



Department of Energy

Bonneville Power Administration
P.O. Box 3621
Portland, Oregon 97208-3621

ENVIRONMENT, FISH AND WILDLIFE

July 25, 2014

In reply refer to: KEW-4

Mr. Bill Bradbury, Chair
Northwest Power and Conservation Council
851 SW Sixth Avenue, Suite 1100
Portland, Oregon 97204

Dear Mr. Bradbury:

Bill

Thank you for the opportunity to comment on the Northwest Power and Conservation Council's (Council) draft amendments to the Columbia River Basin Fish and Wildlife Program (Program). More than 30 years into the implementation of this innovative regional effort, the Council, the Program—and a broad array of regional partners—have accomplished many key objectives from the Northwest Power Act (Act) including:

- Significantly improving salmon and steelhead survival at Federal dams.
- Significantly increasing flows that greatly improve production, migration, and survival of these fish to meet sound biological objectives.
- Structuring program measures to complement the plans of fish and wildlife agencies and tribes and reflect consistency with the legal rights of tribes.
- Using the best available scientific knowledge and utilizing the lower cost alternative to meet sound biological objectives.
- Restoring ecosystem function through habitat restoration and providing dual benefits for both fish and wildlife throughout the basin.

Looking back, compared to the salmon runs in the 1980s, we have seen a reversal in the declining trends of the salmon and steelhead runs. Indeed, some of the largest adult fish returns on record have been observed in recent years. The Program and its regional partners are truly succeeding in bringing fish back to the rivers. Since the 1990s, of the 49 Interior Columbia Basin salmon and steelhead populations for which we have data, 47 populations have increased in abundance. The cumulative average increase for Chinook salmon populations is 253 percent, and for steelhead populations the average is 170 percent. Fisheries that closed in the 1970s (and even earlier in some cases) have reopened, allowing both tribal and sport fishers to share in the bounty.

Although Mother Nature deserves considerable credit, together we also share in the credit for these impressive results. Through partnership as well as litigation, the region has come a long way from the river operations, habitat, and hatcheries of 1980. For the Federal Columbia River Power System (FCRPS) in particular, with guidance from the Council, we have aggressively implemented an "All-H" approach, using a robust combination of taxpayer and ratepayer funding to fulfill both of the Act's major mandates for the Bonneville Power Administration (Bonneville): to protect, mitigate, and enhance fish and wildlife affected by the development and operation of the hydroelectric system, and provide equitable treatment for them with the other purposes for which the system is operated.

How far have we come? The Federal agencies collectively have achieved the best inriver fish survivals and travel times through the FCRPS since the dams were built; protected and restored hundreds of thousands of acres of fish and wildlife habitats; and used artificial production effectively to help bring fish back to healthy, harvestable levels while addressing tribal and treaty rights. The Program also serves as an umbrella for integrating notable regional accomplishments, such as the Biological Opinions, the Columbia Basin Fish Accords, and wildlife and resident fish settlement agreements. In fact, under the Program the region enjoys the benefits of collaboration among diverse interests that is unparalleled, providing a strong alliance for continued mitigation in the future.

Bonneville encourages the Council to adopt the Independent Science Advisory Board's (ISAB) suggestion and include a review of these "All-H" accomplishments to date as part of the Program. Although the region is not done with hydrosystem mitigation, Program amendments now and in the future should acknowledge and reflect this substantial and productive base.

With respect to the FCRPS, Bonneville's fish and wildlife commitments and accomplishments under the Northwest Power Act have been funded by the Bonneville customers and the electric ratepayers of the Pacific Northwest. Since 1982, when the first Program was adopted by the Council, electric ratepayers have spent billions of dollars for fish and wildlife mitigation, including payments for fish facilities such as ladders, juvenile bypasses and outfalls.

Starting in 2008, BPA's Fish and Wildlife budget increased significantly—by almost \$100 million annually—with commitments running through 2018, and in some cases beyond. Currently, as explained in our recent presentation to the Council, Bonneville's fish and wildlife costs for fiscal years 2014 and 2015 are \$519 million annually. Bonneville manages more than 800 annual contracts to implement the Program in a timely and effective manner.

Today's commitments and accomplishments show that the Program has successfully guided Bonneville and the FCRPS operators to meet and even exceed the original expectations in the Northwest Power Act. These commitments and accomplishments demonstrate that "equitable treatment" of fish and wildlife with Bonneville's power marketing responsibilities has moved from a legal concept to reality.

Thank you for considering Bonneville's comments on the draft Program amendments. Please also see our additional detailed comments in the enclosure. We look forward to working with the Council on the completion of the Program amendments and in implementing Bonneville's share of mitigation in the future.

Sincerely,



F. Lorraine Bodi
Vice President, Environment, Fish and Wildlife

Enclosure

Enclosure
Bonneville Power Administration
Detailed Comments on the Draft 2014 Program Amendments
July 25, 2014

1. Goals and Objectives

Bonneville supports the Council working with Federal and state agencies and tribes to review quantitative objectives for healthy and harvestable fish populations.

- **The Statutory Context**

The Program should take as its touchstone the objectives Congress established in the Act, in particular those expressly stated for anadromous fish. The Act anticipates a Program based primarily on hydrosystem actions and identifies two mitigation priorities for anadromous fish, both of which the region has largely achieved. The Program must “provide for improved survival of such fish at hydroelectric facilities” and “provide flows of sufficient quality and quantity between such facilities to improve production, migration, and survival of such fish....”¹ These goals and objectives apply to all hydroelectric projects in the Northwest: Appendix B to the draft program indicates the hydrosystem affecting anadromous fish in the basin includes 136 dams, some built even before Bonneville Dam.²

The Program should avoid conflating the Federal Columbia River Power System (FCRPS)³ mitigation responsibilities with the broader hydrosystem mitigation goals and obligations under the Act or the broadest rebuilding and recovery initiatives that fall outside the Act. When recommending an enhancement measure for Bonneville funding, the Council should articulate a specific nexus to the FCRPS rather than hydroelectric effects generally.

- **Five Million Salmon and Steelhead**

Bonneville supports the goal of five million hatchery and wild adult salmon and steelhead being produced from the Columbia River Basin. This is a goal that applies not just to the hydrosystem or the FCRPS, but takes into account all the factors that have had adverse impacts on salmon, including population growth, habitat degradation,

¹ 16 U.S.C. §§ 839b(h)(2)(A), (6)(E).

² See, Council, DRAFT 2014 PROGRAM, Appendix B, *Compilation of Information on Salmon and Steelhead Losses in the Columbia River Basin*, page 136 (Mar. 1986).

³ Bonneville uses the “FCRPS” to mean the Federal hydroelectric dams in the Columbia River Basin from which Bonneville markets power.

harvest, irrigation, and other influences. Recognizing that this five million fish goal extends beyond the FCRPS focus and the scope of the Act, the Program's definition of this goal should focus on all fish produced in the basin, not simply those returning above Bonneville Dam after harvest. The utility of a long-term, comprehensive goal such as five million fish depends on recognizing the many contributing factors and the role of all of the actors involved across the entire Columbia River Basin.

- **Smolt to Adult Returns (SARs)**

We appreciate the Council's decision to take into account the Independent Science Advisory Board's (ISAB) recommendation to re-evaluate the use of SARs as a Program goal. Research shows that SARs are heavily influenced by factors other than inriver flows and spill conditions, particularly ocean conditions that are beyond the control of FCRPS operations. For example, one study found a threefold difference in SARs for sockeye salmon that migrated downstream as juveniles in 2008 and 2010 despite nearly identical survival through the FCRPS from McNary to Bonneville dams.⁴ The researchers found the difference in sockeye SARs most closely correlated with ocean and climate indicators and concluded the large difference in SARs were the result of varying ocean conditions. In addition, the varying and in some cases evolving life histories of different salmon and steelhead do not lend themselves to blanket SAR objectives that do not account for those differences. For example, the ISAB noted that the Council's 2-to-6 percent SAR objectives may be higher than necessary for fall chinook, which have a different migratory strategy. SARs also may understate actual adult returns because of additional mortality related to tagging itself. For these and other related reasons, SARs are not an effective metric for assessing hydrosystem performance and mitigation.

- **Subbasin Plans**

The Program should clarify that subbasin plans are informative, but may be outdated, and so they are not intended to override more recent science information on key limiting factors, priority measures for implementation, etc.

2. Incorporation of Biological Opinions, Fish Accords, and Other Agreements

Bonneville supports and encourages the specific inclusion in the Program of various Biological Opinions (BiOps) applicable to hydrosystem projects, the Columbia Basin Fish Accords, the Washington Estuary Agreement, the Willamette Wildlife Agreement,

⁴ Williams, J.G., Smith, S.G., Fryer, J.K., Scheuerell, M.D., Muir, W.D., Flagg, T.A., Zabel, R.W., Ferguson, J.W., and Casillas, E., INFLUENCE OF OCEAN AND FRESHWATER CONDITIONS ON COLUMBIA RIVER SOCKEYE SALMON *ONCHORHYNCHUS NERKA* ADULT RETURN RATES in *Fisheries Oceanography* (2014).

the Montana Resident Fish Agreement, the *U.S. v. Oregon* settlement, and other similar agreements. These documents and agreements have generally addressed complex, challenging issues through comprehensive negotiations among regional partners, including the States represented by the Council.

While a significant portion of Bonneville funding for the Program is dedicated to these commitments, this is a positive outcome, rather than a negative aspect, of a multi-decade Program. Incorporating the resolution of issues, whether permanent or for a period of years, makes sense after decades of Program implementation. These commitments provide greater certainty and continuity for planning and implementing mitigation in a biologically- and cost-effective manner – and complement the plans of fish and wildlife agencies and tribes as well as consistency with the legal rights of Indian tribes.

The Program should link these documents to its goals, objectives, and scientific principles. For example, the Program could incorporate actions and performance standards from the BiOp and Fish Accords and be more explicit in linking the BiOp to the scientific foundation and principles, as it did in the 2009 Program Framework.⁵

More details regarding hydrosystem mitigation under various BiOps are described in the following section.

3. FCRPS Mainstem Mitigation

- **The Northwest Power Act and ESA**

Through efforts to comply with the Northwest Power Act, Endangered Species Act (ESA), and the Clean Water Act obligations, Bonneville has worked with the Corps of Engineers (Corps) and the Bureau of Reclamation (Reclamation) to optimize the FCRPS configuration, flow, and spill to benefit both ESA-listed and non-listed fish. River flows for fish operations are adaptively managed and prioritized using the best available scientific information, making fish flows one of the main considerations of how the system is operated.⁶ These operations include the most innovative and effective salmon passage approaches developed anywhere in the world, producing dam survivals as high as 98 percent in some cases, and improving fish travel times with surface passage enhancements.⁷ Additionally, the significant increases in survival, production, and rate

⁵ Council, COLUMBIA RIVER BASIN FISH AND WILDLIFE PROGRAM, page 3 (2009).

⁶ Bonneville, SYSTEM OPERATION STRATEGY FOR THE FCRPS RECORD OF DECISION, page 15 (“Conflicts between power and fish are resolved in favor of the fish...”) (1997)
http://efw.bpa.gov/environmental_services/Document_Library/System_Operation_Review/

⁷ Bonneville, Army Corps of Engineers, and Bureau of Reclamation, ENDANGERED SPECIES ACT FEDERAL COLUMBIA RIVER POWER SYSTEM COMPREHENSIVE EVALUATION (2013). Available at:
<http://www.salmonrecovery.gov/BiologicalOpinions/FCRPSBiOp/ProgressReports/2013ComprehensiveEvaluation.aspx>

of migration are at or near levels that pre-date the construction of the Bonneville Dam.⁸ The ISAB has noted that the “Mainstem Plan has received much attention and has been one of the most successful components of the Program, especially as it relates to salmonid passage.”⁹

Past Program measures dating back to 1982, including the Water Budget, for example, have provided the underpinnings for the FCRPS, Willamette, Libby, and Upper Snake River BiOps. These BiOps now direct much of the Action Agencies’ legal compliance for management of the FCRPS. Fish hydrosystem operations under the BiOps are more than a minimal floor that benefit only a limited number of species, as the draft Program can be read to suggest. Rather, FCRPS operations to comply with the ESA also fully implement the Northwest Power Act’s mandates, in particular the anadromous fish objectives to “provide improved survival of such fish” at the dams and to “provide flows of sufficient quality and quantity between such facilities to improve production, migration, and survival of such fish as necessary to meet sound biological objectives.”¹⁰ While the Act addresses a wider range of species, the actions implemented to comply with the ESA—many of which are built on actions originally instituted to comply with the Act -- now rise above the floor set by the Northwest Power Act.

- **Spill Study**

In response to recommendations for another spill test, we noted “significant questions regarding recent proposals for increased levels of spill and new spill performance metrics....” The ISAB review requested by the Council earlier this year confirmed the importance of these questions. We support the Council’s decision not to include the proposed spill test in the draft Program, and wish to underscore the FCRPS Action Agencies’ commitment to fully implement the BiOps’ hydrosystem operations and configurations, including spill, and the associated passage studies to achieve the BiOp performance standards. In addition to reflecting the “best available scientific knowledge” and “sound biological objectives” mentioned in the Act, the current ongoing spill regime also reflects the Act’s directives to “complement the existing and future activities” of NOAA Fisheries, the Accord tribes, and others.

The ongoing rigorous, passage route-specific BiOp performance testing of spill/passage is scheduled to run through 2018. To address ISAB and NOAA Fisheries advice, the Council should ensure that any future consideration of experiments involving spill after 2018 should be based on the best available science, show a high potential to improve fish survival, and possess a sound study design. They should also be consistent with

⁸ See, e.g., Bonneville, Army Corps of Engineers, and Bureau of Reclamation, FCRPS IMPROVEMENTS AND OPERATIONS UNDER THE ESA—A PROGRESS REPORT, pages 1-2 (Sept. 2013)

<http://www.salmonrecovery.gov/docs/FinalHydroSynthesisWithReview9-20-13.pdf>

⁹ ISAB, REVIEW OF THE 2009 PROGRAM, page 36 (Mar. 2013).

¹⁰ 16 U.S.C. §§ 839b(h)(2)(C), (6)(E).

state and Federal laws, be deemed operationally and economically feasible, and be subject to independent scientific reviews.

- **Kelts**

Overall operational changes for juvenile salmon and steelhead (e.g., extended seasonal operation of surface passage routes at The Dalles and Bonneville dams) have also provided benefits to overwintering steelhead and kelts. In addition, research at McNary Dam is investigating the potential benefit that may be obtained from a limited wintertime operation. Preliminary results in an ongoing study suggest kelt survival through turbines is likely much higher than originally estimated. These operational changes, combined with recent research results, demonstrate that efforts to provide safer fall back outlets for over-wintering steelhead and kelts are already happening.

Moreover, these passage improvements are supplemented by significant, cutting-edge kelt reconditioning efforts under the 2008 Fish Accords and the 2014 Supplemental BiOp. These reconditioning efforts that began as experimental techniques have now started to increase the abundance of select steelhead stocks in both the Columbia and Snake River basins.

- **Grand Coulee Operations**

The draft Program calls for Federal, tribal, and state collaboration to evaluate alternative operations at Grand Coulee Dam,¹¹ but this work has already occurred over the last several years. The operations at Grand Coulee that specifically benefit fish were developed through earlier Program processes and were further refined through the regional collaboration process that led to the NOAA Fisheries 2008 FCRPS BiOp. The Action Agencies completed reviews and reassessments of the FCRPS BiOp in 2010 and 2013, and NOAA issued a 2014 Amended BiOp last winter. It is unlikely that additional evaluation would result in significantly different operations.

The evaluation of alternative operations that is being called for in the draft Program is guided by three principles (see page 63). Bonneville notes that, while somewhat loosely written,¹² the third principle listed would not be feasible from a power system perspective, or at least would not be feasible without significant regional investment in alternative resources that could be accessed to meet the needs of the power system. This principle calls for minimizing Grand Coulee discharge fluctuations and ramping rates to provide steady flow across each season and each day. This is a problem because the regional transmission system relies heavily on Grand Coulee's operational flexibility. Grand Coulee is able to meet fluctuating power demands and respond to

¹¹ The alternative operations to be evaluated include the operation recommended by the Spokane Tribe as shown in the draft Program in Appendix I.

¹² The bounds stated in the draft Program—"As much as possible within current operating constraints"—do not provide clear guidance or expectations.

variable generating resources (e.g., wind and solar), while maintaining adequate operating reserves to assure the reliability of the power grid. Further limiting ramp rates and providing steady flows would significantly impair the ability of Grand Coulee to meet these important power system requirements, forcing the region to acquire additional resources, and as a result, increasing Northwest power rates.

Operations at most other FCRPS projects are already significantly limited in order to protect fish, and those projects are only available to provide a small amount of reserves for reliability and variable resource integration for much of the year. This makes preserving the remaining capability at Grand Coulee even more important. The recommended alternative operation would also be impractical to implement because in approximately 50 percent of water conditions the alternative operations would be overridden by planned flood risk management operations.

The proposed operation would also increase the amount of light-load-hour generation and reduce the amount of heavy-load-hour generation from Grand Coulee. Reducing heavy-load-hour hydropower would likely increase carbon emissions, because heavy-load-hour generation would be replaced primarily with natural gas generation (either from existing or new resources), while light-load-hour generation may result in spill from oversupply, because light-load-hour loads have less power demand.

Conservation actions cannot be relied upon to replace lost heavy-load-hour generation, because all cost-effective conservation acquisitions may be necessary to meet projected load growth.¹³

4. Artificial Production

The draft Program goes too far in making broad statements about the use of hatcheries and the balance between hatcheries and wild fish. Federal, state, and tribal fishery managers have the legal responsibility to ensure that the use of artificial production is managed in a manner to support harvest (e.g., tribal and treaty, commercial, and sport fisheries), contribute to rebuilding, and minimize adverse impacts on wild stocks. We support the efforts of the fisheries managers in striking the balance among the competing demands as related to artificial production, and encourage the Council to adopt Program measures that are supportive of the co-managers initiatives.

Throughout the Columbia Basin, hatcheries are funded by Bonneville and many others as legally mandated mitigation for dams and other human activities. For Bonneville funded hatcheries, the BiOp confirms our dual objectives—to use hatcheries to provide

¹³ The Council's most recent power plan identified only "enough conservation to be available and cost-effective to meet 85 percent of the region's load growth for the next 20 years." Council, SIXTH NORTHWEST CONSERVATION AND POWER PLAN, page 1 (Feb. 2010).

harvest opportunities and for conservation purposes. Best management practices are employed to minimize the effects on wild fish of hatcheries. As noted previously, artificial production has helped to bring fish back from the brink of extinction and from general risk of extinction throughout the basin (including salmon, steelhead, Kootenai River white sturgeon, and the investigation of the feasibility for lamprey), provided a jump-start in areas where salmon and steelhead were extirpated decades earlier, and provided sustainable harvest opportunities for tribes, sport and commercial fishers under regional, national, and international treaties and agreements.

For new hatcheries proposed for Bonneville funding, the Program should simply call for using the Council's three-step planning process. This process includes all the science and review provisions in the draft Program without restating them in ways that could lead to misunderstanding or disagreement with the Council's overarching intent to have hatchery programs designed, built, and operated using the best available science. Bonneville's commitment to the three-step process is already captured in Accord agreements where new hatchery projects are planned.

For the other hatcheries Bonneville funds—built by the Corps and Reclamation—the FCRPS BiOp called for the Action Agencies to fund Hatchery Genetic and Management Plans (HGMPs), which have been completed and submitted to NOAA Fisheries, as the next step in ensuring ESA compliance for those hatchery programs. Appropriate recommendations for hatchery reforms have been included in the HGMPs and reviewed through the court-sanctioned *U.S. v Oregon* collaboration process.

Bonneville also supports the prioritization and programmatic review of hatchery-related RM&E in an effort to streamline, focus, and find efficiencies. However, Bonneville is not the appropriate entity for reporting on the annual production and harvest data for hatcheries. Rather, because they already have responsibilities outside the Northwest Power Act to collect and provide data, the Council should seek this information from the fisheries and hatchery managers—those who actually regulate and operate the hatchery programs and manage fish harvest. Bonneville would simply be a middle man providing secondhand information.¹⁴

¹⁴ Outside of the Program, artificial production and harvest management and reporting currently occur in large part through the Columbia River Compact and the *U.S. v. Oregon* agreement. The 2008 NOAA Fisheries harvest biological opinion supporting the *U.S. v. Oregon* agreement relies on the same scientific foundation as the FCRPS and Upper Snake BiOps, and represents the commitments of the United States, Oregon, Washington, Idaho, the Nez Perce Tribe, the Yakama Nation, the Umatilla Tribe, and the Warm Springs Tribe. In addition, the United States acting through NOAA Fisheries has extensive reporting requirements under the Pacific Salmon Treaty with Canada, and much of that reporting overlaps what the Council wants Bonneville to provide.

5. Blocked Area Mitigation and Reintroduction of Anadromous Fish

The emphasis in the draft Program on additional mitigation in blocked areas once again highlights the Act and the Program's coverage of both Federal and non-Federal dams. While acknowledging the substantial habitat made inaccessible by Federal dams, the map in Appendix B of the draft Program (on page 136) shows that many of the dams blocking anadromous fish migration are on tributaries and are owned by non-Federal entities regulated by FERC. For the Program to address blocked areas, it should do so as required by the Act, "on a system-wide basis."¹⁵ Resident and anadromous fish goals in these areas are the shared responsibility of many entities, not just Bonneville or the Federal dam managers.

The draft Program proposes a new three-phase approach for Bonneville to use its discretionary authorities to fund investigation, design, and testing to ultimately result in the reintroduction of anadromous fish above Chief Joseph and Grand Coulee dams. We recommend that the Council reconsider or redraft this provision.

Any proposal for reintroduction of anadromous fish above Chief Joseph and Grand Coulee dams is inherently of international concern, since it implicates Canadian interests and operations on the portion of the Columbia River in Canada. In fact, a proposal regarding reintroduction of anadromous fish above Chief Joseph and Grand Coulee dams is currently being considered in the United States' review of possible options for the Columbia River Treaty (CRT) post-2024. In December 2013, the U.S. Entity for the Treaty submitted a regional recommendation for the post-2024 Treaty to the U.S. Department of State that included a recommendation concerning this issue.¹⁶ The U.S. government is still in the process of considering the regional recommendation and formulating its position. In accordance with the CRT recommendation, reintroduction studies should be sanctioned and supported with shared costs, by both the United States and Canada.

Bonneville respects the desire of many entities in the region for anadromous fish to return to the upper Columbia River, and we support the regional recommendation for

¹⁵ "[T]he program, to the greatest extent possible, shall be designed to deal with [the Columbia] river and its tributaries as a system." 16 U.S.C. § 839b(h)(1)(A).

¹⁶ This particular recommendation states:

The United States should pursue a joint program with Canada, with shared costs, to investigate and, if warranted, implement restored fish passage and reintroduction of anadromous fish on the main stem Columbia River to Canadian spawning grounds. This joint program would proceed on an incremental basis, beginning with a reconnaissance-level investigation, and continue with implementation actions. All such Federal actions at the Chief Joseph and Grand Coulee projects are subject to congressional authorization and appropriation. Modernized Treaty operations should not interfere with other opportunities to restore fish passage and reintroduction of fish in other blocked areas of the Columbia River Basin.

U.S. Entity, REGIONAL RECOMMENDATION FOR THE FUTURE OF THE COLUMBIA RIVER TREATY AFTER 2024, page 5 (Dec. 13, 2013). <http://www.crt2014-2024review.gov/>

the post-2024 Treaty. However, rather than including measures on this issue, Program guidance should acknowledge that this issue is currently being addressed in a broader international context. To better align the Council's interests in reintroduction with the Treaty process, the final Program should acknowledge four considerations and conditions: (a) the results from the U.S. government's consideration of its position on the Treaty; (b) assuming there is U.S. government interest in pursuing passage, confirmation of Canadian interest in pursuing passage; (c) reintroduction experiments at a smaller scale that demonstrate feasibility and opportunity for success; and (d) congressional authorizations and appropriations necessary to proceed.

Bonneville is not, however, abandoning its longstanding fish and wildlife mitigation efforts in blocked areas. Bonneville has funded substantial resident fish substitution and other mitigation actions in blocked areas for decades, with the support of the Council, states, and tribes; such actions include the Spokane Tribal Hatchery, the Colville Trout Hatchery, Washington's Sherman Creek Hatchery, and the Lake Billy Shaw fishery managed by the Shoshone Bannock Tribes. Moreover, Bonneville has for years worked to reopen access by anadromous fish to blocked habitat through the removal of migration barriers, from outdated culverts to abandoned and deteriorating dams. Since 2008 Bonneville and its partners have opened and improved access to about 2,500 miles of habitat, more than twice the length of the Columbia River.¹⁷ The Program should continue to encourage this kind of reintroduction, but temper guidance on areas above Chief Joseph and Grand Coulee dams until the post-2024 Treaty considerations described above have run their course.

6. Lamprey and Sturgeon Mitigation

- **Lamprey**

Lamprey actions consistent with the Program are being funded by Bonneville, the Corps, and Reclamation through the Columbia Basin Fish Accords through 2018, so this linkage should be expressly mentioned. The draft Program includes a new principle broader than mitigation for hydrosystem effects, i.e., that "Lamprey throughout their historic range should be self-sustaining and harvestable." However, the lamprey species as a whole are affected by the altered state of the environment in the Basin. Rather than such a broad principle, Program objectives related to lamprey should focus on and complement the current and future plans of resource managers as reflected in the Accords, the Conservation Agreement for Pacific Lamprey adopted by resource

¹⁷ FCRPS Action Agencies, A CITIZEN'S GUIDE TO THE 2013 COMPREHENSIVE EVALUATION, page 11 (July 2013). <https://www.salmonrecovery.gov/BiologicalOpinions/FCRPSBiOp/FinalCEandIP.aspx>

managers and dam operators in 2012, and perhaps also the Tribal Lamprey Restoration Plan developed by CRITFC.

- **Sturgeon**

The Program should make the critical distinctions necessary to effectively guide mitigation for the three distinct groups of sturgeon in the Columbia River Basin: the ESA-listed Kootenai River white sturgeon, non-listed white sturgeon, and the listed anadromous green sturgeon found only below Bonneville Dam. Kootenai River white sturgeon are largely addressed under the Libby BiOp. Bonneville’s commitments for non-listed white sturgeon generally are in the Accords. And NOAA Fisheries has confirmed that FCRPS operations do not affect the green sturgeon.¹⁸

FCRPS operations and management have for decades been undertaken as mitigation for both Kootenai River white sturgeon and non-listed white sturgeon. Libby Dam flows are now regulated under the U.S. Fish and Wildlife Service’s 2006 BiOp to aid Kootenai white sturgeon. In addition to flow, the Libby BiOp also has reasonable and prudent actions calling for temperature control, habitat improvements, and a cutting edge hatchery program—all of which are underway. Non-listed white sturgeon elsewhere in the river benefit from current water releases from storage reservoirs in the spring and summer to enhance salmon populations. To enhance white sturgeon spawning further would require increased drafts from the headwater projects which in turn would contradict other sections of the draft Program that call for the enhancement of fish populations below headwater dams, as well as flow management priorities and resource balance in the FCRPS BiOp. In addition, the need to pass non-listed white sturgeon at each dam or for mainstem habitat improvements is not certain. Bonneville suggests the Council consider calling on fisheries managers to develop a comprehensive sturgeon plan prior to adopting recommendations for passage studies or mainstem habitat improvement efforts.

7. Wildlife Mitigation

One of the Program’s notable successes is the wildlife mitigation offsetting effects from the construction of the FCRPS dams and the inundation of habitat. The Council should

¹⁸ In section 6.2.3 of the 2014 FCRPS Supplemental BiOp “NOAA Fisheries concurs with the Action Agencies’ determination that implementing the RPA is not likely to adversely affect designated critical habitat for Southern DPS green sturgeon.” Also in section 6.1.6, “NOAA Fisheries reaffirms its concurrence with the Action Agencies determination that effects of implementing the RPA are insignificant, and therefore is not likely to adversely affect Southern DPS green sturgeon.” And in the 2008 Willamette BiOp, section 1.4, “NMFS determine[d] that the Proposed Action and RPA are not likely to adversely affect” green sturgeon.

expressly highlight the results of the Wildlife Crediting Forum from 2011.¹⁹ Using the protocols and standard operating procedures for habitat evaluation reports agreed to in the forum, the Program can now show that wildlife mitigation has been completed for almost all FCRPS dams for construction and inundation impacts. By way of illustration, 315,784 acres were inundated by the FCRPS and more than 734,690 acres have been protected and mitigated – and this does not count the habitat actions from most fish mitigation projects. Moreover, even for wildlife alone, this acreage is under-reported.²⁰

Bonneville questions the draft Program’s increased emphasis on operational impacts on wildlife and secondary wildlife losses. With respect to operational losses, the assessments for construction and inundation considered all habitat losses up to and including full reservoir pool levels. To the extent reservoir operations adversely affect habitat, those impacts generally occur below full pool level, and have largely been mitigated. The Program should therefore limit its call for operational loss assessments to circumstances where FCRPS operations cause impacts above the full pool reservoir elevations, or locations above or below reservoirs where operations contribute to habitat erosion or depletion.

Even in the handful of areas where operational losses occur, there are a wide range of operational constraints, habitat actions, dam modifications, and hatchery programs providing mitigation throughout the Basin. Almost all Program expenditures address operational losses in one form or another. For many reasons then, assumption-driven operational loss assessments do not appear to add value as compared to emphasis on continuing “on-the-ground” mitigation actions.

The concept of including some version of “secondary impacts” is without any supporting documentation or precedent we can find. There is also the related complexity of secondary gains in that most areas in the region’s ecosystems remain occupied, with possibly new or different species than what was there prior to hydrosystem development, but nonetheless, filled with wildlife. Presumably these gains would be used to offset any secondary losses.

¹⁹ The Wildlife Crediting Forum report accepted by the Council and referenced in the draft Program in Appendix J represents the most up-to-date information and addresses the flaws in Table C-4 in the draft Program. Bonneville believes Table C-4 is incomplete, obsolete, and misleading and should be replaced by documentation from the Wildlife Crediting Forum report. In addition, the draft Program appears to omit an important supporting reference to the *Habitat Unit Stacking White Paper* by Paul Ashley, February 19, 2008 which was found in footnote 6 on page 21 of the 2009 Program. The habitat unit concerns addressed by the paper remain unresolved, so the Program should continue to reference it.

²⁰ Bonneville continues to update and maintain the wildlife crediting reports on Pisces as available through the Columbia Basin Fish website, but even with the admirable efforts of the forum and the Regional HEP Team to create an agreed upon ledger, some wildlife project managers do not follow forum standard operating procedures, and some older HEP reports that underreported HUs have not been updated. Consequently, the crediting reports available on Columbia Basin Fish continue to underreport the actual mitigation completed by Bonneville.

Where above pool operational losses may occur, the least contentious, most expeditious, and most cost effective means of addressing these losses is through a publicly reviewed negotiated settlement, such as in the Willamette Wildlife Agreement. This approach should continue to be encouraged.

8. Adaptive Management

Like the Council, Bonneville is committed to an adaptive management approach that uses research and monitoring data to understand how actions implemented are performing, to assess the implemented actions' effectiveness in addressing key objectives, and applying lessons learned to future actions. Bonneville has collaborated with the Council, Corps, Reclamation, tribes, states, and many other regional partners, to identify RM&E necessary to support an adaptive management approach to implementing the program. While this has contributed to a substantial improvement in the knowledge base and shaped management decisions over the last decade, there is opportunity for improvement. Specifically, Bonneville believes the Program should help focus on value-added priority RM&E to address key information needs for populations and habitat status and action-effectiveness; make data, synthesis, and reporting more readily available; and focus research to ensure it is relevant to management decisions. Some examples of adaptive management in the draft Program follow.

- **Strongholds**

Including strongholds in the Program comports with the ISAB's encouragement for more focus on sustainability with strategies to protect diversity and resilience, and to build adaptability.²¹ Strongholds will probably continue to play a critical role in the various life stages of anadromous and resident fish, especially as actions are taken to protect mitigation investments in response to a warming climate. A better understanding of where these habitats are could help guide efforts implemented under the Program in the Columbia River Basin. Strongholds, with a focus on habitats that will be most resilient in the face of climate change, could also provide valuable information when assessing mitigation and protection investments.

- **New Action Areas**

Adaptive management and new Program initiatives anticipated for Bonneville funding should be reviewed and recommended for implementation funding in the context of legal responsibilities, budget availability, and relative priority. Some, such as predator control, monitoring of toxic contaminants, and non-native species issues identified as

²¹ ISAB, REVIEW OF THE 2009 PROGRAM, page iv (Mar. 2013).

emerging or expanded areas in the Program are broad, region-wide issues with little or no direct nexus to the FCRPS. They do not have broad applicability to Bonneville responsibilities, although we do fund limited actions in those areas when they intersect with other Program and BiOp actions. In other words, Bonneville is not a lead funder in areas that have historically been covered by appropriations to other state and Federal agencies, or for which others have express obligation.

- **Maintenance for Existing Fish Screens and Other Bonneville Assets**

Embedded in Appendix P (page 212), but listed as one of the emerging priorities (page 115), are measures for assessing and providing long-term maintenance of Bonneville assets. Bonneville supports this initiative, but encourages the Council to consider less prescriptive language in the measures to accomplish the effort. For example, rather than defining the workgroups and timeframes, the Program should allow Council and Bonneville the flexibility to work together with established workgroups, such as the Fish Screen Oversight Committee (FSOC), to develop an asset inventory and long-term management plan. This would include defining the criteria for assessment, prioritization, and cost-share for maintenance of facilities originally funded by Bonneville. Bonneville is committed to working together with the Council and the region to assess the magnitude of this effort and working towards identifying a funding prioritization process within existing budget commitments.

- **Research, Monitoring, and Evaluation (RM&E) Reform**

We agree with the Council's goal for reduced expenditures for RM&E overall, and have been working on RM&E reform initiatives, starting with habitat RM&E. We are making good progress in habitat action effectiveness, improved outputs from habitat monitoring and Intensely Monitored Watersheds (IMW) and the integration of Columbia Habitat Monitoring Program (CHaMP), with the Forest Service Pacfish/Infish Biological Opinion (PIBO) program. All of these initiatives are multi-year efforts. We expect to next address programmatic improvements in fish status and trend monitoring.

On the other hand, the draft Program appears to contemplate significantly increased RM&E efforts related to the estuary, for reasons that are unclear. The Corps of Engineers has the lead role in estuary RM&E, and the estuary RM&E framework has been recently reviewed by the ISAB. Bonneville, therefore, should not be expected to monitor the effects of dredging as there is no nexus between dredging and the FCRPS. Please consider deleting or redrafting the additional RM&E efforts in the estuary as outlined in the draft.

9. Bonneville Funding Strategies

- **Bonneville Funding Responsibilities and Priorities**

For Bonneville funding, high priority is accorded to actions with a strong connection to FCRPS mitigation plans and “on-the-ground” benefits for fish and wildlife. Not all the areas identified in the draft Program for Bonneville funding achieve this priority.

Bonneville plays a lead role in funding some activities, but not others, depending on the FCRPS nexus and express legal mandates. For example, Bonneville currently provides lead funding, in conjunction with the Reclamation, for offsite (i.e., “enhancement”) tributary habitat mitigation under the Program and BiOps; the Corps is the lead funder for studies and passage actions at its dams, and for actions and studies in the estuary, although Bonneville provides limited cost share funding and pays the debt service for the power share of fish facilities at the dams once they are placed in service. And as another example, NOAA Fisheries operates as the lead funder for marine mammal actions, although the Corps funds certain actions near Bonneville dam.

- **Bonneville Overhead**

The draft Program suggests Bonneville’s internal overhead costs for implementing the program are too high and should be scrubbed for excess. The Council’s draft Annual Columbia River Fish and Wildlife Program Cost Report for FY2013 shows the direct program costs in Figure 2D were \$291.1 million, with Bonneville’s internal support costs \$15.73 million, about 5.4 percent of the total.²² While we appreciate the Council’s interest in efficiencies associated with Program overhead, our internal costs contrast quite favorably to the overhead of sponsors contracting under the Program, and Bonneville will continue to carefully manage its own internal support costs. And as indicated in our comments to the Council on July 9, 2014, our overhead costs may increase slightly in the future to support implementation of the Program, which as mentioned, includes over 800 contracts annually. We would note that we are looking for other areas of administrative costs to streamline, such as reviewing the Pisces contracting tool to consolidate it with Taurus, and converting the tool to a web-based application. Bonneville seeks the Council’s support in review of other Program-related processes for efficiencies as well.

- **Availability of Capital**

The draft Program includes some goals, such as measures for anadromous fish mitigation in blocked areas, that could require extensive capital construction at FCRPS dams and elsewhere. Ultimately, Congress retains control of Federal agency financial commitments for large capital fish construction projects. Bonneville may not start

²² <http://www.nwcouncil.org/reports/financial-reports/2014-05/>

construction of such a capitalized mitigation project unless the expenditure of funds for the initiation of construction has been specifically approved by Congress.²³ In the case of fish passage investments at the dams, Bonneville continues to look to the Corps and Reclamation to seek congressional appropriations for which Bonneville would then reimburse Treasury for the power share. Bonneville is managing a long-standing access to capital issue that was the subject of recent public discussions, because Treasury borrowing authority is not adequate for all of Bonneville's expected capital programs.

10. Accomplishments

As noted previously, the Program has progressed to a point where it merits a detailed summary of at least high-level accomplishments. The following are suggested accomplishments towards meeting the obligations and objectives of the Act for inclusion in the Program. Bonneville supports the ISAB's recommendation that the Program include accomplishments to date.²⁴ The significant accomplishments of the last 30 years provide context essential to inform the Program's future goals and objectives.

- **Hydrosystem Accomplishments:** FCRPS dams have been extensively overhauled to improve passage of juvenile and adult salmon, steelhead, and lamprey.²⁵ Using surface passage (shallow spill) and other improvements, they are now on track to meet ambitious performance standards of 93 to 96 percent juvenile fish dam passage survival, as well as inriver survival, spill passage efficiency, and migration timing metrics.²⁶
 - Starting with the Council's 1982 Program and the creation of the Water Budget and extending to our current water management regime, river flows for fish operations have been prioritized and planned around the best available scientific information, making fish flows a priority consideration after flood control.

²³ See, 16 U.S.C. § 839b(h)(10)(B).

²⁴ ISAB, REVIEW OF THE 2009 PROGRAM, page 1.

²⁵ See, e.g., Bonneville, Army Corps of Engineers, and Bureau of Reclamation, FCRPS IMPROVEMENTS AND OPERATIONS UNDER THE ESA—A PROGRESS REPORT, pages 1-2 (Sept. 2013)

<http://www.salmonrecovery.gov/docs/FinalHydroSynthesisWithReview9-20-13.pdf>

²⁶ Many of the facts noted here are from the following documents:

- Bonneville, Army Corps of Engineers, and Bureau of Reclamation, ENDANGERED SPECIES ACT FEDERAL COLUMBIA RIVER POWER SYSTEM COMPREHENSIVE EVALUATION (2013). Available at: <http://www.salmonrecovery.gov/BiologicalOpinions/FCRPSBiOp/ProgressReports/2013ComprehensiveEvaluation.aspx>
- Bonneville, Army Corps of Engineers, and Bureau of Reclamation, RESPONSE TO COMMENTS ON THE 2013 COMPREHENSIVE EVALUATION AND THE 2014-2018 IMPLEMENTATION PLAN (2013). Available at: <http://www.salmonrecovery.gov/BiologicalOpinions/FCRPSBiOp/FinalCEandIP.aspx>

- Between 75 to 99 percent of juvenile fish now pass dams through the highest survival routes and avoid turbines.
 - Fish travel times have also been significantly improved by water management and surface passage, and are now similar to when there were fewer dams or no dams.
 - Juvenile and adult salmon and steelhead survival in the Columbia River system now approximates the survival rates measured in some undammed river systems.
 - Lamprey passage and enhancement efforts are underway at dams and in tributaries, supported by the Program through long-term commitments including the Columbia Basin Fish Accords, and other regional agreements.
- **Habitat Accomplishments:** Federal, state, and tribal partners have protected and restored hundreds of thousands of acres of tributary and estuary fish and wildlife habitat throughout the Columbia River Basin as “offsite mitigation” for the impacts of the FCRPS and other dams. Studies show this landscape-level habitat work is making a difference. Since 2005, Bonneville and its partners have:
 - Reopened or improved access to approximately 2,500 miles of river and stream habitat, more than twice the length of the entire Columbia River.
 - Restored more than 339,785 acre-feet of water to rivers and streams, some of which formerly ran dry when fish needed them most.
 - Installed 373 screens in the Basin, preventing fish entrainment in irrigation diversions.
 - Conducted restoration to increase stream complexity on 263 miles of stream.
 - In the case of wildlife mitigation, since 1980, acquired, protected, or enhanced more than 734,000 acres of habitat—not including most fish habitat projects, compared with the 315,784 acres inundated by the FCRPS. Perpetual wildlife habitat mitigation for construction and inundation effects from 12 FCRPS dams is assured by long-term settlements.
 - **Hatcheries Accomplishments:** Federal, state, and tribal partners have used hatcheries effectively to restore healthy, harvestable fish runs, again as “offsite mitigation” for the FCRPS and other dams. Bonneville-funded mitigation hatchery programs have gone through extensive science reviews, been the subject of Hatchery Genetic Management Plans to implement reforms and best practices, and are supported in *U.S. v. Oregon* agreements with Accord partners.
 - Bonneville has funded states and tribes to reintroduce salmon to areas where they had disappeared, including spring chinook in the Umatilla, Okanogan, and Walla Walla subbasins, coho in the Umatilla and middle and upper Columbia, and burbot in the Kootenai River.

- Bonneville’s Snake River sockeye salmon conservation program began when virtually no sockeye returned to the Sawtooth Valley, and recently runs have exceeded 1000 adults annually at Lower Granite Dam.
- Bonneville-funded hatcheries—such as Cle Elum, Nez Perce, Chief Joseph, and the Lower Snake Compensation Plan hatcheries—contribute to sport and commercial harvest and help address tribal and treaty rights.
- Hatchery conservation programs have collected and preserved virtually 100 percent of the remaining gametes from the ESA-listed Kootenai River white sturgeon.

Collectively, FCRPS mitigation has contributed to an increase in the quantity and quality of habitat, fish productivity and abundance, and opportunity for increased harvest. Bonneville’s Program commitments, including Accords, have complemented fisheries managers’ implementation of the abundance-based harvest commitments in *U.S. v. Oregon*.

12. Legal Considerations

- **Recommendation and Amendment Criteria**

The draft Program includes an ambitious catalog of goals, objectives, strategies, and measures reflecting the wide range of recommendations to the Council. However, it is notable that many of these are based on proposals that lacked detailed information and data in their support,²⁷ and it appears that it will be difficult to see how subsequent amendments based on such recommendations are supported by the best available scientific knowledge and are the alternatives with the minimum costs.²⁸ Rather than belabor the point, Bonneville simply notes this as a program-wide concern the Council should take into consideration.²⁹

- **“In Lieu” Funding**

The draft Program suggests an increasing interest on the part of the Council in Bonneville’s fulfillment of its “in lieu” responsibilities.

The “in lieu” funding provision is an important element of the Northwest Power Act, and is designed to ensure that Bonneville’s customers do not cover the mitigation responsibilities of others, and Congress specifically directed the Bonneville Administrator to address and make decisions on “in lieu” funding concerns. It is

²⁷ 16 U.S.C. § 839b(h)(3).

²⁸ *Id.* §§ 839b(h)(6)(A)-(C).

²⁹ For further reference, Bonneville addressed the same concerns with examples in our 2008 amendment comment letters and attachments.

necessary for Bonneville to assess the “in lieu” legal considerations on a case-by-case basis.³⁰ Although Bonneville rarely invokes the “in lieu” prohibition to explain not funding a measure reviewed and recommended by the Council, on those rare occasions the in lieu issue arises, it is discussed publicly and with the Council. Further elaboration in the Program of the Council’s views on Bonneville’s funding authorities appears unnecessary, considering Bonneville remains willing to continue engaging the Council on this issue.

- **“Compensation” in the Northwest Power Act**

The draft program discusses “compensation” in at least two places, at the bottom of page 12 and in Theme Three on page 28. The Act uses the word compensation one time in the following directive: “Enhancement measures may be used, in appropriate circumstances, as a means of achieving offsite protection and mitigation with respect to compensation for losses arising from the development and operation of the hydroelectric facilities of the Columbia River and its tributaries as a system.”³¹ This is one of the principles to “consider in developing the program,” along with the principle that power consumers bear the cost of measures designed to deal with power impacts only.

Bonneville understands the Act to focus on protecting, mitigating, and enhancing fish and wildlife and their habitats, and by extension Bonneville interprets compensation in the context of supporting specific mitigation efforts to “make up for” or “offset” the effects of the FCRPS on fish and wildlife.

³⁰ See, e.g., letter and enclosures from Gregory K. Delwiche, Bonneville Vice President of Environment, Fish, and Wildlife, to Dr. Tom Karrier, Council Chairman, regarding funding for projects during 2007-2009 (Feb. 13, 2007) available at: <http://efw.bpa.gov/IntegratedFWP/policyframework.aspx>.

³¹ 16 U.S.C. § 839b(h)(8)(A).