § 537.346 (mandating that all minimum perennial streamflows established prior to 1987 be converted to instream water rights, with a priority date equal to that of the original minimum perennial streamflow). There are two provisions in the Oregon Water Code that provide certain instream rights with early priority dates. First, an instream right acquired by purchase, lease, or gift assumes the priority date of the right purchased , leased, or received by gift. *Id*. § 537.348. Second, the priority date of an instream right obtained from "conserved water" dates one minute after the priority date of the right held by the appropriator who instituted the conservation measures. *Id*. § 537.485. However, most existing instream water rights have post-1987 priority dates, some have post 1955 dates pursuant to the minimum streamflow statutes, and a relative few have pre-1987 priority dates obtained via purchase or through the conserved water statute.

[45] OR. REV. STAT. § 537.334 (1995).

[46] OREGON WATER RESOURCES COMMISSION AND WATER RESOURCES DEPARTMENT, 1997-1999 STRATEGIC PLAN FOR MANAGING OREGON'S WATER RESOURCES 15 (Jan. 1997).

[47] *Id*.

[48] *Id*.

[49] *See* OR. REV. STAT. §§ 539.005 to 539.240 (1995) (for surface water); *id*. §§ 537.585 to 537.610 (for groundwater). All pre-code claims to utilize state surface waters must have been filed with the Department on or before December 31, 1992. *Id*. § 539.240(1). All pre-1955 claims to groundwater must have been filed by May 29, 1962. *Id*. § 537.605(6).

determines "the relative rights of the various claimants to the waters" being adjudicated.[50] The Department files its findings of the rights to a particular stream with the state circuit court. The court reviews the findings and issues a decree officially upholding or modifying the Department's conclusions.

Oregon has completed 94 adjudication proceedings, verifying and documenting vested pre-code water rights for approximately 70% of the state.[51] In 1975, the Department invoked the statutory procedures for the mass adjudication of claims to surface waters in the Klamath River Basin. Delayed for many years by various lawsuits in federal court addressing federal participation, the Klamath Basin adjudication is now proceeding towards completion.[52]

(E) Hydroelectric Project Licensing

Oregon has an in-depth statutory scheme that governs the development and operation of new hydroelectric projects.[53] All hydropower projects begun or constructed after February 26, 1931, must comply with state permit and

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[50] OR. REV. STAT. §§ 539.021 to 539.140 (1995).

[51] OREGON WATER RESOURCES COMMISSION AND STRATEGIC WATER MANAGEMENT GROUP, 1993-1995 BIENNIAL WATER MANAGEMENT PROGRAM FOR OREGON 44 (Jan. 1993).

[52] A suit filed by the Klamath Indian Tribe for a declaration of their water rights reserved for hunting and fishing rights delayed the initial stages of the Klamath Basin Adjudication. *See* U.S. v. Adair, 723 F.2d 1394 (9th Cir. 1984). After the Ninth Circuit verified the Tribe's reserved rights, the Department resumed the adjudication. The adjudication was again halted when the federal government and the Tribe sued the State of Oregon, arguing that Oregon's administrative adjudication process did not qualify as a "suit" under the McCarran Amendment. U.S. v. Oregon, 44 F.3d 758 (9th Cir. 1994), *cert. denied*, 116 S.Ct. 378 (1995). The Ninth Circuit held that Oregon's administrative adjudication process was comprehensive enough to qualify as a "suit" under the McCarran Amendment so long as judicial review was available. *Id*. at 765-67. The court also found that the McCarran Amendment applied even though the Klamath Basin adjudication does not involve groundwater claims. *Id*. at 769.

For a more complete discussion of Oregon's adjudication process and both the history and development of the Klamath Basin adjudication, see Dar Crammond, *Counting Raindrops: Prospects for Northwestern Water Right Adjudications* B-1 to B-15 (1996) (on file with the Northwest Water Law and Policy Project). Currently, the Klamath Basin adjudication is at the notice stage; the Department has not yet initiated the individual claims analysis. *Id*.

[53] *See* OR. REV. STAT. §§ 543.010 to 543.900 (1995). The legislature declared that it is Oregon's policy "[t]o protect the natural resources of this state from possible adverse impacts caused by the use of the waters of this state for the development of hydroelectric power." *Id*. § 543.015(1). Oregon's licensing scheme applies to new licenses; the state has no re-licensing process for existing projects. However, the state is currently considering re-licensing legislation. *See infra*, notes 73 to 75, and accompanying text.

licensing procedures.[54] While projects or developments constructed by the federal government are exempt from Oregon's licensing process,[55] projects licensed by the federal government are not. In addition, all hydropower project water rights, including those obtained by projects subject to the federal licensing process under the auspices of the Federal Energy Regulatory Commission (FERC), must be initiated, perfected, acquired or held in compliance with state law.[56]

The Oregon Water Resources Commission (Commission) is the primary state entity responsible for carrying out state laws governing hydroelectric projects. The Commission has the power to issue preliminary permits and licenses, conduct investigations and collect information, prescribe the forms of all accounts and records kept by licensees, and any other acts deemed necessary by the Commission to carry out state law.[57]

Any person who proposes to operate a hydropower project in Oregon must apply for a preliminary permit with the Commission.[58] Upon receipt of an application, the Commission must notify certain interested parties of the filing.[59] Any preliminary permit granted by the Commission cannot exceed three years in duration, and is not transferable unless approved by the

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[54] OR. REV. STAT. § 543.120 (1995). Hydroelectric projects in existence prior to 1931 applied for and received permanent state water rights. The 1931 legislation left these rights, referred to as "power claims," in tact. OREGON WATER RESOURCES DEPARTMENT, HYDROELECTRIC REAUTHORIZATION TASK FORCE REPORT TO THE SIXTY-NINTH LEGISLATIVE ASSEMBLY 4 (1997).

[55] OR. REV. STAT. § 543.140 (1995). In addition, both municipal corporations and utility districts are exempt from certain requirements. *Id*. § 543.150.

[56] OR. REV. STAT. § 543.110 (1995). This requirement applies to the use of any waters of the state, including those over which Oregon has concurrent jurisdiction. *Id*.

[57] OR. REV. STAT. § 543.050 (1995). For rules promulgated by the Commission regarding the appropriation and use of water for hydroelectric purposes and standards for hydroelectric applications, see OR. ADMIN. R. § 690-51-100 (1996).

[58] OR. REV. STAT. § 543.210 (1995). This requirement also applies to any person applying to the Federal Energy Regulatory Commission (FERC) for a preliminary permit. *Id*. In addition to the person's name and address, the application must include (1) the approximate site of the proposed dam and diversion, (2) the amount of water, (3) the theoretical horsepower of the project, and (4) any other information required by the Commission. *Id*. § 543.210(2)(a)-(e). The date the application was filed with the Commission will serve as the priority date for any water right granted therefrom. *Id*. § 543.210(3).

[59] OR. REV. STAT. § 543.220 (1995). The Commission must notify any municipality or other person that it determines is likely to be interests, and any owner of land that is adjacent to part of the stream in which the flow of water will be decreased or adjacent to the site of the proposed project. *Id*. In addition, the Commission must publish notice at least once a week for four consecutive weeks in a newspaper of general circulation each county in which the county is located. *Id*.

Commission.[60] The holder of a preliminary permit is given priority in applying for a subsequent license to cover the project for which the preliminary permit was issued.[61]

Oregon's licensing procedures are very similar to those required for a preliminary permit. However, a license to operate a hydroelectric facility cannot exceed 50 years in duration.[62] In addition, if the project is also subject to federal licensing procedures under the auspices of the Federal Energy Commission (FERC), the state license must be concurrent with and expire with the federal license.[63] The Commission sets all terms and conditions for each license.[64] A license may be denied where the applicant did not comply with the conditions in a preliminary permit.[65] Where no preliminary permit exists, a preference in the licensing process is granted to the applicant the Commission determines is best adapted to conserve and utilize the hydroelectric power generated by the project.[66]

The Commission must hold a hearing regarding the grant of a preliminary permit or license for a project of more than 100 theoretical horsepower.[67] A hearing may be held for projects of less than 100 theoretical horsepower if the Commission determines that such discourse is in the public interest.[68] In addition, Oregon law allows any person to protest an application to

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[60] OR. REV. STAT. § 543.250 (1995). The Commission fixes the terms and conditions of each preliminary permit. *Id*. The preliminary permit can also be canceled by the Commission after a hearing if it is shown that the holder has not complied with the permit conditions. *Id*.

[61] *Id*.

[62] OR. REV. STAT. § 543.260 (1995).

[63] *Id*.

[64] *Id*. Each license issued in Oregon must be on the following conditions: (1) that the project is well adapted to the development and utilization water power; (2) that the licensee constructs the project according to the maps, plans, and specifications filed with and approved by the Commission; (3) that the operations of the project are controlled by the rules outlined by the Commission; (4) that the licensee will maintain the project in good order and repair; (5) that the licensee will pay annually to the state up to one dollar for each horsepower covered by the license; and (6) any other conditions the Commission deems necessary. *Id*. §§ 543.300(1)-(6).

In addition, the Department must impose as a condition to any water right permit or license granted for hydroelectric purposes that the operator of the project allow the Oregon Department of Fish and Wildlife to perform any tests or studies it deems necessary to ensure the effectiveness of fish protection measures. *Id*. § 543.265.

[65] OR. REV. STAT. § 543.260(2) (1995).

[66] OR. REV. STAT. § 543.260(3) (1995). Municipal corporations and utility districts always receive a preference in the licensing process, so long as such entities reimburse any holder of a preliminary permit for all reasonable actual expenditures. Id.

[67] OR. REV. STAT. § 543.225 (1995).

[68] *Id*.

appropriate water for hydroelectric power on the ground that the project would be detrimental to the various uses of the public waters involved.[69] Following a hearing, the Commission either issues an order setting forth the conditions and restrictions to be included in a preliminary permit or license, or denies the application because the project would impair or be detrimental to the public interest or contrary to the state's coordinated, integrated state water policy.[70]

Prior to issuing a permit or license, the Commission must determine the cumulative impacts of the project in light of (1) other proposed hydroelectric projects for which an application is pending before the Department, or (2) the existing hydropower projects in the same basin.[71] In addition, Oregon has established certain minimum standards that apply to the development of hydroelectric power. These minimum standards apply to any action of the Commission relating to the development of hydroelectric power and require that: (1) anadromous salmon and steelhead resources be preserved; (2) all activities be consistent with the Columbia River Basin Fish and Wildlife Program promulgated by the Northwest Power Planning Council; (3) no activity result in the net loss of wild game fish or recreational opportunities; and (4) other natural resources in the project area including water quality, wildlife, scenic and aesthetic values, historic, cultural and archaeological sites be maintained or enhanced.[72]

The state licensing procedures explored above apply to new hydroelectric projects only. The 1931 legislation creating the licensing procedures provided that the state would take over ownership of the project once the licensee's

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[69] OR. REV. STAT. § 543.230 (1995). Specifically, a person may protest on the grounds that the proposed construction "would damage or destroy the use or utility of the stream or other body of water involved for other beneficial purposes, including propagation of fish, scenic, esthetic, recreational, park, highway or other beneficial use." *Id*.

[70] OR. REV. STAT. § 543.225(2) (1995). In determining whether the proposed project would impair or be detrimental to the public interest, the Commission must consider: (1) conserving the highest and best use of water for all purposes, (2) the control of all state waters for all beneficial purposes, (3) the maximum economic development of the waters involved, (4) the amount of water actually available, (5) the prevention of waste, (6) all vested water rights, and (7) the state water resources policy. *Id*. § 543.225(3)(a)-(g).

[71] OR. REV. STAT. § 543.255 (1995). If the Commission determines that there are cumulative impacts, then it must begin a consolidated review process conducted as a contested case hearing. *Id*. § 543.255(3).

[72] OR. REV. STAT. §§ 543.017(1)-(4) (1995). These minimum standards do not apply to existing water rights or state licenses for existing hydroelectric facilities until 1998. *Id*. § 543.017(4). In addition, the Oregon legislature is currently considering a bill that would impose different conditions to existing projects. H.B. 2119, 69th Legislative Assembly, Regular Session (1997).

investments were recovered; therefore the Act did not provide a relicensing or reauthorization process for existing projects.[73] The 1995 Oregon legislature removed the "state takeover policy" from the Act, and directed that the Water Resources Director convene a hydroelectric task force to develop a process for reauthorizing existing projects.[74] The 1997 Oregon State Legislature is currently considering a bill that incorporates the recommendations of the hydroelectric task force and creates a state reauthorization process.[75]

(2) Department of Environmental Quality

The Department of Environmental Quality (DEQ) is responsible for the development and implementation of Oregon's water policy regarding surface and ground water quality.[76] DEQ carries out its regulatory duties pursuant to the policies and rules promulgated by Oregon's Environmental Quality Commission (EQC).[77] Most DEQ and EQC actions involve fulfilling Oregon's obligations pursuant to the federal Clean Water Act[78] (CWA).[79] The state's primary duties under the CWA include: (1) the development and maintenance of state water quality standards; (2) formally identifying waters that are water quality limited; (3) ensuring that proposed projects requiring a

[73] Oregon Water Resources Department, Hydroelectric Reauthorization Task Force Report to the Sixty-Ninth Legislative Assembly 4 (1997).

[74] 1995 Or. Laws 229, § 6. The task force consisted of representatives from the following state agencies or public groups: the Department of Fish and Wildlife, the Department of Environmental Quality, the State Parks and Recreation Department, the Public Utility Commission, the Division of State Lands, the Office of Energy, the State Department of Geology and Mineral Industries, investor-owned utilities, publicly owned utilities, municipalities, environmental organizations, and non-utility owners of hydroelectric projects. *Id*. § 6(1)(a)-(l).

[75] H.B. 2119, 69th Legislative Assembly, Regular Session (1997). For a discussion of the hydroelectric task force recommendations, see OREGON WATER RESOURCES DEPARTMENT, HYDROELECTRIC REAUTHORIZATION TASK FORCE REPORT TO THE SIXTY-NINTH LEGISLATIVE ASSEMBLY 4 (1997). One of the most important considerations involved fitting Oregon reauthorization procedures within the parallel FERC re-licensing process. Currently, twenty-six projects subject to both Oregon and FERC jurisdiction will have their state or federal license expire in the next ten years. *Id*. at 14. In addition, the reauthorization process will apply to the 119 state authorized projects that fall solely under state jurisdiction; 82 of these licenses will expire in the next 10 years. *Id*. at 12.

[76] *See* OR. REV. STAT. § 468.035 (1995) (outlining the functions of the Department).

[77] *See* OR. REV. STAT. § 468.015 (1995) (outlining the functions of the EQC); *id*. § 468.020 (providing the authority to promulgate rules). The EQC has five members appointed by the governor and confirmed by the Senate. *Id*. § 468.010.

[78] Federal Water Pollution Control Act, 33 U.S.C. §§ 1251 to 1387 (1994).

[79] *See* OR. REV. STAT. § 468B.035 (1995) (the EQC "may perform or cause to be performed any and all acts necessary to be performed by the state to implement within the jurisdiction of the state the provisions of the Federal Water Pollution Control Act").

federal license or permit comply with state water quality standards; and (4) the implementation of a permit system governing point source discharges of water pollution.[80]

(A) Water Quality Standards

Section 303 of the CWA requires that Oregon develop water quality standards for all surface waters.[81] In setting state water quality standards, the Oregon Water Resources Commission designates uses for all state waters,[82] and the EQC establishes water quality criteria for each waterbody based on such uses.[83] The EQC must hold public hearings in order to review

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[80] For a discussion of Oregon's responsibilities under the CWA, see *infra* §§ 4.3(2)(A)-(D).

[81] 33 U.S.C. § 1313(c)(2) (requiring that standards be established "to protect the public health or welfare, enhance the quality of water and serve the purposes of this [Act]").

[82] In designating uses for state waters, the CWA directs the state to consider the value of Oregon's waters for "public water supplies, propagation of fish and wildlife, recreational purposes, and agricultural, industrial, and other purposes, and also taking into consideration their use and values for navigation." *Id*. § 302(c)(2)(A). EPA requires Oregon to protect not only existing uses on a waterbody, but also any uses that are "attainable." *See* 40 C.F.R. § 131.10. (1996) (stating that a particular use is "attainable" if it "can be achieved by the imposition of effluent limits required under section 301(b) and 306 of the [CWA] and cost-effective and reasonable best management practices for nonpoint source control). In designating the uses for which a waterbody's water quality standards will be established (fishing, swimming, etc.) the EQC may not eliminate existing uses, and has a limited ability to later eliminate designated uses. *Id*. §§ 131.10(g)-(h).

The Oregon Water Resources Commission (Commission) is directed to classify the waters of the state according to their "highest and best use." OR. REV. STAT. § 536.340 (1995). Waters are classified according to the uses associated with similar waters in a particular drainage basin. Drainage basins within the Columbia River Basin in Oregon include the North Coast, Willamette, Sandy, Hood, Deschutes, John Day, Umatilla, Grande Ronde, Powder, Malheur, Malheur Lake, and Owyhee.

The Commission defines "beneficial use" to mean "domestic, fish life, industrial, irrigation, mining, municipal, pollution abatement, power development, recreation, stockwater and wildlife uses." OR. ADMIN. R. 690-400-010 (1996). In establishing the water quality standards that apply within each basin, DEQ has divided many of these broad beneficial use categories into several specific uses. OREGON'S DEPARTMENT OF ENVIRONMENTAL QUALITY, OREGON'S 1994 WATER QUALITY STATUS ASSESSMENT REPORT: 305(B) REPORT 2-13 (April 1994). For instance, if a basin or particular waterbody is classified based on its use for fish life, DEQ may develop specific standards tailored to preserve water quality for anadromous fish passage, salmonid rearing, or resident fish. *Id*.

[83] The EQC is responsible for setting water quality criteria that serve to protect the designated uses of state waters. These criteria vary depending on the uses for which the particular water was designated, and are generally based on EPA established guidelines. *Id*. § 131.11. *See also* OR. REV. STAT. § 468B.048 (1995) (allowing the EQC to establish by rule quality and purity standards for state waters).

For DEQ's general water quality policies and guidelines that apply to all basins, see OR. ADMIN. R. 340-41-026 (1996). For DEQ's water quality criteria specific to each of the state's major drainage basins, see *id*. §§ 340-41-202 to 340-41-975.

(continued)

existing water quality standards at least once every three years, and provide the final results of each review to the federal Environmental Protection Agency (EPA).[84]

(B) Water Quality Limited Waterbodies

Also pursuant to CWA Section 303, Oregon must identify those waters that do not meet state water quality standards.[85] Once identified, Oregon must prioritize the water quality limited waters, taking into account the severity of the pollution and the uses made of such waters.[86] In accordance with the priority ranking given to each water, Oregon must establish the total maximum daily load (TMDL) for each pollutant suitable for calculation, at a level necessary to implement state established water quality standards.[87]

DEQ also monitors ground water quality pursuant to Oregon's Groundwater Protection Act. *See* OR. REV. STAT. §§ 468B.150 to 468B.190 (1995); OR. ADMIN. R. § 340-40 (1996).

[84] 33 U.S.C. § 1313(c)(1).

[85] 33 U.S.C. § 1313(d)(1)(A). The waters identified pursuant to this section are referred to as "water quality limited waterbodies." EPA defines a water quality limited waterbody as "any segment where it is known that water quality does not meet applicable water quality standards, and/or is not expected to meet applicable water quality standards, even after the application of the technology-based effluent limitations required by sections 301(b) and 306 of the Clean Water Act." 40 C.F.R. § 130.2(j). In Oregon, technology-based effluent limitations are set by the state. *See infra*, § 4.3(2)(D).

For a discussion of the Oregon's water quality limited waterbodies listing process, see OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY, DEQ'S 1994/1996 303(D) LIST OF WATER QUALITY LIMITED WATERBODIES 5-9 (July 1996). *See also id*. at 10-27 (describing Oregon's listing criteria by parameter, including aquatic weeds or algae, bacteria, fecal coliform, biological criteria, chlorophyll a, dissolved oxygen, habitat modification, flow modification, nutrients, pH, sedimentation, temperature, total dissolved gas, toxics, and turbidity); *id*. at pt. 2, 1-58 (listing Oregon's water quality limited waterbodies).

[86] 33 U.S.C. § 1313(d)(1)(A). *See also* OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY, DEQ'S 1994/1996 303(D) LIST OF WATER QUALITY LIMITED WATERBODIES 4 (July 1996) (listing DEQ's 30 highest priority waterbodies for developing TMDLs).

[87] 33 U.S.C. § 1313(d)(1)(C). According to EPA, establishing the TMDL for each pollutant is a three-step process: (1) establish the total amount of the pollutant that can be present in the particular waterbody while still complying with water quality standards; (2) allocate the TMDL to all known sources (including nonpoint sources), reserve some for new sources, and account for scientific uncertainty; and (3) translate the allowable load to end-of-the-pipe permit limits. *Id*. § 1313(d)(1)(C); 40 C.F.R. § 130.7.

Oregon's DEQ stresses that "[a] full TMDL process determines the pollutants or stressors causing water quality impairments, identifies maximum permissible loading capacities for the waterbody in question, and then, for each relevant pollutant, assigns load allocations . . . to each of the different sources, point and nonpoint, in the watershed. OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY, DRAFT GUIDANCE: DEVELOPING WATER QUALITY MANAGEMENT PLANS THAT WILL FUNCTION AS NONPOINT SOURCE TMDLS 2 (July 1996). For a discussion of how TMDLs are established in Oregon for nonpoint sources, see *id*. at 2-21.

Section 303 also requires that proposed new discharges in Oregon adhere to EPA's antidegradation policy.[88]

(C) Clean Water Act Section 401 Certification

Section 401 of the CWA requires Oregon to issue a water quality certificate prior to the issuance of a federal license or permit that would result in a discharge into state waters.[89] The certificate issued by the DEQ must include "any effluent limitations and other limitations, and monitoring requirements necessary to assure" that the federal license or permit will comply with both the CWA and any appropriate state law.[90] The United States Supreme Court has broadly construed state powers under the section 401 certification process.[91] Both Federal Energy Regulatory Commission

[88] 33 U.S.C. § 1313(d)(4)(B). EPA's antidegradation policy includes the following three requirements: (1) all existing uses and the water quality standards necessary to preserve them must be maintained; (2) where the water quality level of a waterbody is greater than that needed to support the propagation of fish, shellfish, wildlife, and recreation, such level must be maintained unless the state finds after completing a public process that allowing water quality to decline is necessary to accommodate important economic or social development; and (3) where high quality waters represent an outstanding national resource (outstanding resource waters (ORWs)), they must be maintained at current high levels. 40 C.F.R. § 131.12.

For Oregon's administrative guidelines outlining the state's antidegradation policy and the designation of ORWs, see OR. ADMIN. R § 340-41-026(b) (1996).

[89] 33 U.S.C. § 1341(a).

[90] 33 U.S.C. § 1341(d). Any measures called for in the state certificate are then incorporated as an operating condition in the federal license or permit. *Id*. *See also* OR. ADMIN. R. § 340-48-025 (1987) (directing that DEQ certification shall contain "[s]uch conditions as the Director determines necessary to require compliance" with state water quality standards.

[91] P.U.D. No. 1 of Jefferson County v. Washington Dept. of Ecology, 114 S.Ct. 1900 (1994) (commonly referred to as the *Dosewallips* case). The Supreme Court noted that water quality standards under the CWA are comprised of two components-designated uses of individual waterbodies and water quality criteria-and that "pursuant to § 401(d) the [s]tate may require that a permit applicant comply with both the designated uses and the water quality criteria of the state standards." *Id*. at 1910. In addition, the court upheld Washington's minimum instream flow requirement noting that "water quantity is closely related to water quality; a sufficient lowering of the water quantity in a body of water could destroy all of its designated uses, be it for drinking water, recreation, navigation or, as here, as a fishery." *Id*. at 1913.

hydropower licenses and Army Corps of Engineer CWA Section 404 dredge and fill permits cannot be issued without DEQ certification that such activities will not violate state water quality standards.[92]

(D) Point and Nonpoint Source Programs

Oregon's water quality standards are implemented through both point and nonpoint source programs. First, DEQ regulates point source pollutant discharges through the National Pollutant Discharge Elimination System (NPDES) program established by the CWA.[93] Therefore, Oregon must establish effluent limitations in accordance with state water quality

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[92] *See* OR. REV. STAT. § 468B.040 (1995) (certification of hydroelectric power project); *id.* 468B.045 (certification of change to hydroelectric project). Prior to certification, DEQ must consider the comments of all affected state agencies relating to the adverse impacts to water quality. *Id.* § 468B.040(1). In addition, DEQ cannot approve or deny certification unless such decision is consistent with (1) EQC rules, (2) the CWA, (3) standards established pursuant to the CWA, and (4) the standards promulgated by other state and local agencies that are consistent with state standards and any other requirements of the federal CWA. *Id.* § 468B.040(2)(a)-(d). *See also* OR. ADMIN. R. § 340-48 (1987).

In January, 1997, the National Marine Fisheries Service (NMFS) petitioned EQC for a variance to the states total dissolved gas standard to allow higher spill levels over Columbia River dams. *See* Memorandum from Langdon Marsh, Director, *Oregon Department of Environmental Quality*, to the *Environmental Quality Commission* (Feb. 28, 1997) (on file with the Northwest Water Law and Policy Project) (petitioning for increased spills from March 13 to 23, 1997 to aid outmigrating Spring Creek Hatchery smolts and from April 10 to August 31, 1997 to aid outmigrating threatened and endangered Snake and Columbia River salmon smolts). *See also id.* at Appendix D (EQC's draft order granting NMFS the variance subject to certain state-imposed conditions).

See also OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY, OREGON'S 1994 WATER QUALITY STATUS ASSESSMENT REPORT: 305(B) REPORT 3-57 (April 1994) (explaining the role of DEQ and the Division of State Lands in the section 401 certification process). Oregon DEQ and the Division of State Lands operate under a Memorandum of Agreement to coordinate the state's response to the certification of Army Corps of Engineer Section 404 permits. *Id.*

Other activities governed by federal permits may also be included in the section 401 certification process. *See* Oregon Natural Desert Association v. Thomas, 940 F.Supp. 1534, 1541 (D. Or. 1996) (finding that water pollution caused by cattle grazing on national forest lands constituted a "discharge" as defined by the CWA and therefore "state certification under § 401 was required before the [Forest Service] issued a cattle grazing permit on the Camp Creek allotment").

[93] The CWA establishes and defines the National Pollution Discharge Elimination System (NPDES) program. *See* 33 U.S.C. § 1342. The NPDES applies to all discharges of pollutants from point sources into navigable waters. 33 U.S.C. § 1362(12). Anyone who wishes to discharge pollutants from a point source into navigable waters must comply with the NPDES, and obtain a permit. 33 U.S.C. § 1342(a)(1). The permit generally contains conditions specifying limitations on the amount of pollution that can be discharged. *Id.*

Every state has the option to present to EPA a program under which the state would establish and administer the NPDES according to state law or under an interstate compact. 33 U.S.C. § 1342(b). Oregon's point source program has been approved by EPA and DEQ administers the state point source permit program.

standards and incorporate these limitations as conditions into the individual NPDES permits issued by the DEQ.[94] Oregon has issued permits to approximately 3,250 industrial and agricultural point source wastewater dischargers.[95]

Second, DEQ is responsible for developing Oregon's nonpoint source program.[96]

Pursuant to this program, DEQ defines the standards and criteria necessary to support the various beneficial uses of state waters, assesses water quality to ensure that nonpoint source activities comply with state water quality

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[94] Section 301 of the CWA establishes technology-based requirements for industrial discharges, with the severity of such requirements varying depending on whether the polluter is an existing discharger, a new source, or a pretreater (a facility that discharges into a publicly owned treatment works (POTW)). 33 U.S.C. § 1311.

The EPA must impose more stringent non-technologically based limitations on NPDES permit recipients as necessary to achieve compliance with state water quality standards. *Id.* § 1311(b)(1)(C). Federal regulation requires the permit issuer (the state in Oregon) to determine whether permitted discharges have the reasonable potential to cause or contribute to state water quality violations. 40 C.F.R. § 122.44(d)(1). Furthermore, EPA regulations disallow permit issuance where conditions are insufficient to prevent water quality violations. *Id.*

Oregon has been given control over the point source discharge program because its effluent limitations and permit requirements are as stringent as those required by EPA. Oregon law mandates that no one is allowed to discharge any wastes into state waters without first obtaining a state permit that outlines the specific effluent limitations applicable to such discharge. OR. REV. STAT. § 468B.050 (1995).

For other EQC regulations pertaining to Oregon's administration of the NPDES program, see OR. ADMIN. R. § 340-45 (1993).

[95] OREGON'S DEPARTMENT OF ENVIRONMENTAL QUALITY, OREGON'S 1994 WATER QUALITY STATUS ASSESSMENT REPORT: 305(B) REPORT 1-4 (April 1994). For a more in depth discussion of Oregon's NPDES program and state controls over industrial and municipal wastewater, see *id.* at 5-1 to 5-26.

[96] Section 319 of the CWA governs the development and maintenance of state nonpoint source management programs. 33 U.S.C. § 1329. According to Section 319, Oregon must prepare and submit a report to EPA that (1) identifies waters that will not achieve water quality standards without some form of nonpoint source pollution control, (2) identifies problem nonpoint source pollutants by category and subcategory, (3) describes the process whereby best management practices and measures are developed to control nonpoint source pollution, and (4) identifies and describes state and local measures to control nonpoint source pollution. *Id.* § 1329(a)(1)(A)-(D).

Oregon must also submit a nonpoint source management program to EPA. *Id.* § 1329(b). This program must incorporate the following mechanisms: (1) an identification of the best management practices (BMPs) to be implemented; (2) a description of the specific programs necessary to carry out the BMPs; (3) a schedule documenting stages for the implementation of the BMPs; (4) certification by the state attorney general that Oregon's laws provide adequate authority for the program's implementation; and (5) sources of federal and other assistance to implement the program. *Id.* § 1329(b)(2)(A)-(E).

standards, and help coordinate watershed planning efforts.[97] In addition, DEQ emphasizes demonstration and watershed enhancement projects, provides technical and cost-share assistance to help land managers "select and implement best management practices," and investigates and remedies nonpoint source violations of state water quality standards.[98]

(3) The Division of State Lands

The Oregon Division of State Lands (DSL), subject to the rules and general policy direction established by the State Land Board (Board), is responsible for the administration of state-owned lands and the activities that occur thereon.[99] DSL oversees the conservation and development of wetlands throughout the state and implements Oregon's dredge and fill statute under which a state-issued permit is required prior to removing material from the bed or banks or filling of any waters of the state.[100]

(A) Wetlands

Oregon law directs DSL to administer certain programs that both identify and conserve state wetlands. First, the 1990 Oregon Legislature directed DSL to compile a state-wide wetlands inventory.[101] The DSL adopted rules formally adopting a system for "uniform wetlands identification, delineation, and comprehensive mapping;" the initial inventory of state wetlands was based on the National Wetlands Inventory compiled by the United States

[97] OREGON'S DEPARTMENT OF ENVIRONMENTAL QUALITY, OREGON'S 1994 WATER QUALITY STATUS ASSESSMENT REPORT: 305(B) REPORT 6-1 (April 1994).

[98] *Id*. at 6-2. The federal CWA grants states the power to designate non-state entities to carry out best management practices (BMPs) established pursuant to state plans. 33 U.S.C. § 1288(c)(1). A management agency agreement (MAA) has been entered into between Oregon and the U.S. Forest Service designating the Forest Service as the management agency in charge of water quality standard enforcement for national forest lands in Oregon. *See* Oregon Department of Environmental Quality and U.S. Dep't of Agriculture Forest Service, Nonpoint Source Pollution Responsibilities and Activities Memorandum of Agreement (Dec. 1990).

[99] *See* OR. REV. STAT. §§ 271.031 to 271.273.071 (1995).

[100] For a discussion of these duties, see *infra* § 4.3(3)(A)-(B). For other DSL duties regarding the control over and monitoring of certain activities that occur on state-owned submersible and submerged lands, see OR. REV. STAT. §§ 274.005 to 274.994 (1995).

[101] OR. REV. STAT. § 196.674 (1995). The legislature recognized the important role of wetlands in flood control, fish and wildlife habitat, pollution abatement, water quality, and recreation; and further noted that much of the state's original wetlands have been "diked, drained, filled, dredged, ditched or otherwise altered." *Id*. § 196.688.

Department of the Interior, Fish and Wildlife Service.[102] Currently, DSL is still collecting information necessary to complete the wetlands inventory.[103]

In addition to the wetlands inventory process, any city or county may develop and submit to DSL a wetland conservation plan that details the parameters of both a particular wetland area and the source of its water.[104] Each conservation plan must include a description and maps of the area covered by the plan, and "a detailed inventory of the wetlands, identifying the location, quality and quantity of the wetland resource and the source of the water for the wetlands within the area covered by the plan."[105] Essentially, a wetland conservation plan incorporates the policies and implementing measures necessary to protect, conserve, and plan the best uses of local wetlands. These plans help DSL and local government planners determine whether wetland areas are suitable for development or in need of restora-tion.[106] Only the city of Eugene had completed a wetlands conservation plan.[107]

(B) State Dredge and Fill Permits

Oregon law mandates that "no person or government body shall remove any material from the beds or banks or fill any waters of this state without a permit" issued by DSL.[108] The DSL Director must issue a permit for the

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[102] OR. REV. STAT. § 196.674 (1995). Much of the wetlands information obtained by the DSL has come from a series of state-wide aerial photographs and the voluntary contributions of various counties. Telephone Interview with Dana Field, Wetlands Planner, Division of State Lands (Sept. 29, 1995).

[103] Telephone Interview with Janet Morlan, Wetlands Program Leader, Division of State Lands (April 17, 1997). The state wetlands inventory aids both DSL and local government planners in creating land use ordinances and determining the affects of development projects. *Id*.

[104] OR. REV. STAT. § 196.678 (1995).

[105] For other conservation plan content requirements, see OR. REV. STAT. § 196.678(2)(a)-(j) (1995).

[106] OR. REV. STAT. § 196.678(f) (1995). For DSL duties regarding the development and approval of wetland conservation plans, and permits issued for the removal or fill of materials in wetlands covered by a plan, see *id*. §§ 196.681 to 196.687.

[107] Telephone Interview with Janet Morlan, Wetlands Program Leader, Division of State Lands (April 17, 1997).

[108] OR. REV. STAT. § 196.810 (1995). For certain activities not covered by Oregon's dredge and fill permit requirements see *id*. § 196.905 (exempting activities associated with: (1) the fill or removal of materials within the beds or banks of non-navigable streams for logging operations that comply with the Oregon Forest Practices Act; (2) activities relating to the construction, operation, and maintenance of dams permitted by the Water Resources Department for irrigation purposes; and (3) fills by the federal government pursuant to the federal navigable servitude).

(continued)

Oregon defines "fill" to mean "the total of deposits by artificial means equal to or

removal of material from the beds or banks of state waters where she determines that such activity is "not inconsistent with the protection, conservation and best use" of Oregon's water resources.[109] In addition, the Director must issue a permit to fill state waters if she determines that the proposed fill "would not unreasonably interfere" with Oregon's paramount policy to "preserve the use of its waters for navigation, fishing and public recreation."[110] The Director must take into account various public interest considerations prior to issuing a permit.[111] A final permit may include any conditions the Director deems necessary.[112]

The state's permit process mirrors the federal Clean Water Act (CWA) section 404 permit program administered by the United States Army Corps of Engineers (Corps).[113] The review process is similar for both agencies and when enforcement actions become necessary, DSL and the Corps coordinate to determine which agency takes charge.[114] Oregon is in the process of

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exceeding 50 cubic yards or more of material at one location in any waters of this state. *Id.* § 196.800(5). The term "removal" means "the taking of more than 50 cubic yards or the equivalent weight in tons of material in any waters of this state in any calendar year; or the movement by artificial means of an equivalent amount of material on or within the bed of such waters, including channel relocation." *Id.* § 196.800(12).

The 50 cubic yard minimum requirement for both fill and removal activities is disregarded when the disturbance occurs in an area determined to be "essential indigenous anadromous salmonid habitat." *Id.* § 196.810(1)(b). All activities in such an area must have a permit. *Id. See also id.* § 196.810(1)(e) (defining "essential indigenous anadromous salmonid habitat" and "indigenous anadromous salmonid").

In addition, all fill and removal projects in state designated "scenic waterways" must have a permit. *See id.* § 390.835(2) (stating that fill and removal projects in state scenic waterways are permitted by DSL only if it finds that the project is "consistent with the policies set forth under ORS 390.805 to 390.925 for scenic waterways, and approved by the State Land Board . . .").

[109] Or. Rev. Stat. § 196.825(1) (1995).

[110] OR. REV. STAT. § 196.825(2) (1995).

[111] The Director must consider the "public need for the proposed fill and the social, economic or other public benefits likely to result from the proposed fill." OR. REV. STAT. § 196.825(3) (1995). In addition, the Director must consider the following: (1) the economic cost to the public if the project is not 'completed; (2) project alternatives; (3) site alternatives; (4) sound policies of conservation and health and safety; (5) conformance with existing public uses and uses on adjacent lands; (6) compatibility with area land use regulations; and (7) whether the proposed project is for streambank protection. *Id.* § 196.825(3)(b)-(h).

[112] OR. REV. STAT. § 196.825(5) (1995).

[113] *See* 33 U.S.C. § 1344 (1994).

[114] Telephone interview with Dana Field, Wetlands Planner, Division of State Lands (Sept. 29, 1995).

"assuming" the federal CWA section 404 permit program.[115] If approved by EPA, DSL would then administer the federal dredge and fill permit program.

In addition to the state's dredge and fill permit program, DSL has established a wetlands mitigation bank program.[116] Pursuant to this program, DSL adopted criteria that govern the site selection, process, operation, and evaluation of mitigation banks.[117] The DSL has the authority to charge a fee to purchase credits in the mitigation bank, acquire or accept title to lands that could be used in a mitigation bank, or pay the costs needed to create, restore, or enhance wetlands areas.[118]

(4) Department of Fish and Wildlife

The Oregon Department of Fish and Wildlife (ODFW), subject to the policies established by the Fish and Wildlife Commission (Commission), is

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[115] Any state may assume administration of certain parts of the section 404 program. 31 U.S.C. §§ 1251(b), 1344(g), (h) (1994). The state's program remains subject to EPA approval and oversight, and EPA may withdraw approval after a public hearing if the state fails to properly administer its program. *Id*. § 1344(I).

In 1995, the Oregon legislature directed DSL to prepare a proposal and application to assume the federal section 404 permit program by January 1, 1996. 1995 Or. Laws ch. 474, § 1. The Oregon legislature is currently considering a bill directing DSL to continue pursuing methods to "streamline" the state's fill and removal permit program, including "applying to the United States Army Corps of Engineers for a state program general permit as authorized in federal regulations implementing section 404 of the Federal Water Pollution Control Act, . . ." S. 207, 69th Oregon Legislative Assembly., Regular Sess. § 1 (1997).

[116] "Mitigation bank" means a wetland site created, restored, or enhanced in order to "compensate for unavoidable adverse impacts due to activities" that otherwise comply with state rules governing development. OR. REV. STAT. § 196.600(2) (1995). DSL established a "system of resource values and credits" for each mitigation bank. *Id*. § 196.620. Under this system: (1) a credit from a mitigation bank can be withdrawn only after all on-site mitigation methods have been examined; (2) the credits must be used within 40 miles of the mitigation bank from which it was withdrawn; (3) credits from a freshwater mitigation bank must be used to mitigate permit actions occurring within the same tributary, reach, or subbasin; and (4) credits from an estuarine mitigation bank must be used within the same estuarine ecological system.

For other rules regarding the mitigation bank system of resource values and credits, see *id*. § 196.620(6)-(11).

[117] OR. REV. STAT. § 196.610 (1995). The criteria are primarily based on three statutory considerations: (1) historical wetland trends; (2) the contributions of the wetlands to wildlife, commercial and sport fisheries, surface and ground water quality, outdoor recreation, and scientific values; and (3) regional economic needs. *Id*. § 196.610(2)(a)-(c).

[118] OR. REV. STAT. § 196.610 (1995). The Director may also authorize payment for wetlands research or scientific monitoring, disburse funds received by the state pursuant to the federal Coastal Zone Management Act, and receive funds under the federal Emergency Wetlands Resources Act of 1986. *Id*.

responsible for managing state fish and wildlife resources.[119] The ODFW's primary duties relate to the taking of fish and wildlife: specifying time, area, and gear restrictions that govern the hunting, capturing, and killing of state fish and wildlife.[120] However, ODFW also acts in an advisory capacity regarding certain Water Resource Department management decisions. In addition, ODFW has a primary role under Oregon's Endangered Species Act, and in carrying out state policies governing the establishment and maintenance of fish screens, by-pass devices, and fishways.

(A) Water Resource Advisory Role

The ODFW must be consulted prior to certain administrative actions regarding the state's water appropriation process. First, ODFW must certify that an application to use reclaimed water will not have a significant negative impact on fish and wildlife prior to permit issuance.[121] Second, ODFW may waive the requirement that a supplying stream for a ground water recharge permit have a minimum perennial stream flow established if it determines that such flows are not required for the supplying stream.[122] Third, ODFW can require a water right permit-holder to install a "proper fish screen" whenever such person applies to WRD to change the point of diversion or appropriation, or to use the water on land to which the right is not appurtenant.[123]

Fourth, ODFW must inform WRD of any reservoirs exempt from the state's water storage permit process that it determines pose "a significant

[119] *See* OR. REV. STAT. § 496.080 (1995) (Department of Fish and Wildlife); *id*. § 496.118 (duties and powers of the Director); *id*. § 496.090 (Fish and Wildlife Commission). The Commission has seven members that are appointed by the Governor and confirmed by the Senate. *Id*. §§ 496.090(2), (3). In addition, no Commission member may "hold any office in any sports fishing organization or commercial fishing organization or have any ownership or other direct interest in a commercial fish processing business." *Id*. § 496.090(5).

[120] *See* OR. REV. STAT. ch. 498 (1995) (setting forth state hunting, angling and trapping regulations).

[121] OR. REV. STAT. 537.132(1)(b) (1995).

[122] OR. REV. STAT. § 537.135(5) (1995). Absent prior approval by ODFW, WRD cannot issue a groundwater recharge permit unless the supplying stream has a minimum streamflow established to protect aquatic and fish resources. *Id*.

[123] OR. REV. STAT. 537.211(4)(g) (1995). *See also id*. §§ 540.510 to 540.532 (state rules governing the installation of screening devices for change in diversion or use requests for certificated water rights). For a discussion of Oregon's statutory fish screen requirements, see *infra* § 4.3(4)(C).

detrimental impact to existing fishery resources."[124] Finally, ODFW is one of three state resource agencies that may request that WRD issue a water rights certificate for an instream water right.[125] The ODFW requests an instream right when it determines that such flows are necessary to preserve "public uses relating to the conservation, maintenance and enhancement" of fish and wildlife.[126]

(B) Oregon's Endangered Species Act

Oregon has a state endangered species act that was promulgated, and is carried out, independently of federal species protection legislation. Pursuant to Oregon's ESA, the Commission must conduct investigations necessary to determine whether any species of wildlife in Oregon is threatened or endangered.[127] The Commission can add or remove any species from the state list by rule.[128] Listing decisions must be "based on documented and verifiable scientific information about the species' biological status."[129] Once listed, the Commission promulgates rules that establish guidelines necessary

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[124] OR. REV. STAT. § 537.405(4)(a) (1995). *See also id.* § 537.407 (water rights certificates granted to reservoirs existing prior to 1993); *id.* § 437.409 (stating that WRD need not grant reservoir use rights via an alternative permit process where the project poses "a significant detrimental impact to existing fishery resources as determined on the basis of information submitted by the State Department of Fish and Wildlife).

[125] OR. REV. STAT. § 537.336 (1995). The Department of Environmental Quality and the Department of Parks and Recreation may also request an instream right be certified. *Id.* For a discussion of Oregon's instream water rights statute, see *supra* § 4.3(1)(C).

[126] OR. REV. STAT. § 537.336 (1995). The ODFW also has a consulting role in the DSL fill and removal permit program. *See id.* § 196.825 (noting that DSL may consult with other state agencies such as ODFW when attaching conditions to dredge and fill permits); *id.* § 196.810(A)-(B) (consultation between DSL and ODFW regarding what constitutes "essential indigenous anadromous salmonid habitat" or an "indigenous anadromous salmonid"). Further, the ODFW has an active role in the permitting programs operated by other state and federal agencies including but not limited to DEQ (point source permits), the Department of Forestry (timber harvest best management practices), and the Federal Energy Regulatory Agency (licensing and re-licensing of non-federal hydroelectric projects).

[127] OR. REV. STAT. § 496.172 (1995). Oregon defines "species" as "any group or population of wildlife that interbreeds and is substantially reproductively isolated." *Id.* The Commission is directed to establish a system whereby both the "scientific" and "incidental" taking of listed species is allowed. *Id.* In addition, any incidental take permit granted by the federal government is recognized by Oregon as a waiver of any state-established protective measures. *Id.*

[128] OR. REV. STAT. § 496.176 (1995). Anyone can petition the Commission to add or remove a species to the state list. *Id.*

[129] OR. REV. STAT. § 496.176(3) (1995). Oregon defines "verifiable" to mean "scientific information reviewed by a scientific peer review panel of outside experts who do not otherwise have a vested interest in the process." *Id.* § 496.171(4). For factors that affect the Commission's listing decisions, see *id.* § 496.176(3)(a)-(c).

to ensure species survival.[130] All state agencies must contact ODFW if a proposed action on lands owned or leased by the state has the potential to violate threatened or endangered species guidelines.[131] The ODFW also acts as the expert agency in the development of state endangered species management plans.[132]

(C) Fish Screens, By-Pass Devices, and Fishways

Anyone diverting thirty cfs or more must install, operate, and maintain at their own expense any screening or by-pass devices deemed necessary by ODFW to prevent fish from leaving the water source and entering the diversion.[133] The ODFW may require any person who diverts water at less than thirty cubic feet per second (cfs) to install, operate, and maintain screening or by-pass devices that provide adequate protection for fish.[134] In addition, every person who constructs, operates, or maintains a dam or artificial obstruction across a waterbody in Oregon must install a fishway deemed adequate by ODFW to "provide adequate upstream and downstream passage for fish at the dam or obstruction."[135]

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[130] OR. REV. STAT. § 496.182 (1995). These measures can include "take avoidance and protecting resource sites such as spawning beds, nest sites, nesting colonies or other sites critical to the survival of individual members of the species." *Id*.

[131] OR. REV. STAT. § 496.182(3) (1995). The ODFW then has 90 days to recommend reasonable and prudent alternatives to the proposed action. *Id*. If a state agency does not adopt ODFW's recommendations or alternatives, it (after consultation with ODFW) must show that potential public benefits outweigh the harm, and that reasonable mitigation and enhancement measures will be taken. *Id*. § 496.182(3)(a)-(b).

[132] OR. REV. STAT. § 496.182(8) (1995). When a listed species is found on state land, the agency with management authority over such lands must determine the role such lands will plan in the conservation of the species, and develop (in consultation with ODFW) an endangered species management plan. *Id*. The Commission then reviews the sufficiency of such plans. *Id*.

[133] OR. REV. STAT. § 498.311 (1995). *See also id*. § 498.321 (setting forth screening and by-pass standards); *id* § 498.326 (establishing ODFW guidelines for screening and by-pass projects).

[134] OR. REV. STAT. § 498.306 (1995). Because of a statutory-imposed cost-sharing program and limits on the number of diverters that can be required to install such devices per year, only a small fraction of these lesser diversions are actually required to have screening or by-pass devices installed. *See id*. §§ 496.306(1)-(4). The cost-sharing requirements went into effect in 1995. 1995 Or. Laws 426, § 1. In addition, legislation in 1991 directed that ODFW is responsible for major maintenance and repair of the screening or by-pass devises on these lesser diversions. 1991 Or. Laws 858, § 2(5) (*codified at* OR. REV. STAT. § 496.306(5)).

[135] OR. REV. STAT. § 498.351 (1995). In addition, any person wishing to remove any obstruction or build any foundation in state waters using an explosion or blasting device pursuant to lawful activity must apply for a permit from the Commission. *Id*. § 509.140. Permits issued by the Commission must (1) designate acceptable places and times for blasting and (2) prescribe any necessary safety precautions. *Id*.

4.4. Washington

(1) Department of Ecology: Water Division

The Department of Ecology (Department) is responsible for managing Washington's water resources.[1] The executive and administrative powers of the Department are vested in the Director.[2] The Department's primary responsibilities regarding the management of Washington's water resources include: (1) supervising the allocation and diversion of public waters within the state; (2) the issuance of water rights and establishing the rules governing the sale or transfer of such rights; (3) the establishment of minimum water flows and levels; and (4) a prominent role in the state's water rights adjudication process.[3]

(A) Supervisory Control Over the Allocation and Diversion of State Waters

The Department has the power to regulate and control the diversion of water in Washington.[4] The supervision of water distribution is accomplished by

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[1] The Washington Legislature created the Department to "establish a single state agency with the authority to manage and develop [Washington's] air and water resources in an orderly, efficient, and effective manner and to carry out a coordinated program of pollution control involving these and related land resources." WASH. REV. CODE § 43.21A.020 (1996). This section focuses only on the duties of the Department's Water Resources Division: duties relating to the management, allocation, and distribution of state waters. For a discussion of the Department's responsibilities regarding water quality and pollution control, see *infra* § 4.4(2).

[2] WASH. REV. CODE § 43.21A.050 (1996).

[3] For a discussion of these duties, see *infra* § 4.4(1)(A)-(C). For Department responsibilities regarding the regulation of the outflow of lakes, see WASH. REV. CODE § 90.24 (1996).

[4] WASH. REV. CODE § 43.21A.064 (1996). However, the Washington Supreme Court recently held that the Department does not have the authority to issue cease and desist orders against water rights holders unless such rights have been previously confirmed in a general water rights adjudication in state superior court. Rettkowski v. Department of Ecology, 858 P.2d 232, 240 (Wash. 1993) (known as the "Sinking Creek" decision). The Department retains the authority to analyze the validity of existing unadjudicated water rights in order to determine water availability while processing new water right permit applications. *Id.* at 237. *See also* Grant D. Parker & Tom McDonald, *Washington, in* 6 WATERS AND WATER RIGHTS 837 (Robert. E. Beck ed., 1994).

Director-appointed watermasters[5] or stream patrolmen,[6] who are responsible for monitoring water use within their designated enforcement area in conformance with state law. The State Water Code requires that any water diversion maintain "substantial controlling works" and a measuring device to allow "accurate measurement and practical regulation of the flow of water diverted."[7] In addition, the Department may require the owner or manager of a storage reservoir to construct and maintain any measuring device required to ascertain the flow into and out of the reservoir.[8]

(B) Issuance of Water Rights

The Washington Water Code declares that "[s]ubject to existing rights all waters within the state belong to the public," and that any rights in such water must be acquired "only by appropriation for a beneficial use and in the manner provided and not otherwise."[9] Under the water code, the right to use

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[5] *See* WASH REV. CODE §§ 90.03.60 to 90.03.090 (1996). A watermaster can be appointed by the Director "whenever [the Director] shall find the interests of the state or of the water users require them." *Id*. § 90.03.060. While under the supervision of the Director, each watermaster is responsible for: (1) dividing, regulating and controlling the water within his district according to the amount of water to which each user is legally entitled; (2) providing notice to users when their headgates or controlling works have been regulated; and (3) enforcing any other rules prescribed by the Department. *Id*. § 90.03.070. A watermaster has the power to arrest any person violating the provisions of the state water code. *Id*. § 90.03.090.

[6] *See* WASH. REV. CODE §§ 90.08.040 to 90.08.070 (1996). Stream patrolmen are appointed by the Director where the water rights of a stream have been adjudicated, and only when water users having adjudicated rights apply to the Director and make a showing of necessity. *Id*. § 90.08.040. Stream patrolmen have the same powers as a watermaster but their districts are confined to the waters of a designated stream or river stretch. *Id*.

[7] WASH. REV. CODE § 90.03.360(1) (1996). Beginning in 1987, the metering (measurement) of diversions has been required as a condition for all new surface right permits in Washington. *Id*. In addition, metering is required of all existing diversions from waters in which salmonid stocks are deemed depressed or critical by the Department of Fish and Wildlife, or where the volume of water being diverted is greater than one cubic foot per second (cfs). *Id*. § 90.03.360(2).

[8] WASH. REV. CODE § 90.03.360(1) (1996).

[9] WASH. REV. CODE § 90.03.010 (1996). *See also id*. § 90.44.040 (declaring all groundwater sources to be public waters); WASH. CONST. art. XXI, § 1 (1996)(declaring that the "use of the waters of this state for irrigation, mining and manufacturing purposes shall be deemed a public use"). The 1917 Water Code established an exclusive permit-based appropriation system whereby the right to use water could be obtained, but rights established prior to that date, whether appropriation or riparian, were preserved. *See* Grant D. Parker & Tom McDonald, *Washington, in* 6 WATERS AND WATER RIGHTS 832 (Robert. E. Beck ed., 1994). However, the Washington Supreme Court has declared that water rights (including riparian rights) existing in 1917 but not put to beneficial use by 1932 were relinquished. Department of Ecology v. Abbot (In re Deadman Creek Basin), 694 P.2d 1071, 1076 (Wash. 1985)

water is granted on the basis of priority; priority is given to the first user to apply for and obtain a permit to divert water and apply it to a beneficial use. Every appropriation in Washington must be for a "beneficial purpose;" this beneficial use requirement serves as the baseline requisite in determining both the purposes for which state water may be used and the amount of water that can be allocated.[10]

The right to use water in Washington must be acquired pursuant to the application, permit, and license procedures established by the water code.[11] The Washington statutory scheme creates separate but similar permit schemes governing both surface and ground water applications. Neither the water code nor the ground water statute explicitly recognize the hydrologic connectivity of the two sources, but legislation enacted subsequent to the

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(recognizing that the 1917 Water Code explicitly established prior appropriation as the dominant theme in Washington water law, and that fifteen years from that date sufficed as adequate notice to all water users regarding the necessity that they utilize the statutory permit scheme).

Because numerous riparian water rights existed prior to 1917 and were put to beneficial use prior to 1932, such rights remain in effect and are an important part of Washington's water rights system. For a brief discussion of riparian rights and the protections afforded them under Washington law, see Grant D. Parker & Tom McDonald, *Washington, in* 6 WATERS AND WATER RIGHTS 833-34 (Robert. E. Beck ed., 1994).

[10] *See* Department of Ecology v. Grimes, 852 P.2d 1044, 1049 (Wash. 1993). "Beneficial use" is defined by the water code as including but not limited to use for (1) domestic water, (2) irrigation, (3) fish, (4) shellfish, (5) game and other aquatic life, (6) municipal, (7) recreation, (8) industrial water, (9) generation of electric power, and (10) navigation. WASH. REV. CODE § 90.14.031(2) (1996). In addition, the Water Resources Act of 1971 broadened this list to include uses of water for domestic, stock watering, industrial, commercial, agricultural, irrigation, hydroelectric power production, mining, fish and wildlife maintenance and enhancement, recreational, and thermal power production purposes. *Id.* § 90.54.020(1). Furthermore, the Act declared that the "preservation of environmental and aesthetic values, and all other uses compatible with the enjoyment of the public waters of the state, are declared to be beneficial." *Id.*

Furthermore, the doctrine of waste plays a pertinent role in the appropriation process; no matter the beneficial use to which water may be put, such use cannot be wasteful or unreasonable. The Washington Supreme Court has held that a particular use of water "must not only be of benefit to the appropriator, but it must also be a reasonable and economical use of water in view of other present and future demands upon the water supply." Department of Ecology v. Grimes, 852 P.2d 1044, 1051 (Wash. 1993). The reasonableness of a particular water use (and whether such use is therefore wasteful) is determined in light of "customary irrigation practices common to the locality." Stafford v. White Bluff Land & Irrigation, 114 P. 883, 885 (Wash. 1911). However, such customs apply "only when founded on necessity, and will not justify water waste." *Id.* *See also* Department of Grimes, 852 P.2d at 1053.

[11] WASH. REV. CODE § 90.03.010 (1996) (directing that the right to appropriate water be obtained only "in the manner provided and not otherwise"). *See also id.* § 90.44.040 (declaring that the right to appropriate groundwater be obtained "under the terms of this chapter and not otherwise").

implementation of both statutory schemes directs the Department to allocate state water with "full recognition" of the "natural interrelationships of surface and ground waters."[12] The Department is responsible for the issuance of all permits to appropriate state water.[13]

Each person intending to appropriate water must submit an application to the Department.[14] Most importantly, the application must include: (1) the source of the water supply; (2) the nature and amount of the proposed use; (3) the time of year during which the water will be used; (4) the locations and description of the ditch, canal, or other works; (5) the time needed to complete construction and (6) the time required for the complete application of the water to the proposed use.[15] All applications must also include any maps, drawings, or other data required by the Department.[16]

Upon receipt of a valid application, the Department must publish notice for two consecutive weeks in a newspaper located in the county where the storage, diversion, and use of the water is to be made.[17] The Department investigates every application and determines if any water is available for

[12] WASH. REV. CODE § 90.54.020 (8) (1996). Washington's ground water code does have a provision explicitly disallowing the appropriation of ground water where surface water and surface water appropriations and uses will be impaired or affected. *Id*. § 90.44.030. *See also* Hubbard v. Department of Ecology, 936 P.2d 27 (Wash. Ct. App. 1997) (upholding decision by the Department to condition groundwater permit on basis of the agency's hydrologic continuity determination).

The remainder of this section will focus on the statutory scheme created to govern surface water appropriations, keeping in mind that the procedures created for ground water permits are very similar. *See* WASH. REV. CODE § 90.54.020 (1996) for the express provisions regarding the ground water appropriation process.

[13] WASH REV. CODE § 90.03.250 (1996).

[14] WASH. REV. CODE § 90.03.260 (1996).

[15] WASH. REV. CODE § 90.03.260 (1996). The application requirements may vary somewhat depending on whether the individual appropriator is applying to use the water for agricultural, power, reservoir, municipal, or mining purposes. *See id*.

[16] *Id*. For other surface and groundwater appropriation procedures, *see* WASH. ADMIN. CODE §§ 508-12-090 to 508-12-250 (1995). In addition, the Water Resources Act of 1971 directed the Department to develop a Water Resources Management Program. WASH. REV. CODE § 90.54.030(1) (1996). Pursuant to this program, the Department has identified a number of specific requirements for authorizing water use in certain individual basins (water resource inventory areas) in the state. *See* WASH. ADMIN. CODE chs. 173-500 to 173-563 (1995).

[17] WASH. REV. CODE § 90.03.280 (1996). Notice of the application and any additional pertinent information must also be sent to the Director of the Department of Fish and Wildlife. *Id*.

appropriation and to what beneficial uses the water can be applied.[18] If water is available for a legitimate beneficial use, the Department may issue a permit if it determines that the appropriation will not impair existing rights or be detrimental to the public welfare.[19] The Department must notify the Director of the Department of Fish and Wildlife if the permit is issued.[20] All Department permit decisions are appealable to the Pollution Control Hearings Board.[21]

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[18] WASH. REV. CODE § 90.03.290 (1996). *See also* Hubbard v. Department of Ecology, 932 P.2d 139, 145 (Wash. 1997) (noting that under § 90.03.290 the Department is required to investigate every application to withdraw groundwater and refuse to issue a permit "if no unappropriated water is available, if withdrawal will conflict with existing rights, or if withdrawal will detrimentally affect public interest"). The Department must make and file written findings of fact regarding all matters investigated. *Id*. A preliminary permit, for up to three years, may be granted by the Department where the applicant cannot provide sufficient information from which the Department can make adequate findings. *Id*.

[19] WASH. REV. CODE § 90.03.290 (1996). There are no criteria in the water code to aid the Department in making its determination of whether the approval of an application would be detrimental to the public welfare. However, the Water Resources Act of 1971 requires that "[p]erennial rivers and streams of the state shall be retained with base flows necessary to provide for preservation of wildlife, fish, scenic, aesthetic and other environmental values, and navigational values," and that permit applications that conflict therewith should be authorized only where it is clear that the public interest is served. *Id*. § 90.54.020(3)(a).

In one notable instance, the Department decided that continued withdrawals from a major interstate water source would be detrimental to the public interest. The Department withdrew by rule all unappropriated water from the Snake and Columbia Rivers. WASH. ADMIN. CODE § 173-563-015(2) (1995). This moratorium applied to all water right applications filed after December 20, 1991, for either the diversion from a surface source on the mainstem Columbia River, or a ground water source that is part of or tributary to the Columbia River. WASH. ADMIN. CODE § 173-563-015. However, recent state legislation preempts the Department's ability to withdraw from appropriation water from the mainstem Columbia River. *See* 1997 Wash. Laws ch. 439 (also requiring the Department to consult with legislative water resources committees prior to adopting any future withdrawals).

In addition, Washington's Pollution Control Hearing Board recently declared that the Department must recognize the public trust doctrine and the responsibilities that attach thereto when managing state water resources. *See* In the Matter of Appeals from Water Rights Decisions of the Department of Ecology, Order on Motions for Summary Judgment, PCHB Nos. 968 through 96181(nonsequential) (July 16, 1996) (ruling that "[t]o the extent that an appropriation would impair a navigable water of the state, the public trust doctrine would also require Ecology to construe the exception narrowly to protect the public's interest in those waters, which interest is held in trust by the state").

[20] WASH. REV. CODE § 90.03.290 (1996). *See also id*. § 75.20.050 (mandating that notice be given, and that Department of Fish and Game must be given thirty days to respond prior to the issuance of the permit).

[21] WASH. ADMIN. CODE § 371-08-255 (1995).

Once the Department grants a permit, the permittee has a reasonable time to commence construction on the proposed project.[22] The water right is perfected once the permittee completes the construction project and fulfills the permit requirements, and the Department has a duty to issue a water right certificate.[23] The priority date of the right acquired under the certificate relates back to the date the original application was filed with the Department.[24]

A certificated water right to use a specific quantity of water is appurtenant to the land to which the water is applied; this right is "perpetual and operates to the exclusion of subsequent claimants."[25] However, a water right can be lost because of (1) a failure to file claim with the Department,[26] (2) non-use,[27] or (3) abandonment.[28] A right-holder is allowed to change (either the use or place of use or the place of withdrawal or place of diversion) or transfer a

[22] WASH. REV. CODE § 90.03.320 (1996). In determining the amount of time allowed to complete construction, the Department must consider the cost and magnitude of the project, and the physical and engineering features to be encountered. *Id*. The Department may extend the granted time period as reasonably necessary depending on the good faith of the applicant and the determination that such extension is in the public interest. *Id*.

[23] WASH. REV. CODE § 90.03.330 (1996).

[24] WASH. REV. CODE § 90.03.340 (1996).

[25] Neubert v. Yakima-Tieton Irrig. Dist., 814 P.2d 199, 201 (Wash. 1991). *See also* WASH. REV. CODE § 90.03.380 (1991). *See also* Sheep Mountain Cattle Company v. Department of Ecology, 726 P.2d 55, 57 (Wash. App. 1986) (noting that "[p]roperty owners have vested interest in their water rights").

[26] The 1967 Washington Legislature mandated that all rights to divert or withdraw water that were not evidenced by a formal state permit or certificate be formally claimed pursuant to the Water Rights Claims Registration Act. 1967 Wash. Laws 233. *See also* Grant D. Parker & Tom McDonald, *Washington, in* 6 WATERS AND WATER RIGHTS 833-34 (Robert. E. Beck ed., 1994). All such claims must have been filed by September 1, 1985. WASH. REV. CODE § 90.14.044 (1996). A filed claim does not constitute an adjudication of the right; however, the claim is admissible in a general adjudication as prima facie evidence of the time and quantity of use as of the year of filing. *Id*. § 90.14.081. Any water user who did not file a claim pursuant to the Act is deemed to have conclusively waived and relinquished any prior right. *Id*. § 90.14.071.

[27] Washington's statutory forfeiture provisions direct that five consecutive years of non-use constitutes a forfeiture of the right to use water. *See* WASH. REV. CODE §§ 90.14.130 to 90.14.180 (1996). A right holder must be given the opportunity to show that "sufficient cause" existed for the non-use. For what constitutes "sufficient cause" for non-use in Washington, see *id*. § 90.14.140. The Department must notify the right-holder by order that such claim has reverted to the state. *Id*. § 90.14.130.

[28] To abandon a water right, the user must have the intent to abandon such right together with the actual non-use of the water. Sander v. Bull, 135 P. 489, 492 (Wash. 1913). No rights to the use of surface or ground water can be lost by prescription or adverse possession in Washington. WASH. REV. CODE § 90.14.220 (1996).

water right so long as there is no detrimental injury to existing users (including both senior and junior water right holders).[29]

(C) Establishment of Minimum Water Flows and Levels

The Department is the only state agency with the authority to establish minimum flows or levels or any other type of water flow restrictions for any river or lake.[30] Pursuant to the Minimum Water Flows and Levels Act of 1967,[31] the Department has the authority to establish minimum water flows and levels for rivers, streams, or lakes by administrative rule.[32] The Water Resources Act of 1971[33] provided the Department with more specific direction; the Act requires that "base flows" necessary to provide for fish, wildlife and other environmental values be maintained on all perennial rivers and streams of the state.[34]

In order to accomplish the objectives established by the two statutes listed above,[35] the Department has set base flows pursuant to comprehensive basin

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[29] WASH. REV. CODE § 90.03.380 (1996). *See also id.* § 90.44.100 (groundwater). If the change is allowed by the Department, it occurs without loss of priority. *Id.*

[30] WASH. REV. CODE § 90.03.247 (1996). Other state agencies like the Department of Fish and Game may participate in, and submit comments regarding, the minimum flow process. *Id.* In addition, the Department is directed to consult with other state agencies and affected Indian tribes throughout all stages of the minimum flow process. *Id.*

[31] WASH. REV. CODE §§ 90.22.010 to 90.22.060 (1996).

[32] WASH. REV. CODE § 90.22.010 (1996). The Department must act to promulgate such rules either upon request by the Department of Fish and Game or under its own initiative. *Id.* The Department can establish minimum flows or levels for the purposes of "protecting fish, game, birds or other wildlife resources, or recreational or aesthetic values of said public waters whenever it appears to be in the public interest to establish the same." *Id.* Prior to the adoption of any minimum flows, the Department must hold a public hearing located in the county where the stream, lake, or other public water source is located. *Id.* § 90.22.020.

[33] WASH. REV. CODE §§ 90.54.010 to 90.54.920 (1996).

[34] WASH. REV. CODE §§ 90.54.020(3) (1996). Withdrawals on waters where minimum flows are established that conflict with such base flows are authorized only "where it is clear that overriding considerations of the public interest will be served." *Id.* In addition, the Director may deny any permit to appropriate water if she believes the permit would result in "lowering the flow of water in a stream below the flow necessary to adequately support food fish and game fish populations in the stream." *Id.* § 75.20.050.

[35] Instream flows may also be designated pursuant to Washington's Trust Water Rights Program. *See* WASH. REV. CODE §§ 90.42.005 to 90.42.900 (1996). Pursuant to this program, the Department may negotiate for, and provide financial assistance to, individual water uses to assist in the development of water conservation projects. *Id.* § 90.42.030. In return for the Department's assistance, the state receives all or a portion of the conserved water for deposit into the trust water rights program; the water may then be held or authorized for use by the

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management programs and instream flows according to the state's Instream Resource Protection Program.[36] Comprehensive management programs have established base flows in the Chehalis, Walla Walla, Methow, Okanogan, Little Spokane, Colville, and Mainstem Snake River basins, and for the John Day-McNary Pool reach of the Columbia River.[37] The Instream Resource Protection Program has established instream flows in the following river basin water resource inventory areas: Nooksack, Snohomish, Cedar-Sammamish, Green-Duwamish, Puyallup, Nisqually, Deschutes, Kennedy Goldsborough, Kitsap, Wenatchee, and mainstem Columbia.[38]

(D) The Water Rights Adjudication Process

Pursuant to the Water Rights Claim Registration Act of 1967, all water rights not evidenced by a state permit or certificate must file a statement of claim with the Department. [39] The Act establishes an adjudication process whereby these pre-code water rights can be identified and formally recognized by the state. The Washington adjudication process has both administrative and judicial components; first, the Department must investigate the particular subbasin or source of water develop a statement of facts and a plan or map of the locality being adjudicated;[40] second, the Department then files the case with the applicable county superior court which then refers it back to the Department for further investigation;[41] third, the Department appoints an administrative referee who holds prehearing conferences, conducts evidentiary hearings, and then files a report with the superior court judge documenting the Department's findings and

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Department "for instream flows, irrigation, municipal, or other beneficial uses." *Id*. § 90.42.030, 90.42.040. In addition, the state may also obtain trust water rights by purchase, gift, or bequest on a temporary or permanent basis. *Id*. § 90.42.080. Under these statutes, the water is held as an actual instream water right, whereas the flows discussed above are merely minimum flows established by administrative rule.

[36] *See* WASH. ADMIN. CODE chs. 173-501 to 173-564 (1995). *See also* Kenneth O. Slattery & Robert F. Barwin, *Protecting Instream Resources in Washington State, in* INSTREAM FLOW PROTECTION IN THE WEST 20-4 (Lawrence J. MacDonnell and Teresa A. Rice eds., 1993).

[37] WASH. ADMIN. CODE chs. 173-522 to 173-564 (1995).

[38] WASH. ADMIN. CODE chs. 173-501 to 173-563 (1995).

[39] Originally, such claims were to be filed by June 30, 1974; but subsequent amendments to the Act moved the deadline to September 1, 1985. Recent 1997 legislation re-opened the filing period from September 1, 1997 to June 30, 1998. 1997 Wash. Laws ch. 440. The filing of such a claim is prima facie evidence of both the quantity and priority stated in the claim, while failure to file is a relinquishment of any rights to water. WASH. REV. CODE §§ 90.14.071, 90.14.081 (1996).

[40] WASH. REV. CODE § 90.03.110 (1996).

[41] WASH. REV. CODE §§ 90.03.160, 90.03.170 (1996).

recommendations.[42] Finally, Superior Court holds a hearing taking into account all objections to the Department's report, and issues a final decree establishing rights by priority date, quantity, point of diversion, and place of use.[43]

Currently, Washington is conducting a general stream adjudication for surface water rights in the Yakima River Basin. The area involved encompasses 31 subbasins covering ten percent of the state. Of the estimated 40,000 water users in the Basin, only 5,000 were served summonses based on the claims registered pursuant to 1967 Water Rights Claim Registration Act. As of 1997, the Washington court had heard the claims of the major and individual water rights claimants in all but five of the thirty-one subbasins; approximately eighty-five percent of the Yakima Basin adjudication is complete.[44]

(2) Department of Ecology: Water Division, Water Quality Program

The Department of Ecology (Department) is responsible for the development and implementation of Washington's water policy regarding surface and ground water quality.[45] Many Department actions involve fulfilling Washington's obligations under the federal Clean Water Act[46] (CWA).[47] The state's primary duties under the CWA include: (1) the development and maintenance of state water quality standards; (2) formally identifying waters that are water quality limited; (3) ensuring that proposed projects requiring a federal license or permit comply with state water quality standards; (4) the

[42] WASH. REV. CODE § 90.03.190 (1996).

[43] WASH. REV. CODE § 90.03.200 (1996).

[44] For a more in depth discussion of Washington's adjudication process and the Yakima Basin adjudication, see Dar Crammond, *Counting Raindrops: Prospects for Northwestern Water Right Adjudications*, C-1 to C-6 (1996) (on file with the Northwest Water Law and Policy Project).

[45] *See* WASH. REV. CODE § 90.48.030 (1996) (declaring that "[t]he Department shall have the jurisdiction to control and prevent the pollution of streams, lakes, rivers, ponds, inland waters, salt waters, water courses, and other surface and underground waters of the state of Washington").

[46] Federal Water Pollution Control Act, 33 U.S.C. 1251 to 1387 (1994).

[47] WASH. REV. CODE § 90.48.260 (1996) (declaring that "[t]he department of Ecology is hereby designated as the State Water Pollution Control Agency for all purposes of the federal clean water act").

implementation of a permit system governing point source discharges of water pollution; and (5) the development and maintenance of programs dealing with nonpoint source pollutants.[48]

(A) Water Quality Standards

Section 303 of the CWA requires that Washington develop water quality standards for all surface waters.[49] In setting state water quality standards, the Department designates uses for all state waters and establishes water quality criteria for each waterbody based on such uses.[50] The Department must hold public hearings in order to review existing water quality standards at least once every three years, and provide the final results of each review to the federal Environmental Protection Agency (EPA).[51]

Washington's water use classification system is based on four categories, under which state waters are designated as class AA, A, B, or C.[52] In terms

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[48] For a discussion of Department responsibilities under the CWA, see *infra* § 4.4(2)(A)-(D).

[49] 33 U.S.C. § 1313(c)(2) (requiring that standards be established "to protect the public health or welfare, enhance the quality of water and serve the purposes of this [Act]").

[50] In designating uses for state waters, the CWA directs that the Department consider the value of Washington's waters for "public water supplies, propagation of fish and wildlife, recreational purposes, and agricultural, industrial, and other purposes, and also taking into consideration their use and values for navigation." *Id*. § 302(c)(2)(A). EPA requires Washington to protect not only existing uses on a waterbody, but also any uses that are "attainable." *See* 40 C.F.R. § 131.10. (1996) (a particular use is "attainable" if it "can be achieved by the imposition of effluent limits required under section 301(b) and 306 of the [CWA] and cost-effective and reasonable best management practices for nonpoint source control). In designating the uses for which a waterbody's water quality standards will be established (fishing, swimming, etc..) the Department may not eliminate existing uses, and has a limited ability to later eliminate designated uses. *Id*. §§ 131.10(g)-(h).

The Department is also responsible for setting water quality criteria that serve to protect the designated uses of state waters. These criteria vary depending on the uses for which the particular water was designated, and are generally based on EPA established guidelines. *Id*. § 131.11.

[51] 33 U.S.C. § 1313(c)(1).

[52] *See* WASH. ADMIN. CODE § 173-201A-030 (1995). Washington also has a "Lake" class. The water quality of this class of waters must "meet or exceed the requirements for all or substantially all uses." *Id*. § 173-201A-030(5).

Washington also has enunciated ground water protection goals. *See* WASH. REV. CODE chs. 90.48, 90.54 (1996). Pursuant to such goals, the state has established ground water categories and water quality criteria for ground water sources. *See* generally WASH. ADMIN. CODE §§ 173-200-010 to 173-200-100 (1995). The criteria established to protect and monitor state ground water quality focus primarily on primary contaminants, secondary contaminants, radionuclides, and carcinogens. *Id*. § 173-200-040. *See also* WASHINGTON STATE DEPARTMENT OF ECOLOGY, 1996 WASHINGTON STATE WATER QUALITY ASSESSMENT: SECTION 305(B) REPORT 36-42 (Aug. 1996) (discussing Department programs dealing with

of existing water quality and the beneficial uses that state waters support, class AA waters are defined as "extraordinary," class A waters are "excellent," class B waters are "good," and class C waters are "fair."[53] The state has also set forth water quality criteria that apply to specific waters depending on the designated uses for which a water has been classified.[54]

(B) Water Quality Limited Waterbodies

Also pursuant to CWA Section 303, Washington must identify those waters that do not meet state water quality standards.[55] Once identified, Washington must prioritize the water quality limited waters, taking into account the severity of the pollution and the uses made of such waters.[56] In accordance with the priority ranking given to each water, Washington must establish the total maximum daily load (TMDL) for each pollutant suitable

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ground water quality).

[53] *See* WASH. ADMIN. CODE § 173-201A-030(1) (1995) (Class AA waters must "markedly and uniformly exceed the requirements for all or substantially all uses"); *id*. § 173-201A-030(2) (Class A waters must "meet or exceed the requirements for all or substantially all uses"); *id*. § 173-201A-030(3) (Class B waters must meet or exceed the requirements for most uses"); *id*. § 173-201A-030(4) (Class C waters must "meet or exceed the requirements of selected and essential uses").

For specific freshwater classifications, see *id*. § 173-210A-130. For specific marine water classifications, see *id*. § 173-201A-140. For general classifications for water sources not specifically classified by the Department, see *id*. § 173-201A-120. All surface waters within national parks, national forests, or wilderness areas are designated as class AA waters. *Id*. It is important to note that Washington includes "wetlands" in its definition of surface waters; therefore wetlands are "subject to the same level of analysis or certification as are lakes, rivers, and streams," and "activities will be analyzed for their impacts to the wetlands as a separate water body." WASHINGTON STATE DEPARTMENT OF ECOLOGY, 1996 WASHINGTON STATE WATER QUALITY ASSESSMENT: SECTION 305(B) REPORT 45 (Aug. 1996). For a brief discussion of Washington's wetlands protection programs, see *id*. at 46-47.

[54] WASH. ADMIN. CODE § 173-201A-030 (1995). *See, e.g.*, Washington has established water quality criteria for class AA waters that includes standards for (1) fecal coliform organisms, (2) dissolved oxygen, (3) dissolved gas, (4) water temperature, (5) pH, (6) turbidity, (7) toxic, radioactive or deleterious material concentrations; and (8) the presence of materials that impair aesthetic values by offending the senses of sights, smell, touch, or taste. *Id*. § 173-201A-030(1).

For other Department regulations governing water quality criteria specific to toxic and radioactive substances, see *id*. §§ 173-201A-040 - 050.

[55] 33 U.S.C. § 1313(d)(1)(A). The waters identified pursuant to this section are referred to as "water quality limited waterbodies." EPA defines a water quality limited waterbody as "any segment where it is know that water quality does not meet applicable water quality standards, and/or is not expected to meet applicable water quality standards, even after the application of the technology-based effluent limitations required by sections 301(b) and 306 of the Clean Water Act." 40 C.F.R. § 130.2(j). In Washington, technology-based effluent limitations are set by the state. *See infra* § 4.4(2)(D).

[56] 33 U.S.C. § 1313(d)(1)(A).

for calculation, at a level necessary to implement state established water quality standards.[57] Section 303 also requires that proposed new discharges in Washington adhere to EPA's antidegradation policy.[58]

(C) Clean Water Act Section 401 Certification

Section 401 of the CWA requires Washington to issue a water quality certificate prior to the issuance of a federal license or permit that would result in a discharge into state waters.[59] The certificate issued by the Department must include "any effluent limitations and other limitations, and monitoring requirements necessary to assure" that the federal license or permit will comply with both the CWA and any appropriate state law.[60] The United States Supreme Court has broadly construed state powers under the

[57] 33 U.S.C. § 1313(d)(1)(C). Establishing the TMDL for each pollutant is a three-step process: (1) establish the total amount of the pollutant that can be present in the particular waterbody while still complying with water quality standards; (2) allocate the TMDL to all known sources (including nonpoint sources), reserve some for new sources, and account for scientific uncertainty; and (3) translate the allowable load to end-of-the-pipe permit limits. *Id*. § 1313(d)(1)(C); 40 C.F.R. § 130.7.

For the complete list of Washington's water quality limited waterbodies, see WASHINGTON STATE DEPARTMENT OF ECOLOGY, 1996 WASHINGTON STATE WATER QUALITY ASSESSMENT: SECTION 305(B) REPORT Appendix A (Aug. 1996).

[58] 33 U.S.C. § 1313(d)(4)(B). EPA's antidegradation policy includes the following three requirements: (1) all existing uses and the water quality standards necessary to preserve them must be maintained; (2) where the water quality level of a waterbody is greater than that needed to support the propagation of fish, shellfish, wildlife, and recreation, such level must be maintained unless the state finds after completing a public process that allowing water quality to decline is necessary to accommodate important economic or social development; and (3) where high quality waters represent an outstanding national resource (outstanding resource waters (ORWs)), they must be maintained at current high levels. 40 C.F.R. § 131.12.

See also WASH. ADMIN. CODE § 173-201A-070 (1995). The Department will not allow reductions in water quality where waters are of a higher quality than the water quality criteria assigned thereto unless: (1) it is clear (after adequate public participation and intergovernmental coordination) that the public interest will be served; (2) all available, known, and reasonable methods of pollution control are provided to both point and nonpoint sources of pollution; and (3) where the department allows lower water quality standards in high quality waters the water must still able to support all existing beneficial uses. *Id*.

For Washington's laws regarding the identification and classification of ORWs, see WASH. ADMIN. CODE § 173-201A-080 (1995).

[59] 33 U.S.C. § 1341(a).

[60] 33 U.S.C. § 1341(d). Any measures called for in the state certificate are then incorporated as an operating condition in the federal license or permit. *Id*.

section 401 certification process.[61] Both Federal Energy Regulatory Commission hydropower licenses and Army Corps of Engineer CWA Section 404 dredge and fill permits cannot be issued without Department certification that such activities will not violate state water quality standards.[62] Washington does not have any 401 certification regulations; informal department guidelines and "professional judgment" are used to set certificate conditions.[63]

(D) Point and Nonpoint Source Programs

The Department manages various sources of water pollution on a watershed basis. The watershed approach is designed "to synchronize water quality monitoring, inspections, permitting, nonpoint activities, and funding," and "links science, permitting, and prevention activities to maintain water quality standards."[64] Washington's watershed approach to water quality management has three "cornerstones:" (1) the designation of water quality management areas (WQMAs); (2) the appointment of staff "leads" for each WQMA; and (3) a five-step process for systematically approving permits, assessing water quality conditions, focusing staff efforts, and developing a decision-making process for each particular WQMA.[65]

Within the watershed framework, Washington's water quality standards are implemented through both point and nonpoint source programs. First the Department regulates point source pollutant discharges through the National Pollutant Discharge Elimination System (NPDES) program

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[61] P.U.D. No. 1 of Jefferson County v. Washington Dept. of Ecology, 114 S.Ct. 1900 (1994). The Supreme Court noted that water quality standards under the CWA are comprised of two components- designated uses of individual waterbodies and water quality criteria- and that "pursuant to § 401(d) the [s]tate may require that a permit applicant comply with both the designated uses and the water quality criteria of the state standards." *Id*. at 1910. In addition, the court upheld the Department's minimum instream flow requirements noting that "water quantity is closely related to water quality; a sufficient lowering of the water quantity in a body of water could destroy all of its designated uses, be it for drinking water, recreation, navigation or, as here, as a fishery." *Id*. at 1913.

[62] WASHINGTON STATE DEPARTMENT OF ECOLOGY, 1996 WASHINGTON STATE WATER QUALITY ASSESSMENT: SECTION 305(B) REPORT 46 (Aug. 1996).

[63] *Id*.

[64] WASHINGTON STATE DEPARTMENT OF ECOLOGY, 1996 WASHINGTON STATE WATER QUALITY ASSESSMENT: SECTION 305(B) REPORT 2 (Aug. 1996).

[65] Ron McBride, *An Overview of Washington State's Watershed Approach to Water Quality Management*, *in* WATERSHED '96 343 (Washington Department of Ecology 1996). For further discussion regarding the five-step process underlying Washington's watershed approach to water quality management, see WASHINGTON STATE DEPARTMENT OF ECOLOGY, 1996 WASHINGTON STATE WATER QUALITY ASSESSMENT: SECTION 305(B) REPORT 6 (Aug. 1996).

established by the CWA.[66] Therefore, Washington must establish effluent limitations for point source wastewater dischargers in accordance with state water quality standards and incorporate these limitations as conditions into the individual NPDES permits issued by the Department.[67] The Department issues both individual (single permits to cover specific facilities or activities) and general (covering a category of similar dischargers) wastewater discharge permits.[68] The Department has issued approximately 3,900 waste-

[66] The CWA establishes and defines the National Pollution Discharge Elimination System (NPDES) program. *See* 33 U.S.C. § 1342. The NPDES applies to all discharges of pollutants from point sources into navigable waters. 33 U.S.C. § 1362(12). Any who wishes to discharge pollutants from a point source into navigable waters must comply with the NPDES, and obtain a permit. 33 U.S.C. § 1342(a)(1). The permit generally contains conditions specifying limitations on the amount of pollution that can be discharged. *Id*.

Every state has the option to present to EPA a program under which the state would establish and administer the NPDES according to state law or under an interstate compact. 33 U.S.C. § 1342(b). Washington applied for and received authorization from EPA to administer the NPDES program in 1973. WASHINGTON STATE DEPARTMENT OF ECOLOGY, 1996 WASHINGTON STATE WATER QUALITY ASSESSMENT: 305(B) REPORT 19 (Aug. 1996). *See also* WASH. REV. CODE § 90.48.260(1) (1996) (identifying the Department as the sole agency issuing permits required by the NPDES).

[67] Section 301 of the CWA establishes technology-based requirements for industrial discharges, with the severity of such requirements varying depending on whether the polluter is an existing discharger, a new source, or a pretreater (a facility that discharges into a publicly owned treatment works (POTW)). 33 U.S.C. § 1311.

The EPA must impose more stringent non-technological based limitations on NPDES permit recipients as necessary to achieve compliance with state water quality standards. *Id*. § 1311(b)(1)(C). Federal regulations require the permit issuer (the state of Washington) to determine whether permitted discharges have the reasonable potential to cause or contribute to state water quality violations. 40 C.F.R. § 122.44(d)(1). Furthermore, EPA regulations disallow permit issuance where conditions are insufficient to prevent water quality violations. *Id*.

Washington has been given control over the point source discharge program because its effluent limitations and permit requirements are as stringent as those required by EPA. Department regulations state that "[n]o pollutants shall be discharged to any surface water of the state from a point source, except as authorized" by an individual or general permit. WASH. ADMIN. CODE § 173-220-020 (1995). Every Department point source permit must include: (1) all known, available, and reasonable methods of treatment including effluent limitations; (2) any more stringent limitations necessary to meet state water quality standards, federal laws, or to implement total maximum daily loads; and (3) any other conditions deemed necessary by the Department to carry out the provisions of the federal CWA. *Id*. § 173-220-130(1)(a)-(d).

For other Department regulations pertaining to Washington's administration of the NPDES program, see WASH. ADMIN. CODE §§ 173-220-010 to 173-220-240 (1995).

[68] WASHINGTON STATE DEPARTMENT OF ECOLOGY, 1996 WASHINGTON STATE WATER QUALITY ASSESSMENT: 305(B) REPORT 19 (Aug. 1996). A general permit category is made up of dischargers that (1) have similar operations and discharges, (2) are regulated with similar legal requirements, and (3) can apply similar technology to control pollution. Id. at 21. Washington has issued 3,067 general permits covering six types of facilities: fruit packers, sand and gravel, industrial stormwater, dairy, upland fin fish rearing hatcheries, and boatyards. *Id*.

water discharge permits to cover individual facilities and general operations throughout Washington.[69]

Second, the Department is responsible for developing Washington's nonpoint source program.[70] The state's nonpoint source program was approved by EPA in 1990.[71] The Department utilizes education, technical and financial assistance, and enforcement practices to limit the adverse affects to state water quality caused by nonpoint sources of pollution.[72] Under the Department's leadership, water quality management plans (WQMPs) have been developed for forest practices, dairy waste, irrigated agriculture, dryland agriculture, and urban stormwater.[73] The WQMPs rely primarily on voluntary programs that provide information, education, technical support, and incentives to promote proper land management techniques.[74]

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[69] *Id*.

[70] Section 319 of the CWA governs the development and maintenance of state nonpoint source management programs. 33 U.S.C. § 1329. According to Section 319, Washington must prepare and submit a report to EPA that (1) identifies waters that will not achieve water quality standards without some form of nonpoint source pollution control, (2) identifies problem nonpoint source pollutants by category and subcategory, (3) describes the process whereby best management practices and measures are developed to control nonpoint source pollution, and (4) identifies and describes state and local measures to control nonpoint source pollution. Id. § 1329(a)(1)(A)-(D).

Washington must also submit a nonpoint source management program to EPA. *Id*. § 1329(b). This program must incorporate the following mechanisms: (1) an identification of the best management practices (BMPs) to be implemented; (2) a description of the specific programs necessary to carry out the BMPs; (3) a schedule documenting stages for the implementation of the BMPs; (4) certification by the state attorney general that Washington's laws provide adequate authority for the program's implementation; and (5) sources of federal and other assistance to implement the program. *Id*. § 1329(b)(2)(A)-(E).

[71] WASHINGTON STATE DEPARTMENT OF ECOLOGY, 1996 WASHINGTON STATE WATER QUALITY ASSESSMENT: 305(B) REPORT 28 (Aug. 1996).

[72] *Id*. at 29.

[73] *Id*. The WQMPs are developed pursuant to section 208 of the federal CWA. *See* 33 U.S.C. § 1288 (1994). The federal CWA grants states the power to designate non-state entities to carry out best management practices (BMPs) established pursuant to state plans. 33 U.S.C. § 1288(c)(1). A management agency agreement (MAA) has been entered into between Washington and the U.S. Forest Service designating the Forest Service as the management agency in charge of water quality standard enforcement for national forest lands in Washington. *See* Washington State Department of Ecology and U.S. Dep't of Agriculture Forest Service, Nonpoint Source Pollution Responsibilities and Activities Memorandum of Agreement (Dec. 1990).

[74] *Id*. However, the WQMPs dealing with forest practices, dairy waste, irrigated agriculture, and dryland agriculture incorporate regulatory and enforcement components. *Id*.

(3) Department of Natural Resources

The Department of Natural Resources (DNR), subject to the regulations and policies formulated by the Board of Natural Resources (Board), is responsible for the management of Washington's public lands.[75] The DNR is primarily concerned with transactions involving, and the uses of, state owned lands. The agency administers programs dealing with the sale and lease of public lands and the materials located thereon, oil and gas leases on state lands, and easements over public lands.[76] However, DNR does have important obligations that directly affect state water resources including: (1) the establishment of forestry best management practices necessary to limit the adverse affects of nonpoint source pollution and preserve state water quality,[77] (2) the administration of a mining reclamation permit system,[78] and (3) the regulation of state tidelands, shorelands, and beds of navigable waters.[79]

(4) Department of Fish and Wildlife

The Department of Fish and Wildlife (DFW), subject to the rules established by the Fish and Wildlife Commission (Commission), is responsible for managing Washington's fish and wildlife resources.[80] The DFW's primary duties relate to the taking of fish and wildlife; specifying time, area, and gear

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[75] WASH. REV. CODE ch. 43.30 (1996). The Board consists of six members: the governor or governor's designee, the superintendent of public instruction, the commissioner of public lands, the dean of the college of forest resources of the University of Washington, the dean of the college of agriculture of Washington State University, and a representative of those counties that contain state forest lands acquired under WASH. REV. CODE ch. 76.12. *Id.* § 43.30.040.

Washington defines "public lands" to mean "lands belonging to or held in trust by the state, which are not devoted to or reserved for a particular use by law, and include state lands, tidelands, shorelands, and harbor areas. . . . and the beds of navigable waters belonging to the state." *Id.* § 79.01.004.

[76] WASH. REV. CODE chs. 79.01 to 79.68 (1996).

[77] WASH. REV. CODE § 76.09.040 (1996). In coordination with the Department of Ecology, the Board promulgates forest practices regulations pertaining to water quality protection. *Id.* The regulations are then enforced by DNR. *Id.*

[78] *See* WASH. REV. CODE ch. 78.44 (1996) (after July 1, 1993, "no miner or permit holder may engage in surface mining without having first obtained a reclamation permit" from DNR).

[79] *See* WASH. REV. CODE chs. 79.94 to 79.95 (1996) (powers and duties of the DNR over state tidelands, shorelands, and the beds of navigable waters). *See also id.* §§ 88.32.010 to 88.32.260 (river and harbor improvements).

[80] WASH. REV. CODE § 75.08.012 (1996). For Commission powers and duties, see *id.* § 75.08.080.

restrictions that govern the hunting, capturing, and killing of state fish and wildlife.[81] However, DFW has an important advisory role regarding certain Department of Ecology water resource management activities, and has regulatory authority over stream diversions and hydraulic projects.

(A) Water Resource Advisory Role

State policy declares that "a flow of water sufficient to support game fish and food fish populations be maintained at all times in the streams of this state."[82] In furtherance of this objective, the DFW must review each application to divert water submitted to the Department of Ecology (Ecology) prior to approval.[83] In addition, DFW also conducts field investigations for Ecology, may request that Ecology set minimum stream flow levels on a particular waterway,[84] and provides Ecology with technical and policy advice regarding the establishment of base flows under the state's Water Resources Act.[85]

The DFW also reviews state forest practice regulations prior to implementation,[86] has oversight duties regarding permits issued pursuant to Washington's Shoreline Management Act,[87] and has obligations pursuant to

[81] WASH. REV. CODE chs. 75.10 to 75.30 (1996). Washington recently released a draft environmental impact statement (EIS) documenting the state's proposed wild salmonid policy. If formally adopted and implemented, Washington's wild salmonid policy could significantly alter the state's approach to Columbia River Basin fisheries management. Keys to Washington's wild salmonid policy include: (1) recognizing that the fishery resource is the state's client; (2) stopping deliberate overfishing; (3) marking all hatchery-bound anadromous salmonids released in state waters; (4) curbing high peak flood flows; (5) establishing higher spawning escapement objectives; (6) correcting fishery selectivity; and (7) markedly improving the delivery of wild salmonids to spawning grounds. WASHINGTON DEPARTMENT OF FISH AND WILDLIFE, RECOMMENDED ALTERNATIVE JUSTIFICATION STATEMENT 7 (April 1997).

[82] WASH. REV. CODE § 75.20.050 (1996).

[83] WASH. REV. CODE § 75.20.050 (1996). The DFW is given thirty days to comment and object; the Department of Ecology can deny the permit if it finds that the proposed use would lower the flow of the water source below the level deemed necessary to support fish populations. *Id*.

[84] WASH. REV. CODE § 90.22.010 (1996). The DFW's request must include a statement explaining the necessity of minimum flow levels. *Id*.

[85] *See* WASH. REV. CODE § 90.54.060 (1996) (DOE must seek to involve other state agencies in the development of state water resources programs).

[86] *See* WASH. REV. CODE § 76.09.040(2) (1996) (proposed regulations must be submitted to the DFW and it must be given 30 days to submit comments).

[87] WASH. REV. CODE § 90.58.147 (1996).

the state's Environmental Policy Act.[88] The DFW participates in an advisory capacity in the Federal Energy Regulatory Commission (FERC) hydroelectric project licensing process. The Department conducts investigations of project sites, enlightens FERC as to the impact of a project on state fishery and wildlife resources, and develops proposals that attempt to mitigate, or suggest compensation for, potential adverse project impacts.[89]

(B) Construction Projects in State Waters

Any person or government agency proposing to construct any hydraulic project or perform any other work that will use, divert, or alter the natural flow or bed of any state fresh or salt waters must apply for and receive written approval from the DFW to "ensure the proper protection of fish life."[90] In addition, any diversion device installed for any purpose into state waters must be equipped with a "fish guard" to prevent the passage of fish into the diversion.[91] The DFW must also review and ensure the adequacy of fishways installed on dams and other stream obstructions, and has the authority to modify inadequate fishways and fish guards.[92]

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[88] See WASH. REV. CODE § 43.21C.030 (1996) (prior to issuing a decision regarding the impact of a proposed project, the acting state department must "consult with and obtain the comments of any public agency which has jurisdiction by law or special expertise with respect to any environmental impact involved).

[89] FERC must include conditions in its licenses that "adequately and equitably protect, mitigate damages to, and enhance" fish, wildlife, and habitat affected by licensed projects. 16 U.S.C. § 803(j)(1) (1994). The conditions imposed by FERC are based in part on recommendations made by state fish and wildlife agencies. *Id*. *See also* § 2.3(2)(B) for a discussion of the role state fish and wildlife agencies play in the FERC licensing process.

[90] WASH. REV. CODE §§ 75.20.100, 75.20.103 (1996). If permission is denied by DFW, the agency must provide in writing to the applicant "why and how the proposed project would adversely affect fish life." *Id*.

Washington defines "bed" to mean "the land below the ordinary high water lines of state waters;" this definition does not include "irrigation ditches, canals, storm water run-off devices, or other artificial watercourses except where they exist in a natural watercourse that has been altered by man." *Id*.

[91] WASH. REV. CODE § 75.20.040 (1996). *See also id*. § 77.16.220 (diversion of water, screen or bypass required).

[91]

[92] WASH. REV. CODE § 75.20.060 (1996). *See also id*. § 77.16.210 (fishways to be provided and maintained).

TREATIES and FEDERAL RECOGNITION OF TRIBES

Treaties, Executive orders and other instruments with Columbia River Basin Indian Tribes
- established reservations
- reserved water
- recognized tribes as sovereigns

1964 US/Canada Columbia River Treaty
- coordinates U.S./Canada mainstem dam operations
- implemented by COE, BPA, BC Hydro

1985 US/Canada Pacific Salmon Treaty
- allocates harvest of five pacific salmon species
- established bilateral management forum

FEDERAL LAW

Army Corps of Engineers
- operates nineteen major federal dams
- conducts other river management activities, (dredging, regulation of structures)
- issues dredge and fill permits

Bureau of Reclamation
- operates nine major dams and reservoirs for irrigation
- operates numerous projects for secondary purposes
- enters into contracts for the delivery of project water

Federal Energy Regulatory Commission
- carries out the provisions of the Federal Power Act
- regulates the construction and operation of non-federal hydroelectric projects
- issues licenses for non-federal hydroelectric projects

Bonneville Power Administration
- markets and distributes power
- funds the enhancement of fish and wildlife resources, affected by FCRPS

Forest Service
- authorizes and monitors national forest land activities
- monitors and asserts federal reserved rights
- develops planning documents to address fish and wildlife concerns

Bureau of Land Management
- authorizes and monitors federal "public lands" activities
- monitors and asserts federal reserved rights
- develops planning documents to address fish and wildlife concerns

National Marine Fisheries Service
- administers the ESA
- develops ocean fishery management plans
- administers the Columbia River Fisheries Development Program

Fish and Wildlife Service
- administers the ESA
- manages national wildlife refuges

Environmental Protection Agency
- oversees implementation of The Clean Water Act
- administers national pollution discharge elimination system

Figure 1

REGIONAL LAW

Northwest Power Planning Council
- interstate compact agency
- develop power production plans
- develop fish and wildlife programs

STATE LAW

Idaho, Montana, Oregon, Washington
- allocate and distribute water
- implement various CWA provisions
- regulate forest, agricultural, and mining activities on state and private lands
- administer fishing and hunting activities within the state

THE LAW OF THE COLUMBIA RIVER

THE LAW OF THE COLUMBIA RIVER

TREATIES AND FEDERAL RECOGNITION OF TRIBES	
1855 Treaties, Executive Orders and other instruments with Columbia Basin Tribes	• establish reservations throughout the Columbia River Basin • reserved water to fulfill purposes of reservations, including support of fisheries; some treaties and executive orders guaranteed certain rights both on and off reservation including the right to fish at usual and accustomed places; subsequent litigation of Stevens Treaty assured tribes half of salmon harvest • recognized tribes as sovereigns: tribes have management authority over all natural resources located within reservation boundaries • several tribes are party to the Columbia River Fish Management Plan that supervises in-river harvest of salmon in the Columbia River system
1964 U.S./Canada Columbia River Treaty	• coordinates U.S./Canada mainstem dam operations for flood control and hydropower purposes by managing water storage and releases • implemented by COE, BPA, BC Hydro
1985 U.S./Canada Pacific Salmon Treaty	• allocates harvest of five pacific salmon species between the United States and Canada; goal of the treaty is to ensure each country benefits commensurate to the amount of fish spawned and reared in their rivers and streams • established bilateral management forum; created the Pacific Salmon Commission to make harvest allocation decisions

Figure 2

FEDERAL LAW	
Army Corps of Engineers	• operates nineteen major federal dams in the Columbia River Basin for flood control, hydropower, navigation, and other authorized purposes • conducts other river management activities (dredging, regulation of structures) • issues dredge and fill permits under the Clean Water Act in rivers and wetlands • required to act consistently with the Northwest Power Act and takes the Council's fish and wildlife program "into account at each relevant stage of decisionmaking processes to the fullest extent practicable"
Bureau of Reclamation	• operates nine major dams and reservoirs in the Columbia River Basin primarily for irrigation purposes • operates numerous projects for secondary purposes including hydropower, municipal and industrial use, and recreation • enters into contracts with irrigation districts and other users for the delivery of project water • required to act consistently with the Northwest Power Act and takes the Council's fish and wildlife program "into account at each relevant stage of decisionmaking processes to the fullest extent practicable"
Federal Energy Regulatory Commission	• created to carry out the provisions of the Federal Power Act • regulates the construction and operation of non-federal hydroelectric projects in the basin • issues and conditions original and new licenses for non-federal hydroelectric projects • required to act consistently with the Northwest Power Act and takes the Council's fish and wildlife program "into account at each relevant stage of decisionmaking processes to the fullest extent practicable"
Bonneville Power Administration	• markets and distributes excess power produced from federal hydroelectric projects on the Columbia River and its tributaries • required to act consistently with the Northwest Power Act and takes the Council's fish and wildlife program "into account at each relevant stage of decisionmaking processes to the fullest extent practicable" • funds the protection, mitigation, and enhancement of fish and wildlife resources affected by the Federal Columbia River Power System (FCRPS)

FEDERAL LAW	
Forest Service	• authorizes and monitors timber harvest, grazing, mining, recreation, and other activities that occur on all national forest lands and some wilderness areas and wild and scenic river corridors in the Columbia River Basin • has limited water management authority, but does monitor and assert federal reserved rights and other water rights obtained pursuant to state law, and regulates access to national forest lands for water project purposes • has recently developed and implemented the Northwest Forest Plan, PACFISH, and INFISH; planning documents specific to the basin that address fish and wildlife concerns
Bureau of Land Management	• authorizes and monitors timber harvest, grazing, mining, recreation, and other activities that occur on all federal "public lands" and certain wilderness areas and wild and scenic river corridors in the Columbia River Basin • has limited water management authority, but does monitor and assert federal reserved rights and other water rights obtained pursuant to state law, and regulates access to BLM-managed lands for water project purposes • has recently developed and implemented the Northwest Forest Plan and PACFISH; planning documents specific to the basin that address fish and wildlife concerns
National Marine Fisheries Service	• administers the ESA for anadromous fish; ESA responsibilities include listing species as threatened or endangered, designating critical habitat, developing recovery plans, consulting with federal agencies, and regulating the take of federally listed species • develops fishery management plans that set ocean harvest regimes • administers the Columbia River Fisheries Development Program • is a party to the Columbia River Fish Management Plan (CRFMP); members of the CRFMP supervise the in-river harvest of salmon in the Columbia River system
Fish and Wildlife Service	• administers the ESA for non-anadromous fish and other species: lists species as endangered or threatened, designates critical habitat, develops recovery plans, consults with federal agencies, and regulates the take of federally listed species • manages federal lands designated as national wildlife refuges
Environmental Protection Agency	• oversees implementation of Clean Water Act: wetlands regulation and state water quality programs (point and non point source programs) • administers national pollution discharge elimination system (NPDES) in states where delegation has not taken place (Idaho)

REGIONAL LAW	
Northwest Power Planning Council	• interstate compact agency created by 1980 Northwest Power Act • develops regional plans for power production and fish and wildlife protection • COE, BOR, FERC, and BPA must take the Council's fish and wildlife program "into account at each relevant stage of decisionmaking processes to the fullest extent practicable"

STATE LAW	
Idaho **Montana** **Oregon** **Washington**	• allocate and distribute water within state boundaries; issue water rights and establish state rules governing the use, sale, and transfer of water rights • implement various provisions of the federal Clean Water Act including the establishment of state water quality standards, identifying water quality limited waterbodies, and administering point (except Idaho) and non-point source water quality programs • regulate forest, agricultural, and mining activities and practices on state and private lands • administer the rules and licensing procedures applicable to fishing and hunting activities within state boundaries and prescribe management practices for state-owned fish hatcheries

5. Analysis and Evaluation[1]

(1) Introduction

This portion of the study evaluates and critiques the existing institutions and governing structures in the Columbia River Basin (Basin). First, subsections (2) and (3) set forth and explain the four criteria used in making the evaluation. Subsection (4) provides an introductory summary of the institutional "organizational chart." Subsections (5) through (8) then apply the criteria to the institutions that "run" the Columbia River. Subsection (9) draws conclusions from the evaluation of Columbia River management institutions.

(2) Evaluation Criteria

In order for a unified natural resource like the Columbia River to be effectively managed over the long term, there must be appropriate institutional mechanisms to accomplish each of the following:

- The limits or "carrying capacity" of the natural river system must be defined and respected, and the condition of the resource should be continuously monitored, using adaptive management to incorporate the results of the monitoring.

- River functions and uses (within the parameters of its carrying capacity) must be identified and agreed upon. This requires mechanisms for expressing preferences, choosing priorities, and resolving conflicts. Prioritized functions must incorporate ecological considerations such as aquatic ecosystem support, floodwater storage, and water purification, as well as economic considerations such as hydroelectric power production, irrigation, and navigation.

- All stakeholders should participate in prioritizing river functions for reasons of equity and improved decisionmaking.

- All of the above should be accomplished in the most efficient and cost-effective manner possible.

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[1] The Northwest Water Law & Policy Project wishes to thank F. Lorraine Bodi, Co-Director, American Rivers, Northwest Regional Office, and Rick Applegate, former West Coast Conservation Director, Trout Unlimited for their insights and commentary. Several of their comments have been incorporated into this report.

(3) Explanation of Criteria

(A) Natural Limits and Carrying Capacity

The criteria listed above represent the bare minimum of a working system for management of a complex natural resource like a large river and its surrounding basin. The criteria begin with the most fundamental element: first, "natural law" must be understood and respected in order not to destroy the river. This criterion captures the notion of sustainability, or *the use of the resources in a way that meets the needs of the present without compromising the ability of future generations to meet their own needs*. Although the term sustainability is sometimes viewed with suspicion as a code word currently in vogue for the "environmental" perspective on natural resource management issues, the concept does not represent a political position at all, but rather an appreciation of enduring scientific reality. The recognition that natural systems have limits as to how much disturbance they can tolerate is not a new concept. From the folk saying "don't foul your own nest" to the latest advances in understanding the science of ecology, it is simply a fact that we must limit our disruption of nature if we want to continue to enjoy its bounty. If humans overuse and abuse natural systems beyond their limits, or overload them in excess of their carrying capacity, the resources themselves will be destroyed, if not now, then in our children's or grandchildren's lifetimes. As such, an environmental baseline that embodies this carrying capacity is necessary to preserve the health of the ecosystem.

We ignore ecosystem interrelationships and the limits of natural systems at our peril, because no amount of engineering or money can successfully override those basic relationships and functions. A river and its ecosystem irreparably damaged by human intervention will not continue to serve our needs for clean water, food and fiber, and profit and pleasure. Thus, the first criterion to apply to the law and institutions of the Columbia River Basin is the natural law of the river itself. An environmental baseline must be identified that respects the natural laws and basic river functions, so that the Columbia River can continue to serve both human needs and the needs of the ecosystem for generations to come. Adoption of such a baseline contemplates greater emphasis on the natural processes of the Basin, although it does not ignore the existence of numerous facilities built to provide a variety of functions to the region.

(B) Priorities, Preferences, and Conflicts

The second criterion builds upon the first to some degree. Scientific understanding of the carrying capacity of the river and its important ecological functions must provide an environmental baseline before the river and related resources can be apportioned to other functions desired by humans. After establishing the baseline, the river will be called upon to support numerous human uses. The chosen uses and functions supported by the river may change over time, particularly as our scientific understanding grows and changes, but also as human values and policy objectives change. Institutions need to provide flexible and responsive mechanisms to reflect and implement our evolving priorities, always recognizing the environmental baseline.

Defining appropriate and desired river functions is essentially a three-part process. First, the environmental baselines must be identified. This involves delineating and describing the limits of the river's carrying capacity as discussed above. Once the limits have been established, the laws and institutions must formally respect that bottom line.

Second, other ecosystem services provided by a healthy functioning river and its watershed that are valuable to us as humans, even though they might not be part of the environmental baseline, should be considered. When assigning preferred uses, we ought to consider the whole range of possibilities, including the functions the river can provide for us in a less developed state. Sometimes these ecosystem functions are not adequately considered in the process of setting priorities because they do not provide direct profit to anyone; instead, they benefit all of society in an indirect way. In reality, these ecosystem functions present the opportunity to avoid costs in a way that is not immediately apparent.

For instance, all rivers exist in a floodplain; the basic purpose and function of the natural floodplain is to absorb, accommodate, and store floodwaters during periodic high flows. However, the floodplain also supports other purposes and functions. Nutrients from floodwaters replenish the soil, contributing to the growth of healthy riparian vegetation. Vegetation and wetlands in the floodplain provide rich wildlife habitat, as well as aesthetic and recreational values for humans. Floodplains and the accompanying wetlands can also filter and help purify water at low cost, and allow it to return slowly to the main river channel, replenishing both surface and underground waterbodies.

Human intervention changes the relationship between the river and its floodplain. This intervention does not prevent floods; flooding occurs because of climate and weather conditions beyond our control. All we can do is change the location of floodwater storage from the floodplain to a man-made reservoir and thus try to prevent flooding from occurring in certain places at certain times. However, substituting man-made systems and structures for natural river functions is expensive, and sometimes incorrect calculations or those based on insufficient historical information result in inadequate flood storage in the right place at the right time. The river then simply reclaims its floodplain, resulting in additional societal costs. In that way, society has paid dearly, and twice, for a water storage function the river could have provided "free" in its natural state. Meanwhile, the other ecological services that the river in its natural floodplain would provide will also be lost.[2]

Although we may legitimately choose to substitute our own system and structures to perform functions, such as flood control, that the river would do naturally (as long as the system does not thereby impinge on any essential environmental baseline requirements), we should do so knowing the full cost of substitution. We need to be aware that allowing the river to do some of this work might accomplish the same services for less money.

Finally, the third part of the prioritizing process involves making choices about more traditional, commodity-based human uses of the river and its watershed. After establishing the environmental baseline, and after accounting for any natural ecosystem services to be performed by the river, we need to determine how the river will be developed to directly serve human needs. Society needs to continually reevaluate the choices that have been institutionalized in the past to insure that they properly reflect current priorities. In order for this to be accomplished, institutions must be flexible and responsive enough to accommodate changes in choices. In addition, the process must include a mechanism to resolve conflicts among competing priorities.

[2] The recent report by the Independent Scientific Advisory Board recognizes that habitat diversity is substantially reduced as a consequence of a regulated river. The study finds that a river in a “normative” state increases habitat diversity, crucial to salmon recovery. INDEPENDENT SCIENTIFIC GROUP, RETURN TO THE RIVER: RESTORATION OF SALMONID FISHES IN THE COLUMBIA RIVER ECOSYSTEM (Sept. 10, 1996) (prepublication copy).

(C) Stakeholder Participation

Presumably, this criterion does not need extensive explanation. When contemplating the priority of potential river functions, various preferences must be heard. For reasons of equity, and to insure the best and most representative decisions about river uses, all those in a river basin who depend on and enjoy the river ought to have the opportunity to participate in decisions about its management. This includes those who rely on the river for their economic livelihood, which encompasses numerous and diverse groups such as (tribal and non-tribal) commercial fishers, barge operators, aluminum producers, farmers, tourism providers, and others. It also includes those who reap no direct monetary profit from the river, but whose lives would be poorer without it, including Indian tribes, recreational fishers, tourists, kayakers, and anyone else who lives near and enjoys the river.

Full participation in public policy development represents a continuing goal of our democratic society. Such an approach is just and equitable. In addition, "two heads are better than one," and by extension many are better than two. Increased participation by those affected will heighten the chance for cross-education and workable compromise, potentially resulting in better final decisions. Broad participation also makes for extremely slow decisionmaking and may undermine the flexibility necessary to practice adaptive management. Therefore, it is important to note that increased involvement by those who rely on the river does not necessarily mean consensus decisionmaking processes. It will always be necessary for appropriate institutions to make final decisions, but these decisions should be based on complete information about opinions and impacts.

(D) Efficiency and Cost-Effectiveness

As a simple matter of good government, the more efficient and cost-effective our institutions are at achieving agreed-upon objectives, the better we are served. On the surface, this criterion appears fairly straightforward. Continual evaluation ensures that existing systems accomplish established goals with as little waste as possible. Underneath, is the need to evaluate our institutions to prevent them from operating at cross purposes and to ensure that our laws and choices are not delivering perverse incentives. Although this criterion may sometimes seem at odds with the goal of including as many stakeholders as possible in the process, it should not be used as an excuse to curtail or limit participation. Rather, stakeholder participation should be maximized in the most efficient manner.

The remainder of this section analyzes the institutional framework that "runs" the Columbia River in light of the above criteria.

(4) Organizational Chart of Columbia River Institutions

The existing institutions that govern the Columbia River are described in detail in VOLUME ONE of this study. Before evaluating the existing arrangements, a brief summary of the "organizational chart" may be helpful. (See Figures 1 and 2) Beginning at the international scale, and working down to the local level, the river's management scheme looks something like this:

(A) Treaties

Two treaties between the United States and Canada cover certain limited aspects of river management. First, the 1964 Columbia River Treaty governs only two subjects—hydropower generation and flood control. The treaty provides for joint United States/Canada operation of certain mainstem and tributary dams in both countries, three in Canada and one in the United States, to manage storage and control releases. Pursuant to treaty provisions, hydropower generation is maximized while maintaining necessary flood storage; treaty-authorized reservoirs provide for the coordinated storage of much of the Upper Columbia's voluminous spring flows so that water can be released during the winter when power demands are greatest. The treaty does not consider operation of the system for purposes other than flood control and hydropower.

Second, the 1985 Pacific Salmon Treaty governs allocation of fish harvest between the two countries, attempting to secure to each country a proportion of the harvest roughly equal to its percentage contribution to the fishery stocks. The treaty created the Pacific Salmon Commission, a bilateral management forum, to develop annual harvest plans. However, for the past three years, annual negotiations have been unsuccessful, and the two countries have failed to reach harvest agreements. As a result, Canada and the U.S. have set separate harvest regimes.

In addition to the treaties with Canada, the U.S. signed numerous treaties, executive orders, and other instruments dating from as early as 1855 that officially recognized thirteen Indian tribes as sovereigns and established reservations throughout the Columbia River Basin. These instruments

preserved the tribes' governing authority over land and water resources located in the reservations, which comprise a land base of more than five million square miles within the Basin. In addition, some treaties and executive orders guaranteed hunting and fishing rights both on and off reservation, and reserved water rights necessary to fulfill the reservations' purposes. The tribes are critical players in Columbia River water management primarily because of their sovereign status, their treaty fishing rights, and their role as water and land managers within the Basin's multi-layered system.

(B) Federal Law

On the federal level, there are at least eight federal agencies with significant activities in the Columbia Basin—the Corps of Engineers, the Bureau of Reclamation, the Federal Energy Regulatory Commission, the Bonneville Power Administration, the Forest Service, the Bureau of Land Management, the National Marine Fisheries Service, and the Fish and Wildlife Service. A ninth agency, the Environmental Protection Agency, also has a critical presence, but its mandates operate mainly through state and tribal agencies with delegated regulatory programs. These agencies govern numerous activities throughout the Columbia River Basin.

The Corps of Engineers is the major player in the day-to-day management of the Columbia River. Pursuant to numerous federal authorizing statutes and the Pacific Northwest Coordination Agreement (PNCA), the Corps is the primary operator of twenty-one major federal dams in the Basin. Despite the varied congressional authorizing legislation for each of the federal dams, the entire operational system is coordinated by the Corps to maximize flood control, hydropower production, and navigation. Many Corps projects in the Basin are also authorized to provide water for irrigation, domestic, municipal, and industrial purposes, and some are operated for recreation and fish and wildlife enhancement and mitigation.

While the Corps has the overarching responsibility to coordinate federal facility operation in the Basin, the Bureau of Reclamation operates nine major dams in the Basin primarily for irrigation purposes, and has the authority to sell and provide irrigation water from all of the federal projects authorized to use water for irrigation. In addition, the authorizing statutes of many Bureau projects in the Basin specifically include hydropower, municipal and industrial, or recreational uses of project water.

The Bonneville Power Administration (BPA) has the responsibility to manage, market, and distribute the power produced by the numerous federal hydroelectric projects in the Columbia River Basin. The Corps, the Bureau, and BPA coordinate operation of the Federal Columbia River Power System (FCRPS) according to the Pacific Northwest Coordination Agreement, which is designed to facilitate integrated coordination of the FCRPS and non-federal dams. Other members of the PNCA include private utilities, municipal utilities, and public utility districts.

The Environmental Protection Agency (EPA) and the Federal Energy Regulatory Commission (FERC) administer pervasive regulatory programs affecting the Columbia River. The EPA's regulation of water quality occurs through both delegated programs implemented by the states and tribes and programs developed and carried out by the agency itself. EPA is responsible for overseeing implementation in those states with delegated programs. The primary means of program implementation is a permit system covering all point sources of pollution (national pollution discharge elimination system (NPDES)). Non-point sources, resulting from diffuse land uses such as forestry, grazing, and agricultural practices, are controlled through the establishment of total maximum daily loads (TMDLs) in state waters identified as water quality limited and voluntary and regulatory mechanisms in other waters that generally comply with state water quality standards. Non-point source pollution remains a serious problem for many rivers and streams in the Columbia River Basin. Currently there are lawsuits in all the Northwest states concerning alleged program implementation failures. Both point and non-point regulatory programs are increasingly being used to address water quality problems related to fish and wildlife habitat.

FERC's regulatory program involves licensing hydroelectric facilities on the Columbia River and some of its tributaries. FERC is active only at the stage of initial licensing or any later relicensing, with authority to condition licenses for numerous purposes including the protection of fish and wildlife. Once the project has been constructed according to license terms and conditions, and assuming continuing compliance, the project is operated by private or other non-federal entities; FERC is not an active player in ongoing river management activities, except to the extent necessary to monitor and assure compliance with license conditions. Pursuant to various provisions of the Federal Power Act, FERC is required to consider federal and state fish and wildlife agency recommendations to protect and mitigate damages caused by its licensed projects. In addition, FERC must incorporate conditions deemed necessary by a federal land management agency for

projects located on federally reserved lands as well as "fishways" (facilitating fish passage at projects) prescribed by federal fish and wildlife agencies.

The National Marine Fisheries Service (NMFS) and the Fish and Wildlife Service (FWS) conduct regulatory programs of a slightly different, though no less pervasive, sort. NMFS administers the Endangered Species Act (ESA) as it applies to anadromous fish in the Basin, while the FWS does the same for non-anadromous fish and other wildlife species. Federal action agencies, such as those managing water projects or federal land, must consult with NMFS or FWS when proposed activities threaten to affect a threatened or endangered species. If an action agency does not incorporate the findings and recommendations of NMFS or FWS, the agency must develop its own alternatives to avoid jeopardy to a species.

Finally, there are the federal land management agencies that manage 55 percent of the total land area in the Columbia Basin. Together, the Forest Service (national forest lands), the Bureau of Land Management (federal "public lands"), and other federal agencies manage forestry, grazing, mining, recreation, and numerous other activities that occur on federal lands. The activities on these lands have a great impact, albeit indirect, on water quality in the Columbia River and its tributaries. Further, the national forest lands carry unquantified reserved water rights necessary to fulfill the purposes of the reservation; these rights must be accounted for in state water quantity management schemes.

(C) Regional Law

The Basin also contains an important regional, interstate compact agency, the Northwest Power Planning Council. Created in 1980 by the Northwest Power Act, the Council promulgates two programs—a power plan and a fish and wildlife restoration program. Although the Council does not have any direct authority to implement or enforce its plans, the Northwest Power Act requires the Bonneville Power Administration to act consistently with these plans, while other federal agencies—the Corps of Engineers, the Bureau of Reclamation, and the Federal Energy Regulatory Commission—are required to take the plans into account to the fullest extent practicable in carrying out their river management duties. The Council does not have any authority, advisory or otherwise, over the other federal agencies in the Basin, including the land managers (primarily the Forest Service and the Bureau of Land Management) or the fisheries agencies (the Fish and Wildlife Service and National Marine Fisheries Service).

(D) State Law

The four major Basin states—Idaho, Montana, Oregon, and Washington—perform two key roles that affect the Law of the Columbia River. First, the states allocate private water rights for both consumptive and non-consumptive uses of water in the mainstem Columbia and its tributaries. The issued water right establishes a property right in the water right holder. Adjudications of varying sizes are proceeding in all four Basin states to quantify private rights to use public waters of the state; federal and tribal reserved rights are included in these adjudications. Second, all of the states design and administer certain programs delegated to them pursuant to the federal Clean Water Act, including the setting of water quality standards. Montana, Oregon, and Washington administer both point and non-point source pollution programs, while Idaho is responsible only for programs to address non-point source pollution.

(E) Local Law

Added to the multi-layered governance structure are numerous local-level institutions that affect the Columbia River, although somewhat less directly. Local land use regulations govern activities on the 45 percent of the Basin's land that is not federally-owned. These activities affect both water quantity, by driving water demand, and water quality, by shaping land use practices.

New and unique institutions are cropping up at the local level, too, in the form of watershed councils. The growth of watershed groups can be attributed to both official encouragement by Basin states and localized frustration with existing water management institutions. Watershed councils occur in a wide variety of institutional forms, and participate in a spectrum of activities affecting water use practices on the local scale.[3]

(F) Summary

This organizational chart of Columbia River management describes a complex, hierarchical, and essentially fragmented system. In fact, the term "organizational chart" is really a misnomer, because there are no lines

[3] This Institutional Study is limited to a review of federal, state, regional, and some tribal institutions: it does not analyze local institutions in any detail.

connecting the boxes as there usually are on such a chart. The management scheme is complex; the river is divided for management purposes among two countries, thirteen tribes, nine federal agencies, and four states. The basic divisions are territorial, upstream to downstream, and bank to bank, where the river forms the border between states or between states and reservations. Cross-cutting divisions occur along issue lines. One federal agency concerns itself with one kind of fish, a different federal agency manages for another kind of fish, state agencies hand out licenses and manage populations of all kinds of fish, while other tribal, federal, and state agencies concern themselves with the quality of the water the fish swim in. One federal agency runs dams for a particular purpose, another federal agency runs dams for a different purpose, a third federal agency issues licenses for others to build dams, and four state agencies issue water rights for water behind those dams. Many other such divisions could be listed.

The structure is hierarchical in that certain uses are institutionalized in superior positions, while other, equally important uses, are subordinated or outside the structure entirely. Although recent ESA listings are bringing about a reexamination of the hierarchy, essentially the hierarchy places flood control at the top, with hydropower generation, navigation, and irrigation close behind. Other uses, such as ecosystem protection, are off the chart entirely or share boxes uneasily with competing uses.

The system is also patently fragmented. The river, which is an integrated natural system, is seen through separate and independent lenses, depending on whether you are viewing it from federal, tribal, or private land; whether you come from British Columbia, Idaho, or Oregon; and whether your question is about water quantity, water quality, water transportation, or groundwater. Yet, from the fish-eye view, none of these divisions exist.

We now turn to an in-depth evaluation and critique of the laws and institutions governing the Columbia River Basin, utilizing the criteria for unified river management set out earlier. A more detailed analysis reveals the extent of fragmentation, rigid hierarchy, and complexity in the existing structure as well as the gaps, overlaps, and omissions in management authority.

(5) Respecting the River's Natural Limits

(A) Institutionalizing Carrying Capacity Analysis

The vast flows of the Columbia River originate in a small lake in the Canadian Rockies, meander hundreds of miles to the Pacific Ocean, and in a very real sense constitute an ecosystem. Because of the historical presence of anadromous fish throughout the Basin, the Columbia is probably more of a single ecosystem than any other large river in the continental United States. Everything is interconnected, with the effects of activities in one area of the Basin felt throughout. Clearcutting and grazing practices in various tributaries to the Columbia River produce sedimentation which affects fish that might be caught off the coast of Alaska. Farming in eastern Oregon's Umatilla Basin contributes nutrients to the water which might eventually alter the food chain in ocean estuaries where salmon feed. The light switch flipped on in Portland or Seattle, or even Los Angeles, might be powered by a turbine at Grand Coulee Dam in eastern Washington, now the upper terminus of fish runs that once traveled hundreds of miles further inland.

Yet, there are no federal or state laws that specifically direct any agency to determine the "carrying capacity" of the Columbia River Basin ecosystem. Nor is there any single entity, federal, state, or otherwise, whose mission is to understand and protect the ecosystem. There are laws that address the notion of the river's natural limits obliquely at best.

For instance, consider the Endangered Species Act, passed by Congress in 1973. The ESA is certainly a powerful tool, with its absolute mandate to prevent species extinction. The ESA—and litigation to enforce it by state fish and wildlife agencies, tribes, commercial and sport fishing groups, and conservation groups—has become the region's environmental safety net, the tool of legal accountability to protect Northwest salmon and other species, and thereby to preserve ecosystems indirectly.

Perhaps the most important gap in the ESA's protections, however, is the simple fact that no agency has the authority or responsibility to affirmatively ensure that a species is protected until it is on the brink of disaster. Unless a species is formally listed under the Act, the identification of critical habitat, development of a recovery plan, consultation requirements, and the takings prohibitions do not apply. Although the ESA was first discussed in the late 1970s as a possible tool for addressing the plummeting Northwest salmon populations, the Act's requirements did not become a reality in the Basin until the 1990s, when formal petitioning by conservation groups and tribes

led to official listings of Snake River chinook and sockeye salmon by NMFS. Because there is a gap in time between when a species is biologically in need of protection and when the ESA's provisions might actually be applied, necessary recovery measures may ultimately be more severe than if they were implemented at an earlier stage of a species decline. The ESA is thus reactive, rather than proactive.

Not only does the Act fail to protect a species until it is already in serious trouble, it identifies and protects only one species at a time. Neither the ESA nor any other law requires assessment and protection of ecosystems as habitat for multiple species. The implementing agencies (NMFS and FWS) attempt adoption of an ecosystem approach in their development of recovery plans and critical habitat designation. However, in spite of their well-intentioned efforts, the Act simply does not employ an ecosystem protection scheme, but rather employs a single-species approach.

Ultimately, the Endangered Species Act does not serve the basic purpose of requiring ongoing attention to the natural river system's limits. The Act's requirements apply only when a species is in danger of extinction, evidence of an unhealthy ecosystem already damaged beyond its carrying capacity.

The Northwest Power Act (NPA) theoretically gives fish and wildlife equal status with power production in the operation of the river's hydroelectric power system, but similar to the ESA, that statute suffers from a lack of comprehensiveness, as well as a lack of enforceability. The statute is largely limited to the consideration of the effects of the federal Columbia Basin hydropower system on fish and other aquatic wildlife. It does not mandate examination of the total river system, including other consumptive water uses, such as irrigation, or widespread land uses, such as forestry, mining, and agricultural practices. The Act does not bind federal land management agencies to act consistently with the Council's program. The Act only requires that certain federal agencies—the Corps of Engineers, Bureau of Reclamation, and the Federal Energy Regulatory Commission—take the Council's recommendations into account "to the greatest extent practicable," and that BPA act consistently with the Council's programs without supplying any enforcement mechanism. The agencies have used this discretion to avoid implementing certain Council measures.

The ESA and the NPA are the two most powerful and comprehensive laws available to force institutions in the Columbia River Basin to consider fish and wildlife impacts in their water and land management decisionmaking processes. Yet, neither law requires that the natural limits and carrying

capacity of the river be identified, defined, and respected. Other federal laws that require consideration of the effects of decisions and activities on various components of the natural system suffer from an even more limited scope. These laws, such as the Fish and Wildlife Coordination Act, the National Environmental Policy Act, the 1986 Electric Consumers Protection Act (amending the Federal Power Act), and the 1986 Water Resources Development Act focus on single agencies and isolated activities rather than require a basinwide or ecosystem approach. Further, these statutes simply require that certain environmental issues be considered, not that the natural system limits be clearly delineated, respected, and directly incorporated into agency decisionmaking processes.

The Fish and Wildlife Coordination Act, originally passed in 1934, requires federal water development agencies (primarily the Corps and the Bureau) to give "full consideration" to federal fish and wildlife agency recommendations when constructing any water impoundments. However, the statute maintains final decisionmaking authority in the Corps and the Bureau.

The National Environmental Policy Act, enacted in 1969, requires federal agencies to assess the environmental impacts of all federal actions and promotes public involvement in environmental decisionmaking. However, the statute imposes only procedural, not substantive requirements on federal agencies.

In 1986, the Electric Consumers Protection Act amended the Federal Power Act to include provisions requiring FERC to treat fish and wildlife on par with the other purposes for which non-federal dams were constructed and operated. The Act calls on FERC to condition new licenses based on recommendations received from fishery agencies. However, the statute requires FERC only to give "due weight" to fishery agency recommendations that are consistent with the Federal Power Act or other applicable laws. The manner in which FERC exercises this authority will have an important effect on Basin management in the next several decades, because more than forty Pacific Northwest hydropower projects will require relicensing during the next thirteen years. During those relicensing proceedings FERC will have the opportunity to reassess the environmental consequences of project operations and determine which conditions to apply to the projects for their next license term.

Finally, in 1986, Congress enacted the Water Resources Development Act, a statute which requires the Corps to submit with any water resource project proposal either a plan to mitigate fish and wildlife losses or a determination

of no impact. In 1990, Congress amended the Act, adding environmental protection as one of the primary missions of the Corps in the development and maintenance of water projects. However, this mission is qualified in that environmental protection efforts must not affect the Corps' existing authorities, including those related to navigation or flood control, or pending permit applications.

Federal agencies thus have ample authority to consider the environmental effects of their decisions. However, because the various statutes do not identify clear priorities or require that environmental concerns be incorporated into an environmental baseline, decisions on river system operations are essentially a discretionary, ad-hoc balancing of competing claims with final decisionmaking resting with the various agencies. In addition, most statutes apply only to proposed developments. In other words, although the agencies must "consider" opportunities for environmental protection, the laws do not mandate the adoption of protective provisions. Even the ESA, which requires agencies to avoid jeopardizing threatened and endangered species, does not contemplate implementation of an environmental baseline, and more importantly, does not set out clear priorities when conflicts arise. Hydropower, irrigation, navigation, and recreation appear to fare well under the current approach, but the productivity of the river as an ecosystem continues to decline.

Similarly, state laws and institutions support the preferences that have emerged on the federal level. State water allocation agencies' primary responsibility involves issuing water right permits. These permits generally create vested property rights under state law, and curtailment of existing rights may require compensation to be paid to the water right holder. As a result, it is difficult for state water rights agencies to effectively incorporate environmental considerations into their decisionmaking processes. State systems thus can do little to identify and protect the carrying capacity of the Columbia River and its ecosystem. Moreover, the laws governing the state institutions generally assume that the highest and best use of water is for diversionary purposes. In addition, states have failed to enforce their own water laws prohibiting wasteful water use practices. In fact, the lack of measurement and reporting requirements at the state level reflects an inability to adopt new technologies to incorporate changing values as well as an unwillingness to institutionalize data collection for agency enforcement purposes and public dissemination.

State water quality agencies' primary responsibility involves administering pollution programs delegated pursuant to the federal Clean Water Act. The

agencies are required to (1) set and review every three years state water quality standards, and (2) set load allocations for streams identified as water quality limited because they do not meet state water quality standards. These programs require the state to address practices that affect ecosystem health, however, the states have been slow in developing and implementing them. Therefore, the state systems operate to maintain the status quo rather than respect the natural law of the river, or its carrying capacity.

The Columbia River drainage basin encompasses a huge area—259,000 square miles of diverse territory. The Basin includes everything from rainforest to desert, mountain headwaters to ocean estuary, forested wilderness and vast open range to downtown Boise and Portland. It is tempting to say that it is ridiculous to pretend that there is a basin-wide ecosystem, and that any attempt to understand and manage it as such is presumptuous and impossible. But the facts are compelling. When salmon hatch in the headwaters of tributary streams hundreds of miles inland, rear in the downriver valleys and estuaries, mature in the ocean, and then return to the headwaters to spawn, the interconnections cannot be ignored.

It is also tempting, and perhaps accurate, to say that loss of a particular species, whether it is Snake River chinook and sockeye, the northern spotted owl, or any other single plant or animal, does not necessarily mean that the entire ecosystem is doomed; however, it does indicate an ecosystem in trouble. Many human needs could certainly continue to be met even by a severely damaged river; turbines would still turn, barges would still float, and crops would still grow (as long as the water is of sufficient quality). But the ecosystem may not be able to support other needs, such as viable commercial and recreational fisheries, treaty obligations, or clean water for special uses. Even though the idea of recognizing a Columbia River ecosystem is dauntingly complex, and the consequences of doing so are not yet fully understood, it is critical to do so if the river is to meet current and future needs.

A basic flaw in the Law of the River on the Columbia is thus the absence of an effective “bottom line” of ecosystem protection. No federal or state law mandates that the water resource, and associated land resources, be managed to sustain a healthy ecosystem into the future. This represents more of a gap in the governing laws and policy perspectives than an institutional problem per se. Although a number of federal laws require that some consideration be given to effects of federal activities on fish, wildlife, and other environmental features, most of these laws in the final analysis are non-binding. Even the two most powerful, the Endangered Species Act

and the Northwest Power Act, do not address the basic issue of determining and respecting the ultimate carrying capacity of the Columbia River ecosystem. The absence of fundamental recognition of the river system's carrying capacity is a critical failure of the governing law and institutions.

(B) Monitoring the Resource: Adaptive Management and Independent Scientific Evaluation

One of the most serious problems confronting Basin water institutions is the continuing scientific uncertainty about just what is needed to restore the river's ecosystem, particularly sustainable populations of salmon. Uncertainty provides both genuine cause for caution and, at the same time, an excuse for inaction resulting in preservation of the status quo. This is true notwithstanding that law and science appear to have converged on one important point: minor tinkering with the Columbia River system has not produced sufficient ecosystem
restoration within the basin to allow recovery of the salmon runs. Nor will further tinkering likely produce recovery in the future.

For nearly a decade, planners and fishery managers have discussed an approach to allowing action to proceed in the face of scientific uncertainty: adaptive management. Adaptive management involves acknowledging uncertainty, framing uncertain judgments as hypotheses, and actively using programs to test the hypotheses. Continual monitoring and evaluation of measures in place and appropriate modifications are integral components of this approach. Adaptive management has been greeted throughout its conceptual life by mixed reactions because it is difficult to understand and even harder to implement. In addition, many river users criticize the approach as too costly. Therefore it is necessary to secure funding certainty in order to achieve more scientific certainty.

Adaptive management is not consistently used by Basin water management institutions, although isolated examples of its use exist. Early research on sturgeon populations in the Columbia arguably led to substantially reduced harvest rates in the mid-1980s—an example of the limited use of adaptive management. The Northwest Power Planning Council, in its 1994 program amendments, attempted to apply adaptive management principles to determine the relative effectiveness of increasing flow versus fish barging in salmon recovery. The National Marine Fisheries Service is currently conducting a study on barging of smolts versus in-river migration to

determine comparative success. Nonetheless, at this time, adaptive management is neither systematically institutionalized nor broadly applied.

This is no mere academic problem. The adaptive management approach suggests that the proper reaction in the face of scientific uncertainty is to take experimental action and evaluate it rigorously, so that mid-course changes can be made based on new information and insights. Policy implementation under this approach is therefore continuously monitored and evaluated, and policy modifications are based on specific empirical findings; learning by doing is at the core of the adaptive management paradigm. However, since federal water and land managers themselves are not entirely clear on the meaning of adaptive management and how it should be applied to Columbia River operations, and the costs associated with implementation are high, the region's institutional apparatus continues to confront scientific uncertainty with a posture characterized more by gridlock than action. Aggressive movement towards requiring and institutionalizing an adaptive management approach is needed to cope with the complexity of the Columbia River ecosystem and better understand the effects of human activities.

The same lack of commitment and clarity has been evident regarding independent scientific evaluation. There are many issues scientists should not be expected or relied upon to resolve, including policy questions that are better left to the judgment of officials who are elected or appointed to make such decisions. At the same time, there is an emerging consensus that independent scientific evaluation is necessary to add credibility and effectiveness to overall river management decisions and the salmon restoration effort. Independent scientific evaluation should be institutionalized and should apply to program and project selection and review, experimental design, monitoring, and evaluation. Recent amendments to the Northwest Power Act required use of an Independent Scientific Review Panel to review projects and provide recommendations to the Northwest Power Planning Council based on a determination that the projects are supported by sound science and benefit fish and wildlife. While this is a step in the right direction, it applies only to fish and wildlife projects proposed for BPA funding. Similar devices are needed at all levels of water and land management responsibility.

Adaptive management principles and independent scientific evaluation can help discipline judgments on the effect of management decisions on the Columbia River ecosystem. They can also help reduce the interest group pressure and public suspicion that often accompany agency management

decisions. Further, adaptive management and independent scientific evaluation will help to objectively answer questions about the carrying capacity of the Columbia River and its environs.

(6) River Functions and Uses: Choosing Priorities, Resolving Conflicts

As described earlier, the process of appropriately choosing priorities begins with establishing bottom-line protections for the river ecosystem in order to assure long-term sustainable use of the resource. This critique has already highlighted the lack of consideration for maintaining ecological river functions in the Columbia River Basin. No laws require that the river's carrying capacity or natural limits be delineated and respected. Even specific laws designed to address environmental concerns, such as the Endangered Species Act and the Northwest Power Act, do not mandate protection of a healthy environmental baseline.

Nor does current Columbia River management effectively accomplish the second part of the prioritization process—considering whether the river will be allowed to perform certain ecosystem functions on its own, such as flood control, rather than replacing those functions with expensive and often ultimately unsuccessful manmade substitutions.

As to the third step of the prioritizing process, setting and/or changing priorities for desired human uses, close examination reveals that existing Columbia River water management institutions have effectively implemented a set of priorities formulated by Congress and the Basin states' legislatures early in this century. A close look at the way existing institutions prioritize river functions and resolve conflicts demonstrates starkly that certain uses have consistently been ranked higher than others, to the detriment of long-term sustainable use of the river. In short, the current system favors certain river uses, even when scientific reality or public preference demand other uses. The system provides neither flexibility nor responsiveness in the face of demands for change, and as a result has failed to adequately incorporate new and changing priorities into river management.

Quite literally, late nineteenth and early twentieth century goals for the river were "institutionalized"—codified in law and agency policies, poured in concrete, and embodied in governmental architecture. The resulting

institutions are, for the most part, hale, hearty, and understandably resistant to change, even as some of the goals themselves have changed. The early goals all centered on harnessing the river to provide wealth for the Basin's human economy. Harnessing a river the size of the Columbia, with a total annual flow of nearly 200 million acre feet and seasonal flow variation as high as 35 to 1, required massive physical controls.

The Bureau of Reclamation began altering Basin tributary streams for irrigation in the early 1900s, and the mainstem in the 1930s, with Grand Coulee Dam in Washington. More than half a century before that, significant consumptive water use for irrigation had already begun, albeit without federally financed structures, and many streams were overappropriated by the early 1900s. The Corps of Engineers also got seriously involved on the mainstem in the 1930s, with construction of Bonneville Dam, after minimal navigation improvements near the turn of the century. Large federal dams such as Bonneville and Grand Coulee provide flood control, power generation, navigation improvements, and more stored water for irrigation. Congress created the Bonneville Power Administration in 1937 to market the bountiful, cheap electric power from these large federal dams. The hydroelectric revenue in turn helped pay for the structures and supported other federal project purposes.

It should be no surprise that today, these three institutions—the Corps of Engineers, the Bureau of Reclamation, and the Bonneville Power Administration—maintain a great amount of control over water policy in the Columbia River Basin, particularly on the mainstem. These federal agencies are powerful because they exercise physical control over the river itself, and thus have the ability to influence Basin water use at a very basic level. The river has been transformed from a 1200-mile-long free-flowing system handling nearly 200 million acre feet of water every year into a series of slack-water reservoirs, that, together with non-federal dams in the Basin, provide storage equivalent to about one third of the annual flow.

For over one hundred years, we have been harnessing the power and plenty of the Columbia River to enrich our lives and pocketbooks. Hydroelectric power production, irrigation, river transportation, fishing—all of these human pursuits have competed and found their place in the queue for receiving the riches of the river. Building the dams and investing the Bureau, the Corps, and BPA with authority to manage them for particular and limited purposes essentially solidified the priorities of flood control, hydropower generation, irrigation, and navigation as the governing Law of the River.

The result is both focused and fragmented. It is focused in that the governing regime clearly elevates those four purposes above all others. But the system is fragmented as well because even those purposes are split among three agencies with very different missions, although formal and informal coordination has developed to keep the three agencies from constantly pulling in different directions.

The Corps is responsible for twenty-one major dams in the Basin, built primarily for flood protection and navigation. The Bureau is responsible for nine major projects, which were built to capture and store irrigation water to transform the arid portions of the Basin into an agricultural economy. Even more significantly, both the flood control projects and the irrigation projects were either originally built or later modified to serve an extremely important additional purpose—the production of hydroelectric power. The water power of the enormous flows and significant gradient in the Columbia was just too tempting to ignore. And now, a half century later, much of the economy of the Pacific Northwest depends in some way upon inexpensive hydroelectric power; this hydroelectric power provides 75 percent of the electricity in the Northwest.

Because of its flood control authority, the Corps has the primary responsibility for determining the river's flow regime. Even those facilities not managed directly by the Corps are governed by "flood control rule curves" developed by the Corps. These rule curves require a certain amount of storage to be available at certain times of the year to handle flood flows; planning for these storage requirements thus dictates flows and releases at other times during the year.

In addition to flood control needs, power generation needs are the other biggest single determinant of how the river is run. Flows are managed by both the Corps and the Bureau (as well as by other private and public entities who own and operate a number of smaller dams) to maximize power production pursuant to the Pacific Northwest Coordination Agreement, Columbia River Treaty, and numerous project authorizing statutes. The PNCA calls for integrated coordination of the Federal Columbia River Power System (14 dams: 12 operated by the Corps and 2 by the Bureau) and non-federal dams; an annual operating plan for the entire Basin is used to guide monthly operations.

Irrigation is the primary purpose of Bureau dams and an important secondary purpose for numerous federal projects in the Columbia River Basin. The Bureau distributes water for irrigation purposes pursuant to

contracts entered into with irrigation districts that specify the amount of water to be delivered, the time period for delivery, and the terms. For the most part, the federal reclamation law requires the Bureau to insure that secondary authorized uses of project water such as hydropower, municipal or industrial, or recreation do not impinge on irrigation.

Ten dams on the mainstem Columbia River and the Lower Snake River are operated for navigation purposes. These dams must be operated at minimum navigation depths at all times of the year to maintain the navigation corridor which extends from the mouth of the river all the way to Lewiston, Idaho, located 465 miles inland. The Corps has the authority to (1) construct river and harbor improvements, and (2) use storage water to aid navigation.

State and local institutions have developed complementary management structures that further support and preserve the priorities implemented by the federal institutions. The four Basin states have well-developed systems in place that support the consumptive uses of water made possible by the large federal projects.

For instance, each of the Basin states has a water allocation agency that issues water rights for consumptive uses of water. The states all subscribe to the prior appropriation doctrine, developed in the 1800s by western miners. The doctrine provides that those who put water to beneficial use obtain a vested legal right to continued water use. Allocation in times of shortage is by priority date. Although originating in mining camps, the doctrine worked equally well for early irrigators, and most of the valuable senior water rights in the Columbia Basin are held by farmers. While all four of the primary Basin states have promulgated some legal or regulatory mechanism to protect instream flows, in each instance, existing legal rights are always preserved. Further, state laws do not provide for the privatization of instream flows even though the prior appropriation doctrine is a private rights system. Therefore, most of the rivers and streams that have been overappropriated since the middle part of the twentieth century remain so today.

The state water allocation agencies thus worked hand in glove with the Bureau of Reclamation to institutionalize consumptive water rights in the Basin. Bureau projects irrigate more than three million acres of agricultural lands in the Basin. In addition, the state water agencies issue water rights to thousands of irrigators outside Bureau projects, and numerous other consumptive water rights, for domestic, municipal, and industrial uses. The state agencies' authority and influence are felt mostly in the tributaries,

where flow regime is less affected by federal projects, but the two institutional systems complement and support each other in maintaining the Basin's main historical priorities of flood control, hydropower, irrigation, and navigation.

In addition to the main water resource allocation agencies in each of the four states, each state has elaborate systems of subordinate local institutions in the form of irrigation districts, drainage districts, reclamation districts, and other special districts. These entities exist as creatures of state law, and they also help implement the goals of irrigation, flood control, and power generation of the Basin's water resources.

Only recently have any of these institutions, from the federal level to the local level, begun to try to alter or expand the list of established and codified priorities. As understanding of ecological science increased, and consequences of earlier choices materialized, both Congress and the state legislatures began to recognize the limits of the current system, and attempted to impose new priorities on the established institutions. This was the impetus for the Endangered Species Act, the Clean Water Act, the National Environmental Policy Act, the Northwest Power Act, and other federal legislation. As noted, similar legislation occurred at the state level, including mechanisms to try to recognize, protect, or restore instream flows.

But the existing institutions have not done well at incorporating new priorities. There are at least three reasons for this. First, it is challenging for established institutions to do something differently than they have for the past century. Asking the Corps and the Bureau to change their core missions from nearly single-purpose management directives to become broad-minded, ecologically-sensitive water managers no longer tied to their traditional constituencies has proved difficult. Asking state water allocation agencies to keep or put water back in streams instead of taking it out has proved similarly difficult. In fact, states have been willing to approve new diversions in overappropriated areas and are extraordinarily flexible in accommodating existing diverters to the point of ignoring temporal priority in some instances.

A second reason the shift has not taken place is that, in many instances the new priorities are in the form of requests rather than mandates. This is the problem of requiring only "consideration" rather than requiring the adoption of protective measures, discussed in connection with the carrying capacity section above.

A third reason is that, even as laws tentatively begin to recognize ecological connections (i.e., between water quality and water quantity, between groundwater and surface water, between instream flows and salmon restoration), the institutions remain fragmented. For example, the Bureau is still primarily the irrigation agency and is legally responsible only for its dams, and the Corps is still primarily the flood control and navigation agency, responsible for its own facilities. Neither agency is responsible for setting energy policy, which drives river flows in many ways. Nor is either agency responsible for fisheries policy, which also affects flow needs. Nor are any of the federal water management agencies responsible for the vast areas of public land on which the headwater streams arise and where activities affecting water quality frequently occur. Fragmented agencies cannot easily solve holistic problems, even if Congress told them to do so clearly. And Congress has not done so.

The legislation which attempts to impose new priorities on the system is also fragmented, focusing on single agencies or activities and doing little to force the region to adopt an ecosystem approach. Even the substantial protections the ESA can provide are weakened by institutional fragmentation in the Basin. First of all, ESA authority is split between the National Marine Fisheries Service and the Fish and Wildlife Service. NMFS has responsibility for anadromous fish (e.g. salmon and steelhead), while FWS has responsibility for non-anadromous resident fish (e.g. bull trout, sturgeon) and all other wildlife species (e.g. northern spotted owl, marbled murrelet). The ESA itself neither sufficiently specifies priorities nor identifies conflict resolution mechanisms when recovery plans for different listed species conflict. As a result, recovery efforts may divide federal, tribal, and state fish and wildlife managers, particularly in the upper and lower portions of the Basin, and frustrate efforts to modify system operations. This division represents one of the overarching examples of fragmentation in the Basin. For example, certain measures pursued by NMFS under the ESA for endangered salmon—such as upstream reservoir storage releases to boost summer flows in order to accelerate the juvenile salmon migration through downstream reservoirs—may damage resident fish populations, including the listed Kootenai River white sturgeon and the recently proposed bull trout, both of which the FWS manages. Specifically, the Confederated Salish and Kootenai Tribes and the State of Montana argue that storage releases to increase flows in the Kootenai and Flathead River drainages in northwest Montana to benefit salmon will harm the white sturgeon. These parties argue that recovery efforts underway for listed resident fisheries will be undermined by salmon recovery efforts, thus raising questions about the wisdom of the earlier investments.

Just as conflicts have developed between different ESA recovery plans, conflicts have also developed between measures taken pursuant to Northwest Power Planning Council programs and ESA recovery plans. For example, the Colville and Spokane Tribes in Washington are concerned about the effect of ESA salmon recovery actions on resident fish behind Grand Coulee Dam. Long before the ESA was enacted, the dam destroyed salmon populations depended upon by these tribes. To mitigate these losses, the construction of hatcheries to support and enhance resident, non-endangered fish populations of trout and kokanee was funded under the provisions of the Northwest Power Act. Now, increased water releases and fluctuating water levels that are part of salmon recovery efforts are reducing the amount of plankton available for the resident fish.

The Columbia River system lacks any mechanism to effectively address and resolve these disputes when federal, state, and tribal agencies cannot agree, or when conflicts between different programs arise. To date, parties have relied on a combination of the courts and ad hoc agreements to settle disagreements related to river operations. For example, the Vernita Bar Settlement Agreement between hydropower operators and environmentalists representing the fish interest grew out of a conflict over flows in one of the most productive spawning areas in the Columbia River, the Hanford Reach. The agreement establishes a flow release program which provides water from Priest Rapids Dam to protect the spawning areas at critical times. The 1989 Fish Spill Memorandum Agreement among BPA, various tribes, and federal and state agencies, establishes an agreed-upon spill program. The Council subsequently adopted the agreement into its fish and wildlife program, and the Corps, although not a party to the agreement, has abided by its terms.

An additional agreement, the Columbia River Fish Management Plan is not tied directly to river operations, but represents an attempt by several tribes and the states of Oregon and Washington to coordinate fishery harvest practices. The plan, arising out of several court cases, governs in-river harvest. These examples highlight the institutional fragmentation and the lack of an appropriate forum to resolve disputes and evaluate conflicts from a basin-wide, rather than a single issue, perspective. There is a clear need for a systematic way to resolve disagreements, so that failure to agree does not result in inaction, or reduction to the lowest common denominator of agreement, with litigation as the last resort.

To be successful, a dispute resolution mechanism must be accessible, timely, and decisive in the sense that final decisions are binding on all parties. To ensure that the dispute resolution mechanism is not arbitrary, it must be

legally grounded in the existing obligations and rights of the affected parties. In the case of the Columbia River, these legal obligations and rights clearly include the Pacific Salmon Treaty, treaties with the Northwest tribes, the Endangered Species Act, and the Clean Water Act, at a minimum.

The current system is a consequence of priorities chosen during the first half of the twentieth century, backed by large expenditures (both federal and non-federal), and solidified by governmental institutions and operating arrangements. Now it is extremely difficult to alter or add new priorities into the mix. Proposals to change the water management goals or methods in the Basin run up against a formidable foe: three large federal agencies with as much as a half century of experience in managing the Columbia River a certain way.

(7) Stakeholder Participation

Does the current system of Columbia River management ensure broad and effective participation in decisionmaking by all groups interested in water management issues? To some degree, an evaluation of the status quo according to this criterion reveals the mirror image of the foregoing discussion about how well the institutions set priorities and adapt to changing values. Those interest groups whose ideas and goals have been institutionalized by current federal and state policies and established agencies have ample opportunities to participate in decisionmaking processes, while the interests that historically have not fared well under the existing programs continue to have problems gaining access to the decisionmaking processes and making their voices heard.

For example, in 1995 the Columbia River Treaty Tribes (Confederated Tribes of the Umatilla Reservation, Confederated Tribes of the Warm Springs Reservation, Confederated Tribes of the Yakama Indian Nation, and the Nez Perce Tribes) developed their own salmon restoration plan, Wy-Kan-Ush-Mi Wa-Kish-Wit (Spirit of the Salmon) due to the failure of both NMFS's salmon recovery plan and the Council's program to protect the resource. In many ways the plan differed from NMFS's plan developed pursuant to the ESA; the tribal plan emphasized reservoir drawdowns, an increased spill regime, and significant reductions in the number of juvenile fish transported in barges during the out-migration period. However, the tribal plan is not legally binding. As an extremely important stakeholder in the river management process and an independent sovereign and culture that depends on salmon for subsistence, ceremonial, and commercial needs, the tribes have been

dissatisfied with both the available forums to voice their opinions as well as the respect and deference given to their recommendations when they have actively participated. Most recently, the Columbia River Treaty Tribes withdrew from the Executive Committee established to guide NMFS's river operation recommendations. The Tribes cited the process as purely procedural, with no real consideration given to their suggestions.

Alternatively, the traditional interest groups whose values are "built in" to the current system have not necessarily needed to participate directly, because the governing entities themselves have often served as representatives or surrogates for those very interests. For example, the Bureau of Reclamation has, until quite recently, been perceived as an agency clearly aligned with the irrigation interests it was designed to serve. Indeed, it would have been difficult and counterproductive for the agency to be any other way. The Bureau was established with the clear mission of reclaiming the arid lands of the west. This mission was to be accomplished by building federal projects, some of them very large, which normally could not have been accomplished at the state or local level, in order to deliver irrigation water to family farmers. In virtually every case, Congress authorized Bureau projects with irrigation as a primary purpose. Occasionally, other primary or secondary purposes were included, such as municipal or industrial uses or power production. However, even though sometimes legally identified as primary, these other purposes were always subsumed as incidental to irrigation. For instance, if a dam could produce power from the stored water, the resulting revenue stream could be used to subsidize the irrigation purpose of the project. In addition, surplus water available beyond irrigation needs could be sold to municipal or industrial customers, again providing supplemental income to support the irrigation project. This interdependence between hydropower revenues and reclamation costs has caused hydropower generation, an incidental purpose at reclamation dams, to gain significance.

Congressional policy, from the inception of the reclamation program up until only the last few decades, supported the Bureau in its single-focus, constituent orientation. For example, Congress recognized that many of the reclamation projects could not be self-supporting financially in the manner originally intended, and thus liberally extended the payback periods for the farmers beyond the initial contract periods.

Beginning about thirty years ago, however, the landscape began to change for the Bureau of Reclamation and other agencies, as a result of new laws and a series of financial cutbacks. A series of environmental laws sought to impose new priorities. Along with the new priorities came new constituencies.

Conservation groups, environmental groups, fish and wildlife interests, recreationalists, fiscal conservatives, and Indian tribes all began to question Bureau projects and operations. The Bureau soon found itself in the position of not satisfying any constituent group. The agency's traditional agricultural constituents felt abandoned, to the point of claiming unconstitutional takings of private property, as the agency was compelled to modify operations at many facilities to avoid adverse effects on endangered species. Environmental constituents, on the other hand, still perceive the Bureau as largely beholden to traditional interest groups. And Indian tribes take exception to the fact that Bureau projects continue to deliver water to farmers, in spite of the reality that tribes often have prior legal claims to that water.

Similar challenges have occurred to the operations of the Corps of Engineers, the Bonneville Power Administration, the Federal Energy Regulatory Commission, federal land management agencies, and state agencies. Imposition of new environmental priorities, along with the concomitant insertion of new constituencies has upset the customary, productive relationship between traditional interest groups and federal and state water and land management agencies.

At the same time, federal cost-cutting measures have begun to change the rules for the institutional players, leaving the traditionally powerful agencies in a more vulnerable position. This, too, expands the list of stakeholders to whom the agencies must listen. Again using the Bureau and the Corps as examples, financial changes have worked considerable change on their missions and modes of operations. Both agencies historically thrived on the planning, promotion, and construction of large federal projects, but no new large federal projects have been authorized for several decades. The convergence of several factors—the realization of the dramatic environmental consequences that can occur from large dams, the fact that most of the prime reservoir sites have already been used, and the enormous expense of building new large facilities—has essentially put an end to major federal dam construction programs. As a result, both the Corps and the Bureau have had to redefine their missions.

Both agencies now describe themselves as full-service water management agencies. They recognize that existing facilities and projects need to be operated with numerous goals in mind, not just the traditional aims of flood

control, power generation, irrigation, and navigation. Each new goal added to the list produces new stakeholders who must be involved in decisionmaking.

Two problems remain that prevent broad and effective shareholder participation: (1) a lack of clarity as to how to make choices among the varied points of view of the stakeholders, especially since some of the stakeholders represent non-economic interests or groups who have traditionally wielded little influence, such as Indian tribes; and (2) an absence of a common forum in which to negotiate and resolve disputes.

(1) Making Choices Among Stakeholders' Points of View.—In theory, the more points of view gathered as part of making a decision, the better the decision will be. The effects can be fully understood, adjustments can be made, and a mutually acceptable decision can be generated. However, when a finite natural resource is involved, difficult allocation decisions sometimes need to be made that simply are not mutually acceptable. In other words, if the Columbia River is viewed as a pie, the more parties who want pieces, the smaller the pieces will be, and some may not get any. Indeed, if the resource is in fact already over-allocated, some interests may even be asked to give up their portions. Columbia River water cannot be in two places at once—in a reservoir stored for future power generation and flowing down the channel to aid fish habitat. Therefore, those who either do not get a piece or get one that is too small, will be dissatisfied with allocation decisions.

Even if an agency is encouraged to construe its mission broadly and listen to all points of view as to the appropriate use or management of water, ultimately, the final decision rests with the agency. If governing law does not dictate how the agency is to decide, the likely decision will be the easiest one, that which is most responsive to the stakeholder with the most apparent economic clout. These decisions will be the least disruptive of historic, vested economic interests. Indian tribes, fish and wildlife interests, and other non-economic environmental interests will usually have less influence in the end.

(2) Lack of a Common Forum.—This problem is compounded by the absence of an appropriate forum that truly brings all the stakeholders into coordinated decisionmaking processes. For instance, consider a conservation group or Indian tribe interested in protecting and restoring wild anadromous fish populations. If such a party wants to participate in decisions affecting the fisheries habitat, it needs to monitor or get involved in at least ten different forums, including the annual Pacific Salmon Treaty harvest

negotiations, the resource management planning processes of both the Forest Service and the Bureau of Land Management, Bureau of Reclamation and Corps of Engineers facilities operation decisionmaking proceedings, state water quantity and water quality agency proceedings, the planning activities of the Northwest Power Planning Council, Bonneville Power Administration rate-making proceedings, Federal Energy Regulatory Commission relicensing proceedings, and the various public review opportunities pursuant to Endangered Species Act proceedings.

In each of these forums, stakeholders seeking to represent the fish interests encounter other powerful and well-funded interest groups. These include the organized irrigated agriculture interests, the Direct Service Industries (DSIs) who benefit from inexpensive hydroelectric power, and the river transportation lobby. Each of these interest groups possess significant economic and political influence, and most can concentrate their influence in only one or two forums, where decisions affecting their particular interest are made. In other words, stakeholders who seek to represent the ecosystem issues need to participate in a myriad of forums within the existing complicated and fragmented decisionmaking system. This works to their disadvantage. Focused economic interests, on the other hand, are interested only in a part of the whole. Therefore, they do not need to concern themselves with all the various institutions, but only those which affect their economic concerns.

(8) Efficiency and Cost-Effectiveness

Management of a unified natural resource should be accomplished in the most efficient and cost-effective manner possible. There has been no comprehensive empirical analysis to assess whether the existing system manages Columbia Basin water resources with a minimum of costs and a maximum of benefits, and such an effort would indeed be daunting. However, a few targeted examples of duplicative or inefficient expenditures, of inadequate means to resolve conflicts, and of misaligned goals and incentives, demonstrate that the current system is not optimally designed. This section raises questions about the existing arrangements, rather than trying to provide answers.

There is clearly a considerable amount of duplication and overlap in existing management institutions. For instance, two federal agencies, the Corps and the Bureau, build, maintain, and operate federal dams and other water development facilities. Both agencies thus have similar programs and

substantial staffs of planners, geologists, hydrologists, engineers, contract managers, and financial experts. In the last few years, as these agencies' missions have altered somewhat, staff emphasis has shifted as well. The agencies now employ scientists that study and analyze project impacts and new methods of facilities operation. To a lesser extent, FERC duplicates some of the same functions, although its personnel play a reviewing role at the licensing and relicensing stage rather than a project construction and maintenance role.

Meanwhile, similar ranks of scientists exist in other federal and state institutions. The Fish and Wildlife Service and the National Marine Fisheries Service both employ numerous fish biologists and related scientists, which makes sense, since it is their job to implement the Endangered Species Act. Nearly every other agency working in the Basin also employs its own scientists, including the Forest Service, the Bureau of Land Management, the Bonneville Administration, the Environmental Protection Agency, as well as the water management agencies like the Corps, the Bureau, FERC, and BPA. The pattern is repeated at the state, and sometimes tribal level.

A certain amount of duplication is inevitable whenever there are separate agencies pursuing different missions. But the problem is exacerbated by the fragmentation of responsibilities in the Basin and compounded further by the fact that the water resource, in a very basic sense, is indivisible. Since no agency is ultimately responsible for the solution (managing the Columbia River sustainably), all of the agencies become responsible for the problem of dealing with the consequences of species loss, pollution, and so forth. Every agency has to contend with the impending loss of salmon, and with other growing environmental problems; thus, every agency needs scientists (and planners, and public relations staff). But often what results is "advocacy science" which serves the primary, historic purpose of the institution. Often, an agency's scientific personnel do battle with scientists at other agencies trying to fulfill a different mission, or with private sector scientists who want the agencies to perform certain actions. One might question whether the Basin's public or the ecosystem is served by such a costly arrangement.

Inefficiencies also result from the lack of workable conflict resolution mechanisms. Section (6) of this study described the lack of flexibility in the system to incorporate new priorities—those already reflected in law, as well as those still emerging. Section (7) also described the continued lack of effective access for certain interest groups and points of view. These problems create friction in the institutional structure. For the most part, slow, expensive, and ultimately unsuccessful administrative challenges or

litigation are the only available tools for addressing this friction. Such tools do not efficiently resolve complex resource management problems and, like mechanical friction, they wear on the parties as well as the institutions.

Finally, the current system works against itself in many ways by building in perverse incentives. There is widespread recognition in the Columbia Basin that aggressive action of some sort is required to prevent numerous salmon species from becoming extinct, although there is still disagreement about the appropriate percentage of blame to be assigned to various causes for the decline, as well as how best to design the solutions. Section (5)(B) of this analysis discussed the concept of adaptive management as a means of coping with such uncertainties and disagreements. Adaptive management requires trying various possible solutions, even if their effectiveness is unknown, followed by active monitoring and evaluation of the results. Basin institutions have had such trouble practicing adaptive management because of the financial effect of any serious challenges to the status quo. Currently, the laws and institutions operating in the Basin provide financial advantages to certain groups, including irrigation and navigation interests, and aluminum companies, and these groups are understandably reluctant to give up their subsidies. Some of the subsidies are unique to the Basin; others are not.

For example, everyone in the Columbia Basin, from aluminum manufacturers to farmers to consumers, enjoys electricity rates that are less than half as much as those in other parts of the country because of the Columbia River hydroelectric system. Non-residential customers, such as manufacturers and irrigators, enjoy an even greater advantage. Even though polls suggest that many individual consumers would be willing to pay higher rates to help save salmon runs, translating that vague sentiment into political action is difficult. Other major power users, including the aluminum manufacturers and other DSIs (direct service industries who buy power directly from BPA), lumber producers and pulp and paper mills, and agricultural users (for irrigation pumps and food processing) actively resist any change to river management that will increase power costs. The entire region thus externalizes the costs of producing power at the expense of the salmon and those who depend upon salmon for their livelihoods, culture, and religion. Although achieving some clarity in where the Basin is headed with salmon restoration and ecosystem protection could in fact save some money in terms of eliminating duplication, overlap, and inefficient friction, such savings could very well be outweighed by increased costs overall.

In short, electric customers in the Columbia Basin now enjoy cheap power, due in part to the fact that they avoid paying for many environmental externalities associated with that power. Even though the ESA and other laws make saving the salmon a goal, there are few incentives to achieve that goal because doing so will hurt financially. Our goals and incentives are thus misaligned, because the behavior we want to encourage costs more than the behavior we want to discourage.

Similar misalignments exist in other areas. Much has been written about the perverse conflicts among subsidies in the irrigation area.[4] Irrigation projects (in the Columbia Basin and elsewhere) are subsidized because farmers pay less than the full cost of developing and delivering the water. At the same time, other government programs may in fact be offering conflicting subsidies by purchasing surplus crops or even paying farmers not to grow the very same crops that federal water is irrigating elsewhere. This is an inefficient use of government funds, to say the least.

River transportation and flood control are both heavily subsidized as well. Taxpayers pay for dredging and other projects and facilities that maintain navigation on the Columbia; users of the corridor do not pay directly for the service. Taxpayers also pay for flood control; the federal government pays between sixty-five and seventy-five percent of a project's flood control costs, thereby encouraging risky flood plain development.[5] In fact, as mentioned in section (3)(B), often we pay double: first for constructing projects, and then to pay for losses in the floodplain when catastrophic flooding occurs anyway.

Ironically, hydropower revenues are directly tied to fish and wildlife protection measures. Every year, a large quantity of the revenue accumulated by BPA from the marketing and transmission of power produced by the federal Columbia River Power System goes directly to mitigate fish and wildlife losses attributed to the operation and maintenance of the same system. This includes approximately $250 million per year given directly to specific mitigation measures and an additional $150-200 million to absorb the cost of altering dam operations (for flow augmentation and spills) to preserve, protect, or enhance fish and wildlife. Therefore, decreased

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[4] FRIENDS OF THE EARTH AND THE NATIONAL TAXPAYERS UNION FOUNDATION, THE GREEN SCISSORS REPORT: CUTTING WASTEFUL AND ENVIRONMENTALLY HARMFUL SPENDING AND SUBSIDIES (January 1995); ECONorthwest, *The Columbia River and the Economy of the Pacific Northwest* (1995) (on file with the Northwest Water Law and Policy Project)

[5] American Rivers et al., *Recommendations for an Environmentally Sound Federal Policy on Western Water* (Apr. 30, 1997) (delivered to the Western Water Policy Review Advisory Commission).

hydropower revenues lessen the amount of funding for fish and wildlife programs.

Finally, there are valid questions to be asked about federal land management policies as well. Timber harvest practices, grazing activities, and mining activities on federal lands in the Basin contribute to water management problems, in terms of erosion and sedimentation, pollution, habitat alteration, and flood flow modification. Although the precise limits of these contributions to the salmon problem or any other aspect of water quality management are the subject of great debate, there is widespread agreement that these activities are significant factors. Thus, to the extent that current programs subsidize timber harvesting, grazing, and mining, there is again misalignment between economic incentives and mandated goals.

Subsidies are a legitimate instrument of public policy. But whenever they are employed, two questions should be asked. First, do the subsidies (or underlying assignments of costs and benefits) tend to achieve agreed-upon goals, or do they work in the opposite direction? Second, are the subsidies consistent with other subsidies already in place, or do the subsidies cancel each other out?

This brief review of the existing laws and institutions in the Columbia Basin suggests that applying these two questions to existing Basin programs reveals numerous conflicts. Eliminating and reconciling the perverse and conflicting economic incentives would improve the existing system and better serve the citizenry.

(9) Conclusion

Nearly a century of water law and policy development in the Columbia River Basin has created a complex patchwork of international, federal, state, tribal, and local institutions. For the most part, each institution exists to fulfill a certain focused mission and pursue specific limited goals. With few exceptions, there is a certain consistency to these pursuits. Most of the missions and goals are in furtherance of harnessing the Columbia as a "working river"—a river that powers a Pacific Northwest agricultural and industrial economy that rivals the economy of Sweden. Until a half century ago, this was the consensus vision of the river and there was little conflict among the institutional goals, objectives, and procedures; such a consensus no longer exists.

Within the last two or three decades, developments revealing the effects of previous choices, new scientific knowledge, and changing values about water uses have altered the Basin's "water landscape." A significant change is the revision, or at least supplementation, of some of the original goals.

Perhaps even more significant is what we have learned from the river itself. The plummeting salmon populations suggest that our policy and legal goals have been too limited for too many years, and that we now run the danger of destroying the very resource itself in our appetite to use the river to power generators, irrigate fields, and sustain a port 465 miles inland. Several decades of close physical management of the river for flood control, navigation improvements, power generation, and irrigation have left a legacy of one of the most developed and controlled river systems in the world, one of the world's major hydropower rivers. Now, as the twentieth century draws to a close, we are developing a different vision for the river. That vision includes: a functioning natural ecosystem; comprehensive, coordinated management; harvestable salmon runs; the elimination of perverse incentives; and sufficient water quality. The system needs to be operated in a manner that allows human use of the natural resource without destroying the functioning ecosystem. But we have yet to fully incorporate that vision into clear and workable laws, and we find that the institutions that were so competent at delivering on earlier objectives cannot readily adjust to these new demands.

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6. Ecosystem Values and Governance in Western River Basins: A Commentary and Proposal[1]

(1) The Development Model: A Physical Legacy

Water has been stored, shaped, channeled, drawn off, moved about from one place to another across the western landscape for the last one hundred eighty years. The hydrographs of western water basins have been modified by the western impulse to manipulate, remake, shift from one place and time to another until parts of some river beds are dry by midsummer, while plains that used to bake in the heat are now flooded and green, producing goods for world markets. Low gradient mountain valleys that once were beaver backwater and camas marsh have been drained, diked, and planted with mint and alfalfa. Snowmelts and spring floods that defined millennia of aquatic biology in western watersheds define it very differently today, their waters impounded and held for summer irrigating, or shifted forward into the following winter to meet electric power demands. Slackwater pools behind New Deal dams are sluggish and warm, habitat for different species than those evolution introduced and succored for thousands of years before.

The litany of changes in the reports from different western watersheds has familiar texts and cadences. Collectively they describe the development model that has been used to shape and manage all western water basins. Finite water supplies have been managed on a presumption of abundance. The effects of direct consumption of water have been compounded by indirect consumption: not explicit withdrawal of water from streams but degrading the quality of what is left by modifying water temperatures, chemistry, sediment loads, stream, riparian and upland structure, and timing of flows. Biological effects of physical stream alterations have been in their turn compounded by direct harvest of species with commercial value, beaver and salmon among others.

National and western values now call for redress of these effects, for a recovery of threatened and endangered species and the concomitant rehabilitation of watershed habitats. The emerging science of stream ecology teaches the significance of complexity, diversity, and sufficiency in biological systems, and in the hydrology and topography of streams and adjacent lands. But development pressures on western waters have not abated despite a

[1] This section was written by Angus Duncan, President, Columbia/Pacific Institute. It relies on the author's review of evidence and findings in five studies of western river basins prepared for the Western Water Policy Review Advisory Commission, in addition to his own experience working with issues in the Columbia Basin. The views stated herein are those of the author rather than an official position of the Northwest Water Law and Policy Project.

growing recognition of scarcity and over-allocation. Demand for some uses, such as irrigation and recreation, has intensified in ways that reinforce the developed status quo and hamper watershed restoration.

Calls for environmental protection could once be met in a fashion that seemed to satisfy all parties: protect a little more land or water in a wilderness area; add irrigation storage capacity downstream and fatten the allowable cut upslope; insert a fish hatchery to offset losses of productivity in natural habitat. Here at the end of the 20th century, easy solutions are more elusive. With much of the available watershed resource already committed to commercial use, and demand not slackening, we must divide up a shortage while reserving, or reclaiming from present users, enough of the watershed to restore it to sustainable levels of biological health and ecological integrity.

Can we do this with the tools available—laws, agencies, institutions—almost all of which are legacies of the development model? Or are the tasks sufficiently different that new river governance models and institutions must be devised?

(2) The Development Model: An Institutional Legacy

The visible tools of the development model are prior appropriation, allowable cut, hydropower licensing, harvest allocation, and AUM's (animal unit months). Less direct but equally significant are land use and zoning laws, transportation strategies, subsidies and tax incentives, all encouraging economic development of natural resources without a corresponding concern for environmental consequences. These are all expressions of the development model that has governed the West since Euro-American settlement began a hundred eighty years ago. Each represented a solution to a need or problem particular to a place and time, usually well-suited to the need as it then existed. Prior appropriation as a basis for securing water rights emerged in California's mining camps, where it provided an elegant, equitable basis for allocating water among multiple claimants. When the problem is stated narrowly—how to distribute limited supplies of water, in some cases remote to the miners' claims, in a way that will be respected as fair by all parties—the tool fits the task. It is only later, when the statement of the problem is enlarged with other considerations, including preserving the biological health of the streams, that the pioneer solution becomes a status quo impediment to solving the newly-stated problem. The tool was not constructed to protect stream health. It should come as no surprise that it is unable to do so.

The development model relied heavily on the principle of first-come, first served, whether for water or land or mining claims. Because its object was to promote development, it required that the beneficiary use the resource, or lose it to someone who would. So today western states struggle to find a basis in water law that would sidestep this principle and allow unused —"wasted"—flows to be left instream, shepherded down past junior appropriators with claims to it supported by history and principle. It is a consuming process just to get the water back where it was in the first place, sustaining aquatic biota.

Forest Service auctions assume the harvest of trees, not their preservation as forest. The BLM declines grazing rights transactions with high bidders who would leave the land ungrazed. The agencies have conservation responsibilities, but their best tools are designed for extraction.

There is a fundamental mismatch between human institutions geared to efficient consumption and ecosystems existing in an equilibrium that may be disturbed from time to time, but that requires most of its parts most of the time. Human consumption can permanently disrupt ecosystems by directly harvesting species to extirpation, by simplifying genetic diversity to a point at which species resilience is lost, or by displacing species from their essential habitat (or so degrading the habitat that it can no longer sustain the species). The institutions established in the American west to facilitate development affected river ecosystems in each of these ways.

Commercial demand for beaver pelts, buffalo robes, and canned salmon took their toll on species in the nineteenth century. Most western river ecosystems, however, survived the lower levels of frontier consumption substantially intact. It was not until population levels rose, more efficient technology was devised, and economic development was systematically supported by government action, such as laws, investments, and subsidies, that habitat degradation and biological re-engineering began to take their vastly greater toll.

Some of these governance institutions and practices have included:

(a) *Boundaries*: John Wesley Powell advised us, a century ago, to organize development of the west along "hydrographic basin" lines. But state and local boundaries were set at the convenience of commercial and political interests, indifferent to Powell's advice. Disagreements, different management regimes, and random events of cooperation now

characterize state relations in all western river basins. Upper basins are divided from lower ones; and left banks from right. Rivers should have been the unifying spines of states, not their dividing lines.

Coherent management of watersheds, whether for efficient consumption or conservation, is hostage to these lines on maps. Water conserved in Oregon to augment Snake River flows may be withdrawn by an Idaho farmer directly across the river. Lower Colorado River states jostle each other, the Upper Colorado states, and Mexico for increased shares of a declining resource. The separation of management authority encourages a parochial competition to consume: the biggest consumer is rewarded with the largest permanent resource allocation.

Other lines divide watersheds. National forests are oriented to ridgelines, since that is where the harvestable timber exists. Two or more different forest plans may share jurisdiction in a single watershed with Bureau of Land Management grasslands, and private holdings governed by state and local land use laws.

We have even interposed a boundary line between surface and subsurface waters, allowing us to manage and allocate waters and riparian areas as though they were quite unattached to each other. This distorts our understanding of the hydrological cycle in ways that advantage certain users while degrading the hydrological basis of the river ecosystem. Detaching streams from their flood plains elevates stream temperatures, increases channelization, reduces sanctuary from predators, damages the food web, and generally diminishes the ecosystem diversity on which the stream's biota rely.

Boundaries lend superficial credence to notions like "Idaho's water," as though the hydrological cycle did not move water from elsewhere through Arizona and out again. Yet there has come to be a different kind of possession of rivers: a "hydrocommons"[2] that extends beyond the physical drainage to include all the users of a river basin's products. Interbasin transfers of water—most famously from Owens Valley to Los Angeles—are the most explicit example of extra-basin claims established by usage. Power generated on the Colorado River may be transmitted to Los Angeles, or eastward, to Arizona and New Mexico. Wheat from North Dakota is trucked

[2] *See* WEATHERFORD, FROM BASIN TO "HYDROCOMMONS": INTEGRATED WATER MANAGEMENT WITHOUT REGIONAL GOVERNANCE, (Natural Resources Law Center Discussion Paper Series, January 1990).

to Lewiston, Idaho, barged downriver to Portland and transshipped to Japan. These uses are new economic claims that must be either satisfied by the river basin or backed out at some economic and political cost. Because they place demands on western rivers, they may diminish the basis for life in one watershed, one ecosystem, in order to enrich another as surely as if the water itself had been transported. River governance models must take the demands of the hydrocommons into account, since these outside users will resist conservation priorities that increase costs or reduce the flow of wealth outside the watershed.

(b) *Laws and institutions oriented to consumption*: Federal and state policies for the last century have been designed to accelerate development of the American west and the economic use of its natural wealth. The litany of grazing, mining, and other laws encouraging economic activity is well known. Powell was not proposing conservation set-asides in his hydrographic basins, but efficient and sustainable consumption according to the Progressive Era model of conservation.

A distinctive western culture has been nourished and encouraged by these policies. Living wages have been produced for many, substantial wealth for a few, and enviable communities for all in which gracious and rewarding lives can be lived.

Both the benefits to human communities and the costs to other biota are products of conscious government policies to develop, and of direct and indirect subsides and public investments to stimulate and support development. While nature celebrates diversity, civilization values productivity, which in the near term at least means uniformity and homogeneity. A field of soy beans replaces the diverse flora and fauna of prairie grasslands; a treefarm replaces a forest. Stairstepping slackwater pools are substituted for a turbulent, free-flowing, spring-flooding western river.

Government resource managers responded to the policy signals they were sent by adopting client relationships with their commercial counterparts. The public interest was to be served by serving a collective of private interests. And while the policy signals have become distinctly mixed with conservation messages in the past twenty years, the client relationships endure, embedding the status quo, resisting pressure to change practices.

Subsidies are often just as firmly embedded, reinforcing the status quo ante, slow to respond to changing signals. The subsidies can be as open as land

grants and loans that are interest-free or freely forgiven. They can be more subtle: power-at-cost for irrigators and aluminum plants. They can be more subtle still: reservoirs that lift and carry water nearer an irrigator's fields, at no charge.

Resource managers are given ambiguous agency mission statements that mix support of commercial activities with conservation. But agency budgets are often associated directly with the commercial, income-producing side of the house. Fish and wildlife departments are supported by license fees; forest management is linked, albeit indirectly to timber revenues; and power administrations are supported by power sales revenues. It is the courageous and usually short-tenured agency head who will consistently act to reduce agency income.

(c) *Fragmented management jurisdictions and missions*: A watershed's upland flora and fauna, riparian area, stream structure, hydrology, and biotic integrity are a single system in nature. Disconnect the parts and the whole unravels. Variety is essential to biological systems; fragmentation is inimical. From the perspective of meeting human needs, however, each element is best managed separately and targeted to different purposes. Forest productivity is judged on a delivered board-feet basis. Fishery managers seek maximum landed pounds of salmon or angler days. Hydropower requirements are best served by water in the river, held in reservoirs for periods of maximum electric demand, managed to meet electric load curves in cities hundreds of miles away; while irrigated agriculture benefits from water taken out of the river and spread on fields, to return on a schedule not synchronized with power dispatchers.

The problem is not only that these uses are at cross purposes with each other; a certain amount of compromise and jostling for position mitigates some part of this for the agencies and users, if not for the river. More difficult to offset is the incentive each user has to externalize costs to other users, or simply to impose on that most politically inept of claimants, the ecosystem. Thus, the forest manager might be inclined to leave more trees in riparian areas if she knows that this will result in stronger salmon runs. However, if the consequence of the manager's action is not stronger runs, but more fish for salmon fishers to harvest, the incentive to leave more trees disappears. Salmon, and other species that rely on the same ecosystem, are left with the costs passed on by both forester and fisher.

Coordination of management goals and actions is difficult at best, even within a single user set. An Idaho-bound Columbia River salmon may pass

through more than a dozen different fish management regimes on its return from ocean to natal stream, and many more land and water management regimes.

Two federal agencies—the Corps of Engineers and the Bureau of Reclamation—operate most of the large hydropower/flood control/irrigation dams on western rivers, sharing some responsibilities with federal power marketing administrations. There is no logic to this division of authority, just historical inertia. Complex and ingenious agreements exist to coordinate the decisions and demands of the agencies (and those of non-federally-owned dams as well).

But there is only polite as opposed to close cooperation between the river managers (including also non-federal dam operators, and BC Hydro in British Columbia) and the two federal agencies—the National Marine Fisheries Service and the Fish and Wildlife Service—charged with implementing the ESA for Columbia River fish.

And there is only the loosest of connections between this river management structure and state administration of water rights. This most direct of interactions—the water is either in the river or out—exists without formal management linkages. As the conflicting claims approach and overlap each other, it is the party in between—the river ecosystem—that suffers water deprivation first.

The ill effects of fragmentation can be overstated, of course. Acknowledging the interconnectedness of all things can be a short road to paralysis. There are no bright lines between ecosystems; they exist only by overlapping and interacting with other ecosystems. Columbia River salmon travel from Idaho to international waters off the Aleutian Islands where they intermingle with fish from Russian East Asia. Where does their ecosystem begin and end?

While ecosystems resist boundaries, people have to manage their interactions with the surrounding environment. In order to do so, they have to define it in segments small enough to be intellectually manageable.

More particularly, the larger the management unit the more distant the manager will be from the consequences of his choices. In any large human institutions, whether corporations or government bureaucracies, outcomes suffer when feedback loops are stretched too far. In the case of river ecosystems, chances are the watersheds will suffer as well. So will the people who live there.

The challenge for national resource policy is to orchestrate local actions in ways consistent with ecosystem functionings; and to reorder antiquated national and state policies to conform.

(3) Balance

By the last quarter of the twentieth century it had become clear that the Progressive Era conservation strategies of Theodore Roosevelt and Gifford Pinchot were only succeeding in the narrow sense of stretching resources for harvest. They grew more trees; they did not protect forests. The emerging science of ecology took a different approach. It taught that species and their life support systems are interconnected in complex linkages and feedback loops; and that species survival was closely associated with species and habitat diversity.

Ecological science is generally accepted now as the best, and most useful, explanation of how biological systems work. But there is always lag time between a step forward in scientific understanding, and modifying human practices and institutions to conform. Hence the uncomfortable middle ground natural resource public policy occupies today, variously expressed as "multiple use" of resources; as "balance" between human consumption and the requirements of natural systems; as "equal" or "equitable" treatment for conservation of species and habitats.

Environmentalists often argue that there is adequate basis in laws that employ these terms to protect species and systems, if only there was the political will. This argument may score debating points but it seems sadly beside the point. These laws are poor protection precisely because they provide policymakers no clear ecological guidance, turning the debate into a contest between conflicting interests. Weak species and endangered habitat are defined as one interest among many, competing for resources as state agencies may compete for budget dollars. On such terms, species will consistently lose.

Why? First, because while natural systems are familiar with terms like "balance" and "equilibrium," they do not understand "compromise." Unlike contests for budget shares or tax breaks, natural systems have thresholds that must be respected for species to survive. If summer stream temperatures are persistently at 80 degrees and fish mortality is pandemic above 68 degrees, splitting the difference does little good.

Second, in such contests the status quo is the presumptive outcome, unless a sufficient and affirmative case for change can be made to political leaders. After one hundred eighty years of intensive development of rivers and riverine habitat, the status quo is not in ecology's corner.

Third, if humans are the judge and jury, human needs will carry more weight. That is why species with commercial or aesthetic appeal to humans do better in these proceedings. If our policies were farsighted enough to understand the importance to human destinies of preserving natural systems, this impulse would reinforce the argument for protecting rivers and other natural systems. But human needs tend to focus two generations ahead at most. Natural cycles, and the consequences of human interference in them, can extend far beyond this near horizon. Species extinction may be the outcome of development of a housing project that will be abandoned within a hundred years, but the extinction is not recallable.

Fourth, in forums of public policymaking, arguments and effects which are imprecise, hard to quantify, diffuse over large expanses or remote in time, are valued less than the precise, the immediate, the quantifiable. The immediate consequences of shifting flows away from power for irrigation use and back toward the natural hydrograph are higher costs and lost revenues to economic users. The benefits to the river ecosystem may not manifest themselves for decades, and then be hard to disaggregate from the other variables that comprise the biology and hydrology of a river. They may not materialize at all, being compromised by economic demands (e.g., harvest) elsewhere in the system.

Thus the reliance on economic analysis increasingly favored by conservationists to attack historical subsidies to river users is a two-edged sword. Unsupportable subsidies should be challenged, to be sure, by conservationists and fiscal conservatives alike. But while economics is capable of an expansive view of time, generally it favors near-term benefits over more distant ones, and fully weighs near-term economic costs against discounted future ecological benefits. It enforces this preference by basing its discount rates on short-term market information. And while rivers and watersheds benefit from the higher value recreation users place on healthy rural and wilderness areas, the economic contest is still stacked in favor of consumptive uses.

By the same token, incremental consumption is favored by short-term cost/benefit analysis. The benefits of an additional acre-foot of water withdrawn from a river are immediate, visible, and tangible. Crops grow

where crops did not before. Jobs and wealth are created. New income is spent, sending secondary economic benefits rippling through the community. The incremental adverse effect on the river's health is invisible, and likely immeasurable. In time, cumulative effects can be discerned, but by then each incremental use has acquired a status quo protection: a water right; a grazing right; a boat landing.

And as it was difficult to defend the river against each individual new claim, it is equally hard to prove an ecological benefit from each recovery step. One willow planted, one cubic-foot-per-second of flow restored, may be an essential step but its benefits are lost in the background noise.

When cumulative analysis is most revealing, fragmented management can be most destructive. Resource managers may be in possession of damning evidence of cumulative impacts, but without a broad view of the ecosystem, they are allowed—maybe compelled, by law and by constituent pressures—to continue incremental allocation of the resources in their charge.

At best, a management strategy based on "balanced" use gives resource managers ambiguous and conflicting signals, placing them in unwinnable conflicts between conservationists and economic interests. While some parties prosper in such circumstances, leveraging ambiguity with political or economic muscle, most people, including ranchers and farmers, environmentalists, forest managers, and hydroelectric engineers, are simply frustrated. Frustration fuels emotional debate, exaggerated argumentation, demonizing of one's opposition. In the absence of cooperation and conscience, the river suffers.

(4) The Development Model Reexamined

Much of the principled basis for the development model was to achieve order and equity in the use of natural resources. It provided a means of conflict avoidance and conflict resolution. By the late twentieth century water had been overappropriated, forests overharvested, and ecosystems overtaxed in many western water basins. The development model is not as useful anymore in dividing up scarcity, not at least until it comes to terms with the competing model of ecological conservation. As scarcity intensifies, as pressure mounts to return to the rivers some of what has been taken out, user risk and uncertainty increase. Urban and recreation interests put

pressure on rural communities. Other sections of the country put pressure on the west, whether to respect environmental values or to displace public subsidies.

Traditional allocation policies have been displaced by lawsuits as a means of conflict resolution, an evolution satisfactory to some lawyers but few others. Litigation can too often be a temporary and inconclusive fix, decided on grounds that are too narrow and technical to give clear policy guidance, and based on law that itself may be equivocal and weak at reflecting society's changing values. For every *Brown v. Board of Education*, there are a hundred decisions that only encourage the parties to continue battling. The courts themselves are often frustrated, trying to interpret the conflicting signals from Congress.

Meanwhile there has been a shift in values as the growing urbanizing west seeks new water supplies but also an enhanced environmental quality of life. And while there are as many water quality problems in urban areas as there are in rural ones, the urban vote will likely decide the disposition of both. Urban environmentalists and tribal interests with access to these voters are seeing their own influence increase correspondingly. The new players are frustrated by (1) the closed historical circle of agency and commercial clients from which they are excluded, and (2) laws that fail to reflect environmental values, or are maddeningly equivocal. Moreover, urban and recreation interests are usually willing and able to pay more for the water, either for use or to leave instream. When they discover their economic muscle is being thwarted by subsidized uses, pressure to end the traditional subsidies of the development model mount.

Growing acceptance of the lessons of ecosystem science has undermined the development model. The water quantity and quality standards that condition new water withdrawal rights are increasingly linked to a stream's biological health. Impacts on stream ecology may be employed to critique and condition riparian and upslope land uses. Protecting species means protecting habitat, and a species habitat may mean more than the field adjacent, or even the feeding territory. Protecting steelhead habitat may mean intervening to reduce stream temperatures miles above a structure that blocks anadromous fish passage. Protecting estuarine habitat may entail flow releases from dams hundreds of miles away. Federal and state protections are not so comprehensive as this today, but such comprehensiveness is implicit in public policy's tentative embrace of the new science.

Resource management decisionmaking will also be deeply affected. The greatest weakness of ecosystem science—its imprecision—ultimately may be its greatest strength if it forces us to confront the question of burden of proof. Presently that burden is carried by those who challenge an existing or new economic use of a river, to prove conclusively that an unacceptable injury will be inflicted on aquatic species. Ecosystem science is rarely able to be so precise; there are too many variables and the time frames are too long. For that reason, and if the objective is to protect the minimum threshold conditions that support a species (or better, a river ecosystem), the burden of proof will have to be shifted. If the evidence is inconclusive, a margin of error is needed to protect the species. The more difficult the proof, the greater the margin of error must be. New and existing river uses that cannot bear that burden will be called into question.

Ecosystem science will be a challenge also to states and agencies that take refuge behind their political and jurisdictional boundaries. To the extent these parties agree that a river is an ecosystem and must be treated as such, there will be little principled basis left for a state to assert exclusive jurisdiction over water within its boundaries. It may still be the primary river manager inside those walls, but subordinate to a basin-wide body of understanding about how the river ecosystem functions from its headwaters to its ocean discharge, and throughout the lands it drains.

The traditional separation of uses and managers is already coming under pressure from concerns that cut across traditional lines of authority. A state water allocation that protects the user's absolute right to a certain quantity of water may be conditioned by federal Clean Water Act quality provisions. The user may be obliged to leave water instream to meet these quality provisions.

Tribal treaty rights to have harvestable runs of fish may force other river users, such as power consumers, to shift water stored in reservoirs from power generation to fish flows, and to accept the resulting higher power costs. Tribal water claims in states such as Idaho have the potential to tie up the adjudication process to such a degree that they may compel settlement on terms favorable to the tribes' priorities.

The Endangered Species Act has become the most relied upon, and by many the most widely disliked of these crossover tools. Even if the ESA may not directly modify a state's water allocation policies, a community could choose to increase instream flows as a tradeoff for easier grazing rules on federal allotments.

None of this means the imminent collapse of the development model. It is deeply entrenched in the balance sheets of many users who will defend it vigorously. And it has been a highly successful tool for achieving equity and efficiency in allocating water and other western natural resources. The model has resulted in deep injury to rivers and other ecosystems. If it were modified by an ecological overlay—a kind of prior claim for ecosystem protection—and if some of the clutter of subsidies were cleared away, it could then set about doing what it has done effectively for many years: ordering human uses equitably and efficiently.

(5) The Ecological Model

The organization and tasks of a new river basin governance model are implicit in the foregoing discourse. However, they are easier to state than they will be to deliver.

The ecological model is organized along watershed boundaries. While there are other plausible ways to structure the model, just as there are multiple overlapping ecosystems, none of them has the combination of practicality and intuitive logic that watersheds do in the mostly arid west. This means that the model must be a bioregional overlay to existing lines on maps and agency mission statements. Not simply a federal overlay, however; its legitimacy must derive from more than federal fiat. State and tribal sovereign authorities over land use, water allocation, and harvest need to be integrated with federal resource objectives and powers. There is an exchange of sorts that must be made: dominance over a part exchanged for shared authority over, and responsibility for, the whole.

The model begins with a statement of priorities. The first priority is public safety. Even communities that will accept an economic cost in exchange for protection of the watershed commons will not accept floodwaters coming in the front door. Flood protection cannot and should not be absolute—perhaps those who persist in building in identified flood plains should bear the ensuing risks—but reasonable protection of life and property can be stipulated.

The second priority is conservation of the biological health of the watershed. Ecosystem science must be relied upon to establish the necessary threshold values for land and water quality and quantity. Where uncertainty exists, the benefit of the doubt should go to an extra margin of safety for the species

or ecosystem. The objective is to rebuild and reconnect ecosystem parts into a self-sustaining whole. Stated another way, it is to rebuild and conserve our endowment of natural resource capital.

The third priority is economic uses of the watershed. These may be allocated as they are now, using existing and familiar institutions and tools. However, the accumulation of subsidies that has grown up over the years should at least be reexamined. Some subsidies might be reauthorized if there was a consensus public purpose served, and if the benefits retained would not imperil conservation objectives. Parties whose subsidies are to be extinguished may be entitled to transition assistance.

Implementation of priorities should rely on a kind of federalist framework, with tasks gravitating to that level of policy and management closest to the watershed that is appropriate. For example, the task of increasing instream flows and water quality may involve a choice to line an irrigation ditch or reduce withdrawals. The decision might be made by the landowner, alone or in consultation with a local watershed council of citizens, local government officials, tribal representatives, and others.

On the other hand, establishing a flow and temperature regime for the stream might be the collaborative product of state and local officials, acting consistent with a federal set of flow and temperature default standards. Thus, expectations would be clearly stated as to outcomes, with as much local discretion as possible to ways and means. Local watershed activities would be nested within sub-basin and basin-wide frames of reference, as well as in the preexisting parallel framework of local, state, federal and tribal governments. A basin-wide conservation plan would be relied upon to orchestrate, not prescribe, efforts at all levels.

Mainstem capital and operational decisions would be assigned to a central river basin council of sovereigns, with provision for dispute resolution and protection of treaty rights when appropriate. The council could be established by federal statute as an intergovernmental compact.

At all levels, independent scientific and technical review would be required to validate choices, and to monitor and evaluate outcomes. This review would also be extended from headwater sub-basin to full river basin.

The sovereigns would commit to using their full legal authorities to carry out the decisions of the council, and would be held to this obligation under the

terms of the statutes establishing the compact. Both decisions and implementation, or failure to implement, would be judicially reviewable.

Funding for watershed improvements should rely first on a user-pays principle, then on a cost-sharing model that could be modeled after federal cost-sharing for highways.

Federal and state governments would need to adopt overriding or conforming legislative language to align agency missions to watershed priorities. As a logical but not essential step, some agencies (e.g., federal river managers) might be reorganized and consolidated into basin-specific entities accountable in a distinct line of authority to their respective capitals.

This proposal for a watershed ecosystem authority overlaid on existing jurisdictions may be viewed as radical, or excessively ambitious, or hopelessly complex. It could be all of those things, but it need not be. The only feature that stretches current practice is the incorporation of the tenets of ecosystem science in the model's priorities. Even for this component the Endangered Species Act serves as precedent; but the ecological model shifts emphasis to ecosystem rather than species protection.

Special districts for special needs are a common feature of American governmental architecture. Regional planning and service districts for distinctly regional needs, such as transportation, are found in many urban areas where growth has made former boundaries antiquated or counterproductive. These services may be funded through assessments to each constituent government, or in some cases by granting taxing authority to the new regional entity.

Of course there is a long and checkered history of river basin commissions by various names, most devoted to supporting the economic development of their watersheds. But there are direct precedents for multi-state forums, by compact or otherwise, operating on a landscape scale across state boundaries, to conserve natural features such as the Chesapeake Bay and the Great Lakes. And on the Columbia River, the Northwest Power Planning Council is directed by Congress to tend to the needs of ". . . the (Columbia) river and its tributaries as a system," enhancing fish and wildlife and rebuilding salmon runs while maintaining the hydropower system's productivity.

Finally, there are experiments in managing and restoring watersheds on a collaborative basis to be found all over the west. These experiments are

scaled down to their needs and their watersheds, but some of them possess in miniature the structure, the orientation and the commitment needed no less badly by the larger western water basins. The watershed councils have grappled with problems of parochialism and sharing of authority. They have had to prod and persuade and coerce local economic interests invested in the status quo, reluctant to contribute back to the common good. These local watershed councils have not always passed their tests with flying colors, but they have had enough success to embarrass regional policymakers who still evade the issue. One of the biggest hurdles for these watershed councils is precisely the failure of the larger basins to come up with a better governance model, leaving the local groups wondering if their best efforts will be vitiated by inaction elsewhere.

In order to translate this ecological model into a governance strategy and structure for the Columbia River Basin the following general principles of river governance may be
applied:[3]

1. The Columbia River and its drainage must be treated, conserved and managed first as an ecosystem, not as a basket of economic goods for division or sale.

2. Clear priorities should be established in statute: first for public safety (flood control), second for biological health of the ecosystem, and third for sustainable economic and other uses. All management plans and uses must conform to these priorities. Economic uses of the river will continue, benefitting from increased predictability of operations.

3. The priorities should be implemented through a statement of desired future biophysical river conditions that, when achieved, will describe a biologically healthy river ecosystem; and a plan for achieving these conditions in a timely fashion.

4. Governance of the important public values inherent in the river is the responsibility of the sovereign governments with public interests at stake: the Federal government, the four State governments, and the Tribal governments.

[3] Excerpted from A River Governance Model for the Columbia River (a policy paper issued by the Columbia/Pacific Institute, August 1996) (prepared for the Governor's Comprehensive Review of Pacific Northwest Energy Systems).

5. A meaningful river governance approach must include:

   (a) Authority: to carry out river restoration and maintenance plans—including river operations protocols—and cause others with authority to employ such authority consistent with the plans;

   (b) Responsibility: to plan and execute consistent with statutory mission and standards;

   (c) Accountability: to sovereigns from whom governance authority derives; and to statute as interpreted through judicial review;

   (d) Openness: all parties subject to and affected by governance decisions should have access to the decisionmaking process at all stages, and access to information that assures meaningful participation;

   (e) Funding: sufficient so the governance board can carry out actions within its authority, and leverage other resources into its plan implementation.

6. A river governance approach must observe and respect existing treaties and trust responsibilities of the United States—particularly those with the Indian tribes of the Pacific Northwest—and existing federal and state statutes.

7. River governance must unify, not divide river functions and management. Flows for power production, spills for fish passage, reservoir levels for irrigation and navigation, must all be integrated into one management protocol. A unified governing institution is necessary to accomplish this integration efficiently.

A further word needs to be said on the role of science, and of scientific review, in watershed governance. There are two prevailing patterns for integrating science into policymaking, neither of them entirely satisfactory.

The first comes through the interaction of competing views of the biology and hydrology in the public forum of ideas. Sometimes these differences are expressed in disciplined and structured ways, through journal publication and critique. No less often, selective views or partial findings are advanced by those whose interests are served by a kind of advocacy science. This abuse of science flourishes particulary where the available evidence can

support probabilities but not certainties, and where such time horizons tend to be the most spacious: climate change is one such area and ecosystem health is another.

The second approach relies on the principles of adaptive management. In the presence of scientific uncertainty, a hypothesis is stated and management strategies are rearranged to test the hypothesis. Results may lead to policy changes, or to a refined hypotheses and further testing.

Adaptive management has been a useful but limited tool in rationalizing western river basin management practices. Fragmented authority has meant that agreement even on a hypothesis and protocols for testing it has been difficult to achieve. Responsible agencies may be reluctant to modify practices necessary to carry out the test. Where an outcome is the product of multiple ecosystem forces, it is often not possible to isolate on one variable and hold other factors constant. Where effects may only become apparent over decades, agency commitments, patience, and consistency may erode. And where testing hypotheses may have large financial or political costs—decommissioning a dam to test migration at natural river levels—the tenets of adaptive management meet a resistance quite as immovable as the dams themselves.

Without abandoning the scientific method of hypothesis testing, are there other roles that science can profitably fill? There are, but first scientists must subdue there impulse to become policymakers also. Watershed science in service to public policy goals is most useful when it is—and is perceived to be—independent of interests advocating one goal over another. Scientists must be truth-sayers and truth-testers, affirming or critiquing the evidence and interpretations without regard for interests affected, costs, or societal consequences (which are the providence of policymakers).

A second role for science is to describe the conceptual framework—the discipline of a structure of physical facts and relationships—within which public policy must operate. Science must describe how hydrological and biological systems functioned in a pre-modern world, how these systems have been modified, and what the consequences have been. Scientists must then tell policymakers, within explicit probability limits, the likely consequences of proposed remedies.

A third and perhaps most critical role for science is that of intermediation. Science that carefully preserves its independence becomes a sort of common ground to which parties of differing views but good faith can repair. The

more informed these parties become in what the science can and cannot tell them, the more they will find themselves curiously captive to that understanding, less free to engage in the polemical excesses of the uninformed. They will find themselves searching together for solutions within science's conceptual framework, and finding them.

(6) Impediments

A better understanding of how watersheds function does not automatically result in better watershed choices. There are lag times between the revelations of science and their incorporation into human belief systems and institutions. The development model has had one hundred eighty years to wrap its roots deep beneath the granite upthrust of the Rockies and the basalt flows of the Cascade plateau. The Endangered Species Act has unnerved many people but saved few species and fewer ecosystems. The edifice of western water law has been often assailed but in truth has barely budged. Interestingly, while efforts to modify it flounder in legislatures and in the courts, watershed councils and water trusts are experimenting with market mechanisms such as water leases that may come through the back door to rationalize the state allocation process.

Changes in watershed management and priorities face not only institutional inertia but active resistance from the many interests vested in the status quo. Irrigators stand to lose much in a world where users pay, where subsidies are withdrawn, and where ecosystem needs establish a prior claim. Barge transport could lose business to railroads if government-sustained slackwater navigation is interrupted.

Wholesale customers of hydropower systems such as the Bonneville Power Administration (BPA) and Western Area Power Authority (WAPA) have been among the most resistant to river fixes. Their opposition has noticeably eased as the dramatic restructuring of power markets has given many of these customers low cost alternative suppliers. Many now appear more interested in opening federal transmission grids than in wrestling fish for stored water. Other power customers remain deep in denial that their world of low cost federal electricity will ever end. For these customers, insisting on conclusive proof that changes in hydropower operations will benefit river ecosystems is their first defense. It is a form of denial in the face of accumulating evidence, like denying the association of cigarettes and cancer. But it is potent opposition nonetheless.

For some parties the governance debate remains a contest for control. The Governor of Montana pulls out of a National Marine Fisheries Service-sponsored forum for deciding Columbia River operational issues, arguing that Montana was unable to halt the drafting of its reservoirs for salmon flows. The Governor prefers the Northwest Power Planning Council, controlled by the states. The Governor legitimately resents federal control of the river, but his answer—states' control—is no improvement. Fragmentation encourages contests for control, and discourages collaborative agreement. Perhaps the Governor could offer a trade: power-sharing by the federal government on river management decisions for deference to standards of ecosystem science.

Now the Indian tribes of the lower Columbia have followed the Governor's lead and withdrawn also. Their policy differences with the federal government are different but their process objection is the same: they are invited to discuss but not decide. They would prefer an ongoing federal court proceeding where their treaty rights would afford them more control.

The tribes may be the least empowered of the parties to this Columbia River minuet, but they are no less equivocal about changing governance rules and structures. Although the four states have at various times been supportive of tribal concerns in certain situations, the tribes do not trust the states. And while many tribal leaders are unhappy with their treatment by the Clinton Administration, they are protective of their relationship with the federal government and its trust and treaty obligations to them. Their leverage comes from their treaties and their management role in harvest, but only under the most extreme provocation will the tribes risk an adverse federal court ruling on treaty rights. Every year fewer salmon return to be harvested by Indian fishers, and every year river habitat deteriorates further. But while the substance of their rights dwindles, the tribes remain conservative, unwilling to risk the limited leverage they have in a gamble to have more say in a better governance process.

At one level the tribes and other interests share similar outlooks. There is a perverse comfort level with familiar fights, familiar foes, and the usual arsenal of regulation and litigation. Debates about drawing down reservoirs or sharing water between states take place with known adversaries on familiar terrain. Despite the evidence that the laws and institutions are dysfunctional and appear unable to do anything other than perpetuate the status quo, and that changes in them are coming slowly when they are not regressing, there is little appetite for a fundamental challenge to the way

decisions are made. The parties are curiously conservative when confronted with process changes, more fearful of losing leverage than hopeful of better decisions.

Economics and market theories are unlikely to move the process forward. Even if water pricing were suddenly rationalized and subsidies vacated wholesale, market economics will still support status quo uses. Crops, power, and transportation services all have immediate market value. Ecosystem restoration will have economic value in time, but near-term it is a net-outflow proposition. Stronger salmon runs would likely result from actions, such as deep reservoir drawdowns, that seek to restore normative ecosystem functioning in the river. But the near-term costs in lost hydropower sales and capital modifications to the dams will offset any gains for many years.

(7) Incremental Steps

Notwithstanding the entrenched resistance to governance changes, and the preference for narrow solutions to immediate problems, there is still value to forcing the governance debate. Incremental changes will occur as a conscious effort to improve cooperation, a maneuver to deflect regulation, a grab for control, or an unintended consequence of a technical fix. The Memorandum of Agreement/Cooperative Agreement on the Platte River is an example; the merging of state and federal science panels on the Columbia is another.

To be sure, the governance debate over a “best” end result can be the enemy of a “good” incremental step; or it can shape and inform such steps by providing context. Careful explication of what might be kept and what might be discarded from the development model, and of what would comprise an ecosystem model can create a kind of glide path to a desired future outcome. That path, that framework, can then be used to distinguish between actions that advance along the path and those that deviate from it.

We can opt for change that:

- gives not equal but priority treatment to protecting ecosystem functions when competing against new or existing economic uses;

- builds collaborative management institutions and tools as alternatives to litigation and other, narrower processes; that offers rewards, including access to decisionmaking for parties that have been excluded in historical allocations of control;

- consolidates agencies with overlapping missions, or integrates them through special ecological "district" strategies overlaid on and congruent with watershed boundaries;

- avoids further locking in of watershed uses and effects (e.g., new water rights; unregulated access to ground water supplies; new long-term FERC licenses or relicensings; Habitat Conservation Plans) without a test of ecological effects; and any new rights that are issued should be subject to modifications to reflect new scientific findings;

- increases access to resource decisionmaking by non-traditional stakeholders; and educates all stakeholders in the teachings of ecosystem science;

- shapes an intermediating role for ecosystem science and scientists in decisionmaking processes at all levels;

- employs ecosystem science to set thresholds for habitat conservation and use; and to serve as a conceptual frame of reference for measuring actions and consequences;

- identifies and seeks to resolve inconsistencies between prevailing policies and practices on the one hand, and ecological structure and functions (e.g. the surface/subsurface water disconnection; separate regulatory regimes for water quality and quantity) on the other;

- rationalizes water economics, creates tools to facilitate not just intrastate but basin-wide water transfers (e.g., water leasing, water pools and banks, water market makers), and phases out subsidies that have outlived their public usefulness;

- transitions and cushions traditional communities facing especially harsh or precipitous change from historical circumstances;

- develops predictable and durable sources of funding for watershed restoration needs.

One of the reasons institutional change can be painfully slow is the fear of unilateral concessions that are neither matched nor returned. When adversarial parties are seeking the slightest advantage in legal and political leverage, it seems foolhardy to make gratuitous gestures and rely on the other party not to take advantage. Yet in smaller watersheds where the interests are individuals, sometimes neighbors across a table, these gestures are being made and answered. Where expectations can be personalized instead of conveyed by lawyers and public relations consultants, it is harder to take advantage and still show up for coffee at the local cafe the next morning. Especially when people can use watershed science as a kind of referee, an independent interpreter of the rules, they may discover common ground that leads to home-grown solutions. Pride of place also becomes a basis for trust and confidence-building. The Wallowa County Court and the Nez Perce Tribe are remarkably united in their distrust of federal agencies and other institutional outsiders.

It is far harder for large western water basins to build on personal relationships. Elections, changes in administrations, professional mobility, the impersonal nature of large institutions and the law as an abstraction, all interpose between people. But the use of science, and the success of unilateral small steps taken and repeated, should encourage parties to search out low-risk ways to emulate their colleagues in small watersheds across the west.

(8) Conclusion

So the best and final counsel is . . . to inch along? That incremental gains are the only practical gains? That's not a satisfactory conclusion. The threats to the hydrological and biological sustainability of western waters are real and immediate. Change must come fast enough to rescue distressed food webs and disappearing species.

If we are persuaded that there is a fundamental mismatch between existing institutions of river governance and the ecology of watersheds, then we are bound to offer a plausible alternative, and we are bound to promote it vigorously.

This may have the welcome effect of accelerating the pace of incremental change. But it is also to prepare for the eventful moment, the window that opens from time to time as personalities and political forces briefly align and allow momentous change to take place. In such a moment the national park

system and the Forest Service were created, in another, the Endangered Species Act was adopted. At those moments the opportunities are greatest for those who have prepared.

Appendix

Key Features of a Columbia River Governance Proposal

Appendix

Key Features of a Columbia River Governance Proposal[4]

Several key features define a Columbia River governance proposal and are necessary for the proposal's adoption and implementation.

1. The proposal must establish priorities for Columbia River Basin management and conservation, and Columbia River Operations in the following manner:

   (a) The first priority, public safety (flood control) involves adopting a "hundred-year rule curve" or other appropriate standard and reducing reliance on impoundment strategies.

   (b) The second priority, for restoration of a biologically healthy river and recovery of fish and wildlife populations involves setting standards including (a) anadromous and resident fish populations restored to harvestable levels consistent with treaty obligations, and (b) no net loss of biological/species diversity. Tribal goals and objectives are to be included in this determination.

   (c) The third priority is for other uses.

2. The proposal will incorporate standards, identify desired future conditions, and develop a plan. The priorities above, and the biophysical and procedural standards with which the Board's plans and actions must be consistent should be enunciated in a statute. The Board will then adopt a statement of desired future biophysical conditions which, when achieved, will describe a biologically healthy river ecosystem. Finally, the Board will adopt a plan for attaining these conditions that integrates existing federal, regional, and tribal plans.

3. The proposal will establish, as an intergovernmental compact, a single governance board of sovereigns. This board will consist of two federal members, four state members, and two tribal members. The board will perform the governance mission and exercise the delegated authorities.

   - Specific authorities would be delegated to the new governance board (which would evolve from and replace the Northwest Power Planning Council and the NMFS-sponsored Implementation Executive Committee) to guide and oversee federal agency land,

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[4] Excerpted from A Governance Model for the Columbia River (a policy paper issued by the Columbia/Pacific Institute, August 1996) (prepared for the Governors' Comprehensive Review of Pacific Northwest Energy Systems).

water, and natural resource management actions, including river operations and federal hydro project modifications; and coordinate federal with state, tribal, and local community actions. Federal resource management agencies operate consistent with Board river policy unless otherwise directed by the President.

- Dispute resolution available to any three members. Where treaty rights are at issue, any tribal board member may invoke dispute resolution.

- Customer/end user and fish advisory committees would be established to assist the Board and Bonneville Power Administration in addressing power and fish questions.

- An advisory science panel (ISAB) would be established to provide scientific (not policy) critique of plan.

- An economic review panel would be established to provide economic (not policy) critique of plan.

- The decisionmaking and implementation process would involve full public information and access.

4. The Bonneville Power Administration (or successor agency) will be retained subject to Board direction.

   - BPA, the Corps of Engineers and the Bureau of Reclamation are directly accountable to the Board in the exercise of their Columbia Basin responsibilities, subject to Congressional appropriations process (ALTERNATIVE: Create single successor agency to the three for Columbia Basin responsibilities, subject to Board authority).

   - Administrator responsible for agency operations (except for fish & wildlife program), is subject to Board oversight and direction.

   - If three federal agencies are retained, direct control over power operations (including capital investments) at federal hydro projects will be shifted from the Corps of Engineers and the Bureau of Reclamation to Bonneville Power Administration or its successor agency; customer/end user advisory committee assists with power-related actions.

5. The Board is responsible for approving BPA's/successor agency's overall budget, for developing agency's fish and wildlife budget, and for approving (subject to federal review) agency's debt financing.

    - Agency's base budget includes fish recovery costs and commitments to public purposes.

    - Revenues available net of costs are allocated in quarters, to: 1) accelerated Treasury repayment; 2) accelerated fish measures; 3) accelerated public purposes, 4) customer dividends.

    - Revenue shortfalls are met first by adjusting rates (within limits), and by assessment of exit fees, then by deferral of Treasury payments. If such deferrals occur, any subsequent available revenues net of costs are applied first to restore the schedule of Treasury payments.

    - Customer liability for higher costs due to direct fish recovery outlays or derating of the hydropower system is limited, and shared with the Treasury. Access to subsequent customer dividends is reduced commensurately (and surrendered entirely at termination). Exit fees still apply.

6. Treaties between the U.S. government and Indian tribes, together with federal trust responsibilities to tribes and tribal members, remain unaffected under this proposal.

7. Other federal, state, and tribal statutes, treaties, and authorities are unaffected except for the obligation to exercise available discretion to conform with and implement as fully as possible the Board's Basin Plan.