

**Federal Columbia River Power System Biological Opinion
Overview of the 2014-2018 Implementation Plan
as informed by the 2013 Comprehensive Evaluation**

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Bonneville Power Administration
Bureau of Reclamation
U.S. Army Corps of Engineers

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The U.S. Army Corps of Engineers, the U.S. Bureau of Reclamation, and Bonneville Power Administration are the three federal “Action Agencies” with responsibilities for the coordinated operation and maintenance of the Federal Columbia River Power System (FCRPS) and the implementation of NOAA Fisheries’ 2008 FCRPS Biological Opinion (BiOp) and 2010 Supplemental BiOp. As required by the 2008 BiOp and Reasonable and Prudent Alternative (RPA), the Action Agencies have developed two reports on RPA implementation: a Comprehensive Evaluation (CE), which provides a “look back” at the Action Agencies’ RPA implementation from 2008-2012 and progress toward BiOp objectives, and an Implementation Plan (IP), which provides a “look forward,” describing the RPA actions that will be implemented from 2014-2018 to achieve BiOp objectives. In addition to satisfying the Action Agencies’ RPA reporting responsibilities, these documents facilitate NOAA’s development of a supplemental 2014 FCRPS BiOp, as required by court order.¹

This Overview provides context for these two reports, including background on the current Endangered Species Act (ESA) consultation for the FCRPS and the Action Agencies’ comprehensive, multi-strategy program to address effects of the operation and maintenance of the FCRPS on ESA-listed species and designated critical habitat.

Consultations Under the Endangered Species Act

Section 7(a)(2) of the ESA requires federal agencies to consult with NOAA on the effects of their actions on species that are listed as threatened or endangered under the ESA, as well as the effects of agency actions on designated critical habitat for those species. Currently, thirteen different listed species (termed Distinct Population Segments (DPSs) or Evolutionary Significant Units (ESUs)) of anadromous salmon and steelhead have been added to the ESA’s list of Endangered and Threatened Wildlife, and NOAA has subsequently designated critical habitat for twelve of these thirteen listed species. Beginning in 1992, the FCRPS Action Agencies have initiated Section 7 consultations with NOAA on the effects of the operation and maintenance of

¹ *Nat’l Wildlife Fed’n v. Nat’l Marine Fisheries Serv.*, 839 F.Supp.2d 1117 (D. Or. 2011). By order dated November 8, 2013, the remand deadline was subsequently extended to January 24, 2013.

the FCRPS on these and other listed species and their designated critical habitat.² NOAA has issued biological opinions and incidental take statements on the operation of the FCRPS and related actions since that time.

ESA Consultation on FCRPS Operations for 2008-2018

The 2008 BiOp and RPA

In August 2007, the Action Agencies submitted two documents to NOAA: a Biological Assessment (BA), including an extensive package of proposed actions to address effects of the operation and maintenance of the FCRPS on listed salmon and steelhead and designated critical habitat,³ and a Comprehensive Analysis (CA). The Action Agencies developed the CA in response to a previous ruling by the United States District Court for the District of Oregon that NOAA develop a single integrated Comprehensive Analysis evaluating the effects on the salmon and steelhead lifecycle from the operations of the separate Upper Snake and FCRPS water management systems.⁴ Subsequently, NOAA developed a Supplemental Comprehensive Analysis (SCA), in which NOAA updated the analysis with the most recent available scientific data and information and additionally incorporated impacts from harvest in the lifecycle analysis.⁵

In May 2008, NOAA issued three separate BiOps for: (1) the operation and maintenance of the FCRPS (the FCRPS BiOp); (2) Reclamation's operation and maintenance of the Upper Snake projects; and (3) the *United States v. Oregon* Management Agreement for harvest of upper Columbia River fish runs.⁶ Each of these three BiOps are tiered off of the common analysis

² Additional listed species covered by the current FCRPS consultation include the Southern distinct population segment (DPS) of eulachon, the Southern DPS of North American green sturgeon, and the Southern Resident killer whale DPS. The current consultation also encompasses designated critical habitat for the Southern DPS of eulachon and the Southern DPS of North American green sturgeon.

³ In separate correspondence, the Action Agencies also consulted with NOAA on the effects of the operation and maintenance of the FCRPS on Southern Resident Killer Whales and Green Sturgeon of the Southern DPS.

⁴ *American Rivers v. NOAA Fisheries*, No. CV-04-00061-RE (D. Or.), Opinion and Order of Remand, Sept. 26, 2006, at 8.

⁵ NOAA Fisheries. May 5, 2008. Supplemental Comprehensive Analysis of the Federal Columbia River Power System and Mainstem Effects of the Upper Snake and Other Tributary Actions. 882 pp.

⁶ This management agreement was negotiated among the States of Oregon, Idaho, and Washington, the United States, the Shoshone Bannock Tribes, the Confederated Tribes of the Warm Springs Reservation of Oregon, the Confederated Tribes of the Umatilla Indian Reservation, the Nez Perce Tribe, and the Confederated Tribes and Bands of the Yakama Nation, under the continuing jurisdiction of the District of Oregon in Civil No. 68-513-KI (D.Or.).

found in the SCA, which comprehensively analyzes the combined effects of these actions on the listed species and their designated critical habitat.

The 2008 FCRPS BiOp included a recommended Reasonable and Prudent Alternative (RPA) that NOAA concluded was likely to avoid jeopardizing the continued existence of the 13 listed salmon and steelhead species and destroying or adversely modifying designated critical habitat.⁷ The RPA incorporated and improved upon the actions proposed by the Action Agencies in the 2007 BA. It consists of a comprehensive set of “All H” strategies to minimize the adverse effects from the operation of the FCRPS. For each “All H” strategy (hydro, habitat, hatcheries, and predator management), it identifies concrete actions to be implemented through an adaptive management framework by 2018, and it establishes measurable performance standards and targets that guide and inform RPA implementation. The Action Agencies subsequently adopted NOAA’s RPA in separate Records of Decision.⁸

Regional Collaboration in the Development of the BiOp

The Action Agencies and NOAA engaged in an intensive collaborative process with regional sovereigns, including states and tribes, to inform development of the 2008 FCRPS BiOp and its RPA.⁹ The contents of the Action Agencies’ 2007 BA and NOAA’s 2008 BiOp therefore reflect over two years of collaboration among the Sovereign Parties through the Remand Collaboration Policy Working Group, which included the Action Agencies, NOAA, the four Columbia Basin states and a number of tribes (see Figure 1, below).¹⁰ This regional process transformed the development of the FCRPS BiOp and implementation of the RPA into a unique collaborative effort. As a result, significant regional and scientific consensus has developed around the strategies contained in these documents.

⁷ In the 2008 BiOp, NOAA also considered the effects of the operation and maintenance of the FCRPS on Southern Resident Killer Whales and Green Sturgeon of the Southern DPS.

⁸ Bonneville Power Administration. August 12, 2008. [Record of Decision following the May 2008 NOAA Fisheries FCRPS Biological Opinion on Operation of the Federal Columbia River Power System, 11 U.S. Bureau of Reclamation Projects in the Columbia Basin, and ESA Section 10 Permit for Juvenile Fish Transportation Program](#). U.S. Bureau of Reclamation, Pacific Northwest Region. September 8, 2008. [Decision Document Following the May 2008 NOAA Fisheries FCRPS Biological Opinion on Operation of the Federal Columbia River Power System, 11 Bureau of Reclamation Projects in the Columbia Basin, and ESA Section 10\(a\)\(1\)\(A\) Permit for Juvenile Fish Transportation Program \(Revised and reissued pursuant to court order, NWF v. NMFS, Civ. No. CV 01-0640-RE \(D. Oregon\)\)](#). U.S. Army Corps of Engineers, Northwest Division. August 1, 2008. [Record of Consultation and Statement of Decision, NOAA Fisheries’ May 5, 2008 Biological Opinion, Consultation on Remand for Operation of the Federal Columbia River Power System, 11 Bureau of Reclamation Projects in the Columbia Basin and ESA Section 10\(a\)\(1\)\(A\) Permit for Juvenile Fish Transportation Program \(Revised and reissued pursuant to court order, NWF v. NMFS, Civ. No. CV 01-0640-RE \(D. Oregon\)\)](#).

⁹ *Nat’l Wildlife Fed’n v. Nat’l Marine Fisheries Serv.*, No. CV 01-640-RE, CV 05-23-RE (D. Or.), Opinion and Order of Remand, Oct. 7, 2005.

¹⁰ This collaboration has subsequently expanded, as discussed below, with additional tribal participation.

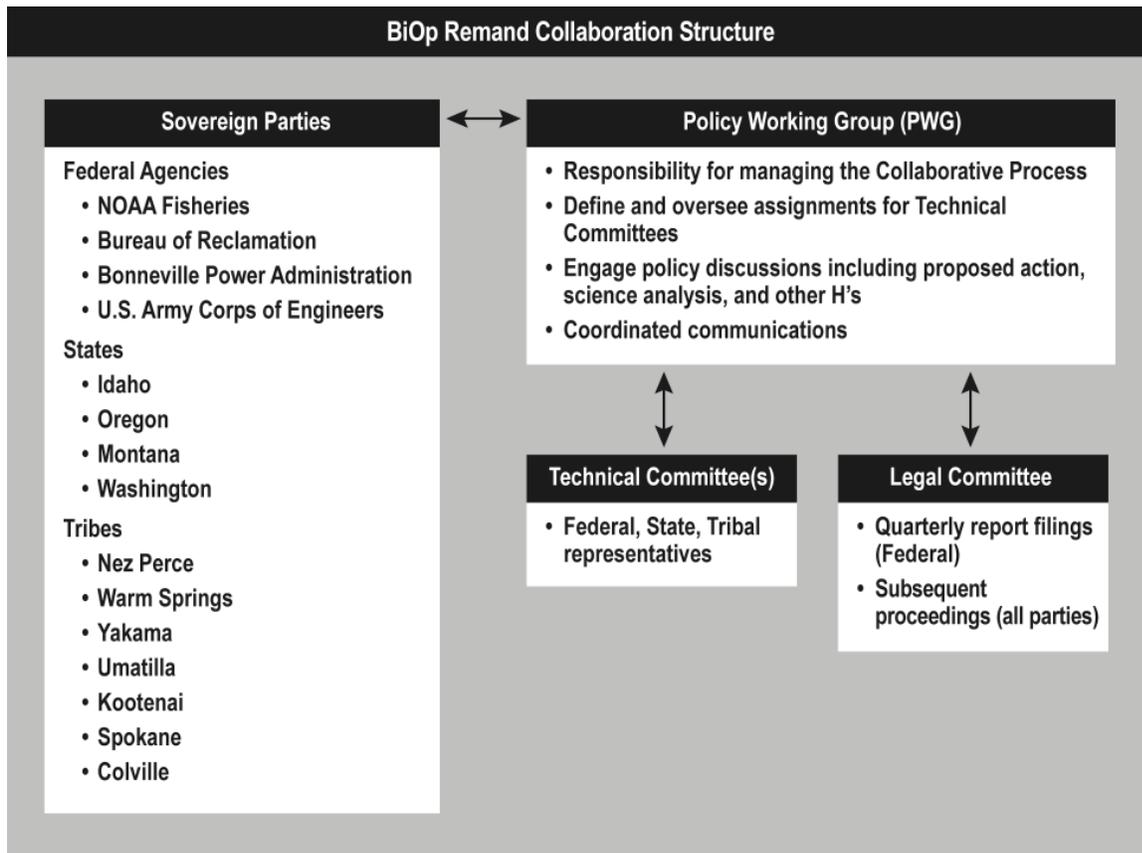


Figure 1. BiOp Remand Collaboration Structure. (Source: U.S. Army Corps of Engineers, Bonneville Power Administration, and U.S. Bureau of Reclamation, *Biological Assessment for Effects of Federal Columbia River Power System and Mainstem Effects of Other Tributary Actions on Anadromous Salmonid Species Listed Under the Endangered Species Act*, August 2007.)

Furthermore, this extensive collaboration spurred the Action Agencies to engage in parallel but independent efforts to negotiate agreements to enhance salmon and steelhead populations in the Columbia River Basin, which culminated in the formation of memoranda of agreement (MOAs) in 2008 with the States of Idaho and Montana, the Confederated Tribes of the Colville Reservation, the Confederated Tribes of the Umatilla Indian Reservation, the Confederated Tribes of the Warm Springs Reservation, the Confederated Tribes and Bands of the Yakama Nation, the Columbia River Inter-Tribal Fish Commission, and the Shoshone-Bannock Tribes of the Fort Hall Reservation, as well as an MOA with the State of Washington for estuary implementation in 2009. These agreements are collectively referred to as the “Columbia River Basin Fish Accords.” The Accords secure over \$900 million in BPA funding for habitat restoration and protection projects and other actions directly benefiting listed and other species in the Columbia River Basin over a period of ten years.¹¹

¹¹ This figure does not include appropriated funding provided by the Corps and Bureau of Reclamation, including the funding for the Columbia River Fish Mitigation program.

The 2010 Supplemental BiOp and the Adaptive Management Implementation Plan

After NOAA issued the 2008 BiOp, the Obama Administration, including senior leadership from the Departments of Commerce, Army, Interior, and Energy, as well as White House Council on Environmental Quality, conducted an extensive review of the scientific bases of the 2008 BiOp and underlying legal issues. This review led to the development of an Adaptive Management Implementation Plan (AMIP), which “enhanced and strengthened implementation of activities, research, and contingencies within the RPA’s adaptive management provisions” and “called for a more precautionary approach to address uncertainties about the future condition of affected salmon and steelhead, particularly out of concern for how climate change may affect these species and their habitat.”¹² NOAA concluded that the 2008 BiOp, as implemented through the AMIP and its enhanced and accelerated mitigation and research, monitoring, and evaluation (RM&E) actions, satisfies the requirements of the ESA.

In May 2010, NOAA issued a supplemental biological opinion that formally incorporated the AMIP into the FCRPS BiOp and strengthened the existing adaptive management provisions in the RPA. The 2010 BiOp also supplemented the FCRPS BiOp with new science and confirmed NOAA’s determination that the operation of the FCRPS through 2018 complies with the standards of Section 7(a)(2) of the ESA. The Action Agencies subsequently adopted NOAA’s 2010 BiOp in respective Records of Decision.¹³

The August 2011 Court-Ordered Remand

In August 2011, the District Court found that the 2008/2010 BiOp and RPA contains positive mitigation measures that provide adequate protection to the listed species through 2013, and it held that the BiOp shall remain in place and be implemented through December 31, 2013. During this time, the Court also ordered that spring and summer spill operations be implemented in a manner consistent with prior orders that adopted the U.S. Army Corps of Engineers’ annual Fish Operations Plan. The Court, however, remanded the BiOp to NOAA to

¹² NOAA’s National Marine Fisheries Service, Northwest Region, [Supplemental Consultation on Remand for Operation of the Federal Columbia River Power System, 11 Bureau of Reclamation Projects in the Columbia Basin and ESA Section 10\(a\)\(1\)\(A\) Permit for Juvenile Fish Transportation Program](#), May 20, 2010, Section 1.2.

¹³ Bonneville Power Administration. June 11, 2010. [Record of Decision following the May 20, 2010 NOAA Fisheries Supplemental Biological Opinion to the May 2008 FCRPS Biological Opinion for Operation of the Federal Columbia River Power System, 11 U.S. Bureau of Reclamation Projects in the Columbia Basin, and ESA Section 10 Permit for Juvenile Fish Transportation Program](#). U.S. Bureau of Reclamation, Pacific Northwest Region. June 11, 2010. [2010 Supplemental Decision Document Following the May 2010 NOAA Fisheries Supplemental Consultation On Operation of the Federal Columbia River Power System, 11 Bureau of Reclamation Projects in the Columbia Basin, and ESA Section 10\(a\)\(1\)\(A\) Permit for Juvenile Fish Transportation Program](#). U.S. Army Corps of Engineers, Northwest Division. [June 11, 2010. Amended Record of Consultation and Statement of Decision on NOAA Fisheries’ May 20, 2010 Supplemental Consultation on Remand for Operation of the Federal Columbia River Power System, 11 Bureau of Reclamation Projects in the Columbia Basin and ESA Section 10\(a\)\(1\)\(A\) Permit for Juvenile Fish Transportation Program](#).

reconsider the sufficiency of habitat mitigation actions beyond 2013, and it ordered NOAA to produce a new or supplemental BiOp by January 1, 2014.¹⁴

In accordance with the District Court's remand order, NOAA and the Action Agencies continued longstanding collaboration with the regional sovereign entities, and the agencies continued to implement the RPA in concert with States, Tribes, and other regional parties. The Action Agencies also prepared 2010 and 2011 Annual Progress Reports and the 2013 CE describing progress in implementing the RPA provisions for the period 2008-2012, as well as monthly spill reports during the fish migration season documenting spring and summer spill operations. The extensive annual reviews, collaboration, and coordination efforts are integral to NOAA's renewed consideration of the FCRPS RPA and to the Action Agencies' continued implementation of the RPA.

The two reports addressed in this Overview (the 2013 CE, describing actions that were implemented during 2008-2012, and the 2014-2018 IP, describing actions planned for 2014-2018) are integral aspects of the court-ordered 2014 Supplemental BiOp. (For example, the IP describes [tributary](#) and [estuary](#) actions through the duration of the BiOp period; habitat actions were not identified for this period in the 2010 BiOp or the associated 2010-2013 IP.) Together, and combined with the 2007 FCRPS BA and CA, these documents present NOAA with the information needed to develop and issue the 2014 supplemental FCRPS BiOp.

RPA Implementation:

The BiOp RPA incorporates an "All H" approach that includes strategies designed to address and improve the salmon and steelhead life-cycle.¹⁵ There are 74 RPA Actions, which are categorized by strategy and provide an overarching framework for implementation.¹⁶ The RPA sets objective targets and timelines for increasing survival rates of fish passing the dams, managing water to improve fish survival, increasing juvenile and adult fish survival by protecting and improving tributary and estuary habitats, adopting measures to reduce the numbers of juvenile and adult fish consumed by fish, avian, and marine mammal predators, implementing safety net and conservation hatchery programs to preserve and rebuild genetic resources, and reforming Action Agency-funded hatchery practices. (See Figure 2, below.)

¹⁴ *Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv.*, 839 F.Supp.2d 1117 (D. Or. 2011). By order dated November 8, 2013, the remand deadline was subsequently extended to January 24, 2013.

¹⁵ The integrated FCRPS All-H management of salmon and steelhead describes the coordinated decision-making about the H's--hatcheries, habitat, hydro, harvest and predation using a holistic approach to meet biological opinion goals, standards and targets.

¹⁶ The 2008 RPA Table included 73 RPA Actions, but the 2010 Supplemental BiOp added a 74th RPA Action, namely, RPA Action 1A, which incorporated the Adaptive Management Implementation Plan.

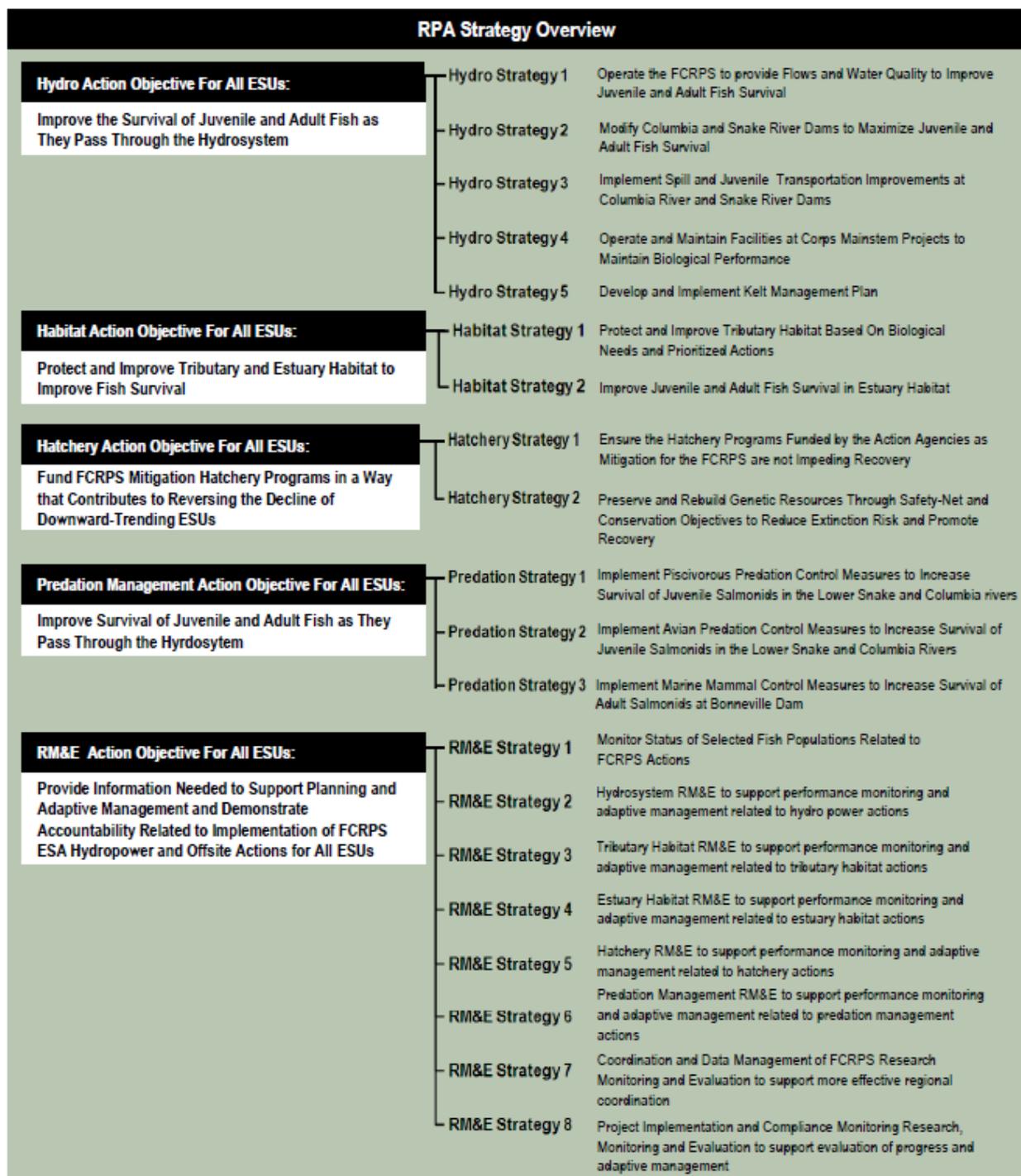


Figure 2. RPA Strategy Overview. (Modified from original source: U.S. Army Corps of Engineers, Bonneville Power Administration, and U.S. Bureau of Reclamation, *Biological Assessment for Effects of Federal Columbia River Power System and Mainstem Effects of Other Tributary Actions on Anadromous Salmonid Species Listed under the Endangered Species Act*, August 2007.)

The Action Agencies' comprehensive implementation program incorporates information from recovery plans, scientific research, and lessons learned through adaptive management to address limiting factors for these species. The program includes a robust and extensive research, monitoring, and evaluation component, which aids in adaptive management and provides Action Agency accountability to NOAA for achieving the performance standards and targets established in the RPA. Although the RPA contains a number of specific actions to benefit the listed species, it also establishes objective standards, targets, and timelines for the various strategies to address effects of the FCRPS on listed species, with complementary and supportive adaptive management processes.

Overhaul of the Hydrosystem

Beginning in the 1990s and continuing in recent years, the Action Agencies have overhauled the hydrosystem by implementing extensive operational and configuration changes to reduce dam passage mortality for salmon and steelhead. A key strategy has been to increase juvenile survival through all passage routes at each dam to meet the performance standards identified in the BiOp. All lower Snake and Columbia dams now feature surface passage systems such as spillway weirs, which work in concert with improvements to other passage routes and structural and operational modifications to improve overall dam survival. As documented in the CE, results of performance testing indicate that the Action Agencies are now on track to meet the BiOp's dam passage smolt survival standards of 96% and 93% for spring and summer migrants, respectively.

This structure reflects NOAA's determination that the Action Agencies should manage the implementation of the RPA adaptively in response to new information and study results and then implement subsequent actions accordingly to achieve the BiOp's performance standards and targets.

Regional Collaboration in RPA Implementation

As an outgrowth of the Remand Collaboration Policy Working Group, the Federal agencies, states, and tribes continue to collaborate during the implementation phase of the BiOp through many regional forums, including the Regional Implementation Oversight Group (RIOG). The RIOG consists of senior policy representatives from five federal agencies, four states, and nine tribes.¹⁷ The RIOG serves as a policy forum for interagency discussion and coordination of actions to benefit salmon and steelhead in the Columbia River basin, including those actions to implement the FCRPS BiOp and related BiOps. Its overall purpose is to facilitate collaboration

¹⁷ The RIOG consists of the following entities: Bonneville Power Administration, Bureau of Reclamation, NOAA Fisheries, U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, the States of Idaho, Montana, Oregon, and Washington, Confederated Salish and Kootenai Tribes, Confederated Tribes and Bands of the Yakama Nation, Confederated Tribes of the Colville Reservation, Confederated Tribes of the Umatilla Indian Reservation, Confederated Tribes of the Warm Springs Reservation of Oregon, Kootenai Tribe of Idaho, Nez Perce Tribe of Idaho, Shoshone Bannock Tribes of the Fort Hall Reservation, and Spokane Tribe of Indians.

among the federal, state, and tribal agencies regarding implementation issues from each sovereign's perspective, but it does not supplant existing sovereign decision making authorities.

To inform the Action Agencies' implementation of RPA actions related to operation of the hydrosystem, technical representatives from the regional sovereigns participate in the System Configuration Team (SCT) and the Technical Management Team (TMT). The SCT assists in prioritizing dam configuration actions. The TMT serves as a forum for making in-season recommendations to the Action Agencies on dam and reservoir operations.

To inform the Action Agencies' implementation of RPA actions related to habitat, the Action Agencies also work closely with states, tribes, and local experts throughout the Pacific Northwest who are familiar with local tributary watersheds and the estuary to identify, evaluate, develop and implement habitat actions. To support the Action Agencies' implementation of tributary habitat mitigation, the RPA includes an Expert Panel (EP) process. EPs are convened in priority watersheds every three years. Panel members are authorities on local habitat conditions and fish populations in the watershed and include (but are not limited to) biologists and other scientists affiliated with local, state, tribal, and federal natural resources or wildlife agencies. EPs evaluate proposed habitat actions and assess the degree to which the actions will address limiting factors for salmon and steelhead.¹⁸ To support the Action Agencies' estuary habitat actions, the RPA includes an Expert Regional Technical Group (ERTG), a panel of experts in restoration and estuarine science who objectively assess prospective habitat projects in the estuary for their benefits to fish, based on physical metrics, professional scientific judgment and the most recent science.¹⁹ Related processes, such as the Northwest Power and Conservation Council's Fish and Wildlife Program, help inform and guide fish and wildlife improvements in the Basin.

The level of ongoing regional engagement in the implementation of the RPA underscores the importance of salmon and steelhead to the Columbia Basin and the widespread appreciation for the magnitude of the challenges facing these species. The collaborative approach to developing and implementing RPA actions for the FCRPS BiOp contributes to the success of the program, both substantively (by ensuring better projects and more effective results) and procedurally (by facilitating Action Agency transparency and accountability).

All of these elements of the RPA demonstrate the likelihood that the Action Agencies' RPA implementation, as described in the IP, will continue producing benefits for fish going forward.

¹⁸ Bonneville Power Administration and Bureau of Reclamation. March 2013. [Science and the evaluation of habitat improvement projects in Columbia river tributaries.](#)

¹⁹ Bonneville Power Administration and U.S. Army Corps of Engineers. February 2013. [Science and the evaluation of habitat restoration projects in Columbia River Estuary, 2012-2017: The Expert Regional Technical Group Process.](#)

NOAA may therefore reasonably rely on the beneficial effects of the implementation of the RPA actions through 2018.

The Comprehensive Evaluation

The 2013 Comprehensive Evaluation provides a thorough report of the Action Agencies' progress in carrying out the FCRPS BiOp RPA Actions. This document provides an opportunity to evaluate RPA implementation at all levels and progress toward BiOp goals, including metrics achieved, actions completed, the results of research, monitoring, and evaluation, and any needed adjustments going forward from lessons learned. It also provides transparency and accountability in ensuring the Action Agencies are fulfilling their ESA responsibility to ensure that their actions are not likely to jeopardize listed salmon and steelhead or adversely modify their designated critical habitat.

The Implementation Plan

The 2008 BiOp calls for periodic Implementation Plans in RPA Action 1. In light of the court-ordered remand, the Action Agencies, in collaboration with many regional stakeholders, developed the IP for the period 2014-2018. The IP sets forth the implementation of the RPA actions through 2018 and identifies concrete actions within the scope of the agencies' authorities that NOAA can reasonably rely upon in issuing the 2014 supplemental BiOp.

Specifically, the IP describes in detail the actions that the Action Agencies plan to implement during the remainder of this BiOp period. In collaboratively developing implementation actions designed to achieve the biological objectives, performance standards, and targets established in the RPA, the Action Agencies focused on the biological needs and the environmental factors that have the potential to limit the likelihood of survival and recovery for each species (limiting factors). All of these projects and implementation actions rely on approaches that have been demonstrated to be biologically sound, both through external scientific research and in practice, through the monitoring and evaluation associated with adaptively managing the implementation of the RPA from 2008-2012. Accordingly, the IP also describes the process by which the Action Agencies will adaptively manage the program in the next four years, should a particular listed project or implementation action prove infeasible or less beneficial than currently anticipated.²⁰

²⁰ Bonneville Power Administration, Bureau of Reclamation, and U.S. Army Corps of Engineers. [2013 FCRPS Comprehensive Evaluation](#), Appendix A. Bonneville Power Administration, Bureau of Reclamation, and U.S. Army Corps of Engineers. [2014-2018 Implementation Plan](#), Appendices C & D.

Fulfillment of ESA Responsibilities

The Action Agencies are currently half way through the original term of the 2008 BiOp, which was designed to cover FCRPS operations for the period 2008-2018. In the 2013 CE, the Action Agencies describe in detail the actions they have implemented thus far, providing transparency and accountability to NOAA on progress toward meeting the BiOp objectives. In the 2014-2018 IP, the Action Agencies identify the actions that will be implemented through 2018 and adaptive management changes or course corrections needed to meet BiOp requirements. Through these reports, the Action Agencies demonstrate that they are on track to fulfill responsibilities under the FCRPS BiOp and RPA. Furthermore, through the RPA's research, monitoring, and evaluation component, the Action Agencies demonstrate that the RPA actions are producing the benefits for salmon and steelhead and their critical habitat anticipated in the 2008 BiOp. For example, data for various life stages, including juvenile in-river or system survival and adult returns, indicate that many listed ESUs and DPSs are improving;²¹ scientific research, the experience of other habitat improvement programs, and emerging evidence from the Columbia River Basin provide increasingly strong evidence that improvements in habitat quality translate into improved fish survival and abundance;²² and monitoring results and performance tests indicate that the configuration actions and operation of dams have improved juvenile fish survival through the FCRPS hydrosystem.²³ Collectively, through past RPA implementation and the actions planned for implementation through 2018, the Action Agencies demonstrate that the RPA is being implemented consistently with the 2008/2010 BiOp and is having the anticipated effect of improving the status of listed salmon and steelhead.

As reflected in the CE and IP, the Action Agencies are implementing the RPA as intended and thereby fulfilling the responsibility under the ESA to ensure that the operation and maintenance of the FCRPS is not likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat.

²¹ Bonneville Power Administration, Bureau of Reclamation, and U.S. Army Corps of Engineers. [2013 FCRPS Comprehensive Evaluation](#).

²² Bonneville Power Administration and Bureau of Reclamation. 2013. [Benefits of Tributary Habitat Improvement in the Columbia River Basin; Results of Research, Monitoring, and Evaluation, 2007-2012](#). Bonneville Power Administration and U.S. Army Corps of Engineers. 2013. [Benefits of Habitat Improvements in the Columbia River Estuary; Results of Research, Monitoring, and Evaluation](#).

²³ Bonneville Power Administration. 2013. [FCRPS Improvements and Operations Under the Endangered Species Act – A Progress Report](#).