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July 9, 2019

DECISION MEMORANDUM

TO: Fish and Wildlife Committee
FROM: Lynn Palensky and Staff
SUBJECT: Mainstem and Program Support Project Review Recommendations

PROPOSED ACTION: Committee recommendations on Mainstem and Program Support Project Review: Project Implementation and Programmatic Issues

SIGNIFICANCE: This project review includes mainstem, basin-wide and Fish and Wildlife Program support projects, many of which have broad application and broad reach, and includes final recommendations for nine research projects reviewed in the 2017/2018 Research Project Progress Review.

BUDGETARY/ECONOMIC IMPACTS

Average annual funding for this set of projects is approximately \$45.4 million based on proposed work. The Council recommends an annual average planning budget of approximately \$43.5 million (see Part 4 for details).

Recommendations in four parts:

- Part 1: Background, Review Summary, and Funding Expectations
- Part 2: Programmatic Issues and Recommendations
- Part 3: Project-Specific Recommendations – further discussion
- Part 4: Project Recommendation Summary Spreadsheet (attached)

Part 1: Background, Review Summary and Funding Expectations

Background

The Mainstem and Program Support Project Review is the second of four sets of reviews in the effort to review the Fish and Wildlife Program (Program)-funded projects over four years. Many of the projects in this review were included in the 2011 Research, Monitoring, Evaluation and Artificial Production [\(RM&E/AP\) review](#), and nine were reviewed as part of the 2018 [Research Project Review](#). Most projects have had several science reviews over the years by the Independent Science Review Panel (ISRP). This Mainstem and Program Support Project Review focused largely on evaluating results and adaptive management, contribution to the Program in terms of providing information, and research and services to inform other parts of the Program. The ISRP reviewed project [proposals](#), annual reports, project publications and past ISRP reviews.

Review Summary

The 2019 Mainstem and Program Support review began in November 2018. The information packet provided to sponsors included background, schedule, and instructions for the review. Summary reports were due from sponsors on January 30, 2019, however, the federal government shut down delayed the submission of several proposals to February and March. The ISRP and Council staff did not organize visits to the project sites for this review. The Council did hold a three-day meeting in late February and on March 18, 2019, with the ISRP and sponsors for project presentations. The preliminary ISRP report ([ISRP 2019-1](#)) was completed on April 4, 2019. The ISRP requested responses for 10 project proposals with point-by-point responses due on April 30, 2019. Public comment on the ISRP reports began April 5, at the completion of the [Preliminary Report](#). The ISRP's Final Report ([ISRP document 2019-2](#)) was complete on May 30, 2019, and public comment closed July 26. All background information on the [review process](#) (schedule, criteria, and process) can be found on the Council's website.

Council Considerations

The Council fully considered the recommendations of the ISRP when making its recommendations and the Council's recommendations are based on sound scientific principles. In making its recommendations, as provided in the Northwest Power Act, the Council considered the "impact of ocean conditions on fish and wildlife populations" and determined "whether the projects employ cost-effective measures to achieve program objectives." Collectively, work recommended is intended to support and implement the Program and is also integrated with the requirements of the Federal Columbia River Power System (FCRPS) Biological Opinion and the commitments made by Bonneville with the parties to the Columbia Basin Fish Accords.

Council Recommendations: Funding Expectations

Multi-year funding Recommendations

Duration: The Council recommends multi-year funding for projects to begin in Fiscal Year (FY) 2020 and extend through the next review cycle. Time between category reviews generally range from three to eight years. A subsequent review could happen prior to or separate from a larger category review depending on the type of project, the project conditions, when the project is due to be completed, and if there is delivery of a product to review prior to a recommendation for additional years of funding. In some cases, out-year funding recommendations are based on the ISRP and Council review of a near term follow-up report or process. Any exceptions to the Council recommended multi-year funding for projects are described in the project-specific recommendations on the attached spreadsheet in Part 4.

Funding level: The Council recommends a set of planning budgets, and in a few cases, specific project budgets. The Project Recommendation Summary Spreadsheet (Part 4), includes sponsor requested budget, Bonneville Start of Year (SOY) budget and the Council's *planning budget*. The Council's *planning budget* represents the approximate annual budget for any one year between 2020 and 2023 (far right column of Part 4 Project Recommendation Summary). In some cases, it represents the average annual budget for four years. The *planning budget* sets an expectation that the recommended work will be funded at or near the level listed in the planning budget column over the next four years.

The Council expects Bonneville to provide the Council the final contracted amount for each project. Until then, the Council will use the *planning budget* amounts as a starting point to assess the impact of subsequent budget changes made or proposed by Bonneville.

The Council's multi-year funding and implementation recommendations are as follows:

1. The ISRP's science review of the projects is sufficient for the duration recommended for the project with three exceptions: 1) when the project recommendation is conditioned upon the ISRP reviewing a deliverable within or at the end of the funding period, or 2) when the Council does not recommend a project despite a favorable ISRP review, or 3) when new components, proposed by any entity, fall outside of the scope or intent of the project at the time of this review. In these cases, the delivered product or the new project components will be reviewed by the ISRP and/or Council, and a funding recommendation may be made by the Council based on this new or supplemental information.
2. Bonneville will provide start-of-year budgets annually for this project portfolio prior to the beginning of each fiscal year. The start-of-year budgets should include 1) how inflation and cost-of-living adjustments are to be applied, if any; 2) how the Council's recommendations were dealt with in contracting; and 3) any significant modifications to the project scope negotiated with the project sponsor. Bonneville will work with the Council to track and follow-up on items or project conditions that require the sponsor to deliver products as part of the funding recommendations.

3. Bonneville will work with sponsors to address ISRP qualifications and other conditions during contracting as recommended by the Council.
4. Bonneville will provide adequate funding to maintain the integrity of the project as reviewed by the ISRP and recommended by the Council.

Fish and Wildlife Program Amendment

The Council is in the process of amending its 2014 Fish and Wildlife Program and anticipates adopting amendments in the winter of 2019. Should there be significant changes in the existing Program that would suggest or require changes in recommendations set forth in this document as adopted by the Council, the Council may choose to revisit these recommendations through its normal public processes.

Accord Project Funding

The Council understands and supports the financial arrangement of the accords. The Council also understands that Accord parties can shift funding around within their accords between projects and between years to meet seasonal needs, expenses, priorities, etc. Bonneville has a Start of Year (SOY) placeholder for each accord-funded project for 2020 and beyond, but the working budget may shift from Bonneville's SOY. A Council planning budget is listed for each project in the summary table - Part 4. For accord projects, the Council used the funding request made by the sponsor in the proposal form when it was different than Bonneville's SOY placeholder. The Council will review all project budgets for potential science and policy implications, particularly in cases where Bonneville's SOY budget has fluctuated significantly from Council planning budgets.

Part 2: Programmatic Issues and Recommendations

Part 2 Identifies a subset of cross-cutting programmatic issues that apply to a group of similar or related projects. While the ISRP identified several programmatic issues in its final report, many of the issues are being addressed through different workgroups (e.g. Hatchery), processes (e.g. project budget tracking), directly in project recommendations, or are planned for a more appropriate time in the future. In some cases, the Council recommendations address more than one ISRP programmatic issue. The programmatic issues include a discussion, a recommendation, and a table of projects that are associated with the issue.

The Council's recommendations on the programmatic issues are to be afforded the same weight as the project-specific recommendations (in Parts 3 & 4). Programmatic issues apply to a subset of projects indicated in both the programmatic issues section as well as in the project recommendations in Part 4 (Project Recommendation Summary Spreadsheet). The programmatic issues covered below include:

- 1. Hatchery-related work**
- 2. Data Management and Information**
- 3. Research Projects - Information Sharing and Reporting**
- 4. Project Objectives and Adaptive Management**

1. Programmatic Issue: Hatchery-related work

Issue: The Fish and Wildlife Program supports several hatchery programs and hatchery-related research projects to mitigate for hydrosystem impacts to anadromous and resident fish. Most of these projects have undergone numerous reviews and continue to improve operations and fine-tune production to meet Program goals. This review addresses several projects closely associated with artificial production in the Program. Most of the hatchery projects will be reviewed as part of the upcoming 2021 Habitat and Hatchery Review.

In this review, the ISRP raised concerns regarding artificial production activities ([ISRP document 2019-2](#)), similar to the concerns identified in previous reviews ([see ISRP document 2018-8](#) and 2011 RME/Artificial Production review). As part of its June 2011 decision in the RME/AP review and recommendation the Council called for the federal, state and tribal agencies to design and implement a regionally coordinated approach to monitor and evaluate the effectiveness and impact of artificial production. It was envisioned that a regionally coordinated approach would build on previous efforts and develop reporting metrics to be consistently used by hatchery managers. In late 2011, NOAA and Bonneville deferred this effort and to date no progress has been made in developing a regionally coordinated approach for evaluating and reporting on hatchery efforts in the Basin.

Artificial fish production activities for resident and anadromous fish are vital to the near-term and long-term success of Columbia River fish mitigation while minimizing impacts on, or benefiting, wild fish. As the Council focuses more on assessing Program performance, there remains a need to assess and report on the value and successes of artificial production activities in meeting mitigation and conservation objectives for the Program and more broadly throughout the Basin.

To this end, to address fish propagation needs and priorities in the basin, Council staff has been exploring the potential for an informal hatchery workgroup with the Regional Coordination Forum and other regional groups to foster communication among researchers, managers, and decision-makers. The Council is exploring the role that the informal hatchery workgroup could play in aligning artificial production activities with the fish propagation needs and priorities in the basin. As part of the informal hatchery workgroup, the Council may also refine the hatchery performance metrics and indicators needed for improved evaluation and reporting on hatchery programs.

In this review there are three research based projects that the ISRP reported each met science review but questioned how the sponsors prioritized their work and how they provided research results to hatchery managers (Project #1989-096-00, Genetic Monitoring and Evaluation (M&E) Program for Salmon and Steelhead, Project #2002-031-00 Growth Modulation in Salmon Supplementation, and Project #1993-056-00, Advance Hatchery Reform Research). Therefore, the Council recommends that each of these project sponsors submit to the Council a report detailing how their work will inform and assist artificial production activities in the basin and submit the report prior to the 2021 Habitat and Hatchery Category Review. This report will be considered by the ISRP and the Council to assess and ensure the project is value-added to the Program and program-funded hatcheries. Depending on the progress made by the informal hatchery workgroup, it may also contribute to assessing the role and objectives of these three projects.

Council Recommendation:

1. Project sponsors for Project #1989-096-00, Project #2002-031-00, and Project #1993-056-00 will each submit to the Council a report detailing how their work will inform and assist artificial production activities in the basin. The report will include a timeline for current and anticipated research, and will be submitted to the Council by September 30, 2020, ahead of the 2021 Habitat and Hatchery Review.
2. The Council will continue to work with informal hatchery workgroup to foster communication among researchers, managers, and decision-makers to address fish propagation needs and priorities in the basin.

The projects listed below will be reviewed as part of 2021 Habitat and Hatchery Category Review. At that time, the Council will confirm their out-year status and evaluate their alignment with the Program.

| Project # | Title |
|-------------|---|
| 1989-096-00 | Genetic Monitoring and Evaluation (M&E) Program for Salmon and Steelhead |
| 1991-029-00 | Research, monitoring, and evaluation of emerging issues and measures to recover the Snake River fall Chinook salmon ESU |
| 1993-056-00 | Advance Hatchery Reform Research |
| 2002-031-00 | Growth Modulation in Salmon Supplementation |
| 2005-002-00 | Lower Granite Dam Adult Trap Operations |
| 2008-105-00 | Selective Gear Deployment |
| 2008-527-00 | Zone 6 Fisheries CRITFC Accord project |
| 2008-710-00 | Chum Salmon Restoration in the tributaries below Bonneville Dam |
| 2010-036-00 | Lower Columbia Coded Wire Tag (CWT) Recovery Project |

2. Programmatic Issue: Data Management and Information

Issue: The Fish and Wildlife Program funds several regional and subregional data and information management projects. These projects are critical to supporting the Program’s data management, analysis, access, and communication functions. Most of these projects have undergone numerous reviews and continue to evolve. As the Program increases its focus on information sharing and performance assessment it is important to fully support these projects, which provide the Council with critical Program data and information. Data stewards, and related collaborative efforts such as the Coordinated Assessments, are also necessary in the successful sharing of information to regional databases/repositories that provide Program data and information.

In their programmatic comments, the ISRP highlighted the importance of supporting regional and sub-regional data management, storage and dissemination of information necessary for Program implementation and assessment. The ISRP emphasized that intentional planning for, and dedication of funding is necessary to address 1) information sharing for informing decisions, and 2) keeping pace with new technologies and knowledge through workshops and other learning experiences. The ISRP also stressed the importance of balancing investments in data *collection* with investments for data *processing* (data management, analysis, data steward expertise/support) and *communication* of information. To facilitate data sharing and reduce redundancy, the ISRP recommended development of a summary matrix to communicate the types of data available on different databases and how these data are accessed. The Council agrees and recommends hosting a subcommittee to the Regional Coordination Forum that will address the ISRP programmatic comments and develop an approach for addressing Program performance assessment reporting needs. See Part 3 for project specific recommendations.

Council Recommendation:

1. Following the adoption of the 2020 Fish and Wildlife Program Addendum, the Council will convene a Data Management and Information (DMI) subcommittee under its Regional Coordination Forum. The subcommittee will build upon the work of the Council's 2012 [Program Evaluation & Reporting Committee](#) and the DMI subcommittee will complete its work by December 2022.

The subcommittee will address the following needs:

- communicate the role of the regional and sub-regional databases/repositories in providing public access to information derived from Program funded projects, including developing a summary matrix by leveraging existing processes and tools (e.g., PNAMP's monitoringresources.org repository/database list).
- identify the primary regional databases/repositories to house information supporting the Program (e.g., indicators, protocols, technical documents, digital media, etc., etc.). These can be BPA and non-BPA funded databases/repositories.
- address efficient flow of information between regional and subregional databases/repositories, and projects collecting and analyzing data.
- agree on the needed data exchange standards (e.g. Coordinated Assessments effort)

The subcommittee will include participation from the seven regional and sub-regional Program projects identified in the table below. These projects manage data and information.

2. Bonneville should include in project contracts, provisions requiring collaboration with the regional data management and information projects. (e.g., development of data exchange standards)

| Project # | Project Title |
|------------------|---|
| 1988-108-04 | StreamNet |
| 2004-002-00 | Pacific Northwest Aquatic Monitoring Partnership Coordination |
| 2008-505-00 | StreamNet Library |
| 2008-507-00 | CRITFC Inter-Tribal Monitoring Data |
| 2011-020-00 | Intermountain Province /Pend Oreille Subbasin Data Management Project |
| 1996-019-00 | Data Access in Real Time (DART) |
| 1994-033-00 | Fish Passage Center |

3. Programmatic Issue: Research Projects - Information Sharing and Reporting

Nine projects included in this review were also part of the [2018 Research Progress Review](#), and the Council's recommendations regarding sharing information and reporting on research is reiterated here as a programmatic issue to carry forward for these nine projects. As explained as part of the 2018 Research Progress Review, to advance the region's understanding of critical uncertainties, research projects have an obligation to share their findings in a manner that can best inform regional efforts and the Council's Program Strategies and measures. This is particularly true for research projects with broad applicability.

The Council continues to emphasize the need to improve the tracking of research to understand gaps and assess progress in resolving critical uncertainties, and, therefore, carries forward and incorporates in this review, the recommendations from the 2018 Research Progress Review, with minor edits to the recommendations for clarity.

Council Recommendation:

1. Sponsors will submit a draft **annual** project report to Bonneville in January, using Bonneville's research reporting template, and, by March of each year Bonneville will make the final report available on Cbfish.org.
2. Bonneville will provide the Council annual reports each year around May, following the reporting steps outlined in the [2017 Research Plan's](#) section B. The Council will then consider opportunities for presentations either as part of an evaluation or for information sharing.
3. The Council will consider the results of critical uncertainties research at a programmatic level to determine what progress is being made. To this end, the Council will, as necessary, sponsor forums, workshops, or conferences for review and synthesis of topics; request ISAB synthesis for certain topics; or request syntheses from project researchers.
4. Bonneville will work with sponsors to support sponsor participation in key regional scientific conferences and workshops, particularly for research projects that have broad application.
5. Sponsors will provide to the StreamNet Library an updated list of the full bibliographic citation of their peer-reviewed scientific publications and "grey" literature that summarizes their results such as technical reports, consultants' reports, and agency documents. In this list, the sponsors will identify the Council's 2017 Research Plan critical uncertainties being addressed by each of their publications. This updated list will be provided annually to StreamNet Library along with electronic copies of "grey" literature documents. The Library should organize the information by critical uncertainties topic in its [Digital Collections](#), and by other means the Library determines as appropriate.

6. Bonneville, working with the Council and other Program participants, will identify, organize and track all research within Bonneville’s project database. When projects include both research and monitoring and evaluation elements, the research components should be tracked as part of these coordinated research efforts. Additionally, the Council will continue updating the 2017 Research Plan Uncertainties Database to track progress in resolving uncertainties and identify gaps.

| Project # | Project Title |
|-------------|--|
| 1997-024-00 | Avian Predation on Juvenile Salmonids |
| 1989-096-00 | Genetic Monitoring and Evaluation (M&E) Program for Salmon and Steelhead |
| 1993-056-00 | Advance Hatchery Reform Research |
| 2002-031-00 | Growth Modulation in Salmon Supplementation |
| 2007-252-00 | Hyporheic Flow Assessment in Columbia River Tributaries |
| 2016-001-00 | BPA Project Action Effectiveness Monitoring (AEM) Programmatic |
| 2002-037-00 | Freshwater Mussel Research and Restoration |
| 1983-319-00 | New Marking and Monitoring Technologies |
| 1998-014-00 | Ocean Survival of Salmonids |

4. Programmatic Issue: Project Objectives and Adaptive Management

The ISRP notes two concerns that persist throughout the review processes – the lack of quantitative objectives and the lack of developed (or described) adaptive management processes. The ISRP has consistently identified both concerns over the years and most recently offered guidance and recommendations to address them in the comments section of the 2017 Wildlife category Review. In that review, the ISRP suggested using existing projects that had well-developed objectives and adaptive management plans as an example for future webinars.

The Council and staff continue to explore ways to improve the connections between the Program objectives and project objectives, including in the draft amendments to the 2014 Fish and Wildlife Program, which focus on two key aspects of the Council’s program: how the Program is implemented and how we assess and report on Program performance. The Council is on target for adopting an amended program at the end of December 2019 or January 2020.

Moreover, in this review process, Council staff worked with partners to develop [guidance](#) for *objectives development* for sponsors to use in completing the project review proposal form. Staff also streamlined the objectives section of the proposal form. Staff will continue to refine the instructions for those proposal sections based on user feedback/experience and ISRP comments. Staff and Bonneville agree that sponsors should have measurable,

task-based or biologically based objectives to measure progress in meeting management objectives.

Council Recommendation:

1. Ahead of the next review for Resident Fish and Wildlife and Sturgeon, Council staff will:

- work with Bonneville to improve the connections between the proposal form objectives and the final contract scope of work to improve tracking; and
- hold a webinar for sponsors on developing objectives and an adaptive management plan.

PART 3: Project-Specific Recommendations – further discussion

➤ *Ocean Survival of Salmonids - Project # 1998-014-00*

The Council's research and monitoring efforts related to the marine environment for anadromous fish began in 1998 in response to the 1996 amendment to the Northwest Power Act, which calls on the Council to consider ocean conditions when making project funding recommendations. The Council's 2014 Fish and Wildlife Program recognizes the ocean environment as an integral component of the Columbia River ecosystem. Measures in the Program support monitoring the ocean conditions and in-river restoration actions to determine those actions of greatest benefit, to separate the effects of ocean-related mortality from that caused in the freshwater part of the life cycle, and to assess salmonid survival and evaluate restoration potential given variable ocean conditions. In 2012, the ocean program was reduced from the two projects recommended by the Council to one (60% reduction in program ocean work-elimination of the Canadian-USA Shelf Salmon Survival Study), and the remaining single project's budget (Ocean Survival of Salmonids) has been reduced by Bonneville 53% since the Council's project review recommendation in 2011. NOAA Fisheries, the project sponsor, has indicated that the current funding level will cause a rescoping of the project in 2020, further reducing the effort. In this proposal, NOAA Fisheries provided three alternative scopes of work and budgets for project implementation recognizing the budgetary constraints.

- Option A represents the current project funding level (approx. \$1M) and the sponsor indicates that this funding level cannot maintain all the current field and laboratory aspects of the project, thus some objectives will be dropped from the project under this option. Option A will maintain only simple correlations between salmon and their environment, with one field survey in June.
- Option B (approx. \$1.5 M) will generally maintain the *current* project scope with some expanded effort on avian predators and salmon prey. The project would continue to consider freshwater management implications on ocean survival, continue working to understand the biological and physical mechanisms underlying correlations, and work would continue to develop an ecosystem model that will allow for testing various freshwater management actions.
- Option C (approx. \$2M) will provide the same elements as Option B and include testing of hypotheses critical to understanding the predator-prey interactions and mechanisms that control early ocean survival of juvenile salmonids with acoustics and expanded predator surveys. This option provides a more comprehensive assessment of predator-prey mechanisms than Option B.

The ISRP noted in recent reviews that the Ocean Survival of Salmonids project is an example of an excellent long-term monitoring project investigating factors that influence the early ocean distribution, timing and survival of salmonids. The key finding is that ocean conditions are highly influential and highly predictive of salmon returns, and ocean conditions can conceal the effects of local restoration actions. These findings are important in the development of models used to investigate the impact of different proposed management actions (for example, additional spill or habitat restoration actions) over the entire salmonid life cycle. In their final Report: Mainstem and Support

Category Review, the ISRP further noted that the significance of this ongoing project to the region and to mitigation and management of Columbia River salmon and steelhead is widely recognized and cannot be overstated. The Council agrees. Extending the 21-year dataset and addressing the proposed objectives are critical to understanding how management actions in the Basin may increase salmonid survival at sea.

Council Recommendation:

1. Bonneville to implement Option B for Ocean Survival of Salmonids, as proposed by the sponsor, at the funding level identified by the sponsor (approx. \$1.5M) and maintain the current project scope that includes additional effort on avian predators and salmon prey. The project should continue to consider freshwater management implications on ocean survival, continue working to understand the biological and physical mechanisms underlying correlations and continue to develop an ecosystem model that will allow for testing various freshwater management actions.

➤ *BPA Project Action Effectiveness Monitoring (AEM) Programmatic Project # 2016-001-00*

While the ISRP finds this project ‘Meets scientific review criteria’, in their comments, the ISRP encourages the sponsor to present updated results to the ISRP in the upcoming years ahead of the 2020/2021 Habitat and Hatchery Review. The ISRP also noted that the utility of these assessments is limited by the small number of remaining sites in the “partial barrier removal” action category, and the small number of sites and large range of practices in the “floodplain restoration” action category. Thus, the ISRP questioned the value of continued studies for these two action categories. Given the ISRP concerns, from a policy perspective, the Council recommends that Bonneville discontinue funding for further data collection on these two action categories and adjust the budget accordingly.

Council Recommendation:

1. Discontinue additional data collection on partial barrier removal and floodplain restoration action categories. Bonneville and sponsor to adjust the scope of work and budget accordingly to continue implementation of remaining activities for completion in FY 2023. For any work beyond FY 2023, sponsor must submit a new proposal for ISRP and Council review.

➤ *PIT-Tag O&M and R&D Projects*

The three projects listed in the table below all contribute to the Program’s PIT-Tag operation and maintenance (O&M) or research and development (R&D) projects that aim to quantify fish in and out migration in the Basin. Each of the projects was found to “Meet science criteria” by the ISRP. The projects collectively support Program goals and the Basin’s managers are dependent on the information provided by these projects. To promote cost-effective means of managing equipment, collecting data and advancing technology and effectiveness of equipment, the Council recommends that sponsors

enhance collaboration and coordination with each other to learn and share expertise, which is reflected in the Council recommendation for all three projects.

It is essential for these projects to employ effective communication and engagement with the fish managers benefiting from their R&D (PIT-Tag Technology and data management) and relying on their O&M services. This engagement will help align the project objectives with the needs of the managers (e.g., new technology to address challenging monitoring situations) and to receive feedback for improving the services provided to the managers (e.g., automated data transfer). The Council recommends that the sponsors explore options discussed during the October 16-17, 2018 workshop on Tributary PIT Tag Arrays in the Columbia Basin for enhancing interactions between users and the PIT-tag array O&M and R&D projects. This could include establishing a technical sub-committee under the PTAGIS Steering Committee, using the PTAGIS newsletter, and reactivating PTAGIS online forum for in-stream communication.

Council Recommendation:

1. Sponsors will describe in their next annual report how they are improving coordination among their projects and improving communication with managers utilizing PIT-Tag arrays and related technology.

| Project # | Project Title |
|-------------|--|
| 1983-319-00 | New Marking and Monitoring Technologies |
| 1990-080-00 | Columbia Basin Pit-Tag Information |
| 2018-002-00 | Integrated In-stream PIT tag Detection System Operations and Maintenance |

➤ *Columbia Basin Water Transactions - Project #2002-013-01*

The ISRP’s review found that the Water Transaction Program meets science criteria. Two concerns reflected in the ISRP comments were related to achieving objectives and being more specific about project benefits. The Council recommends the sponsor consider these and all ISRP comments moving forward in implementation. However, there are two specific issues for this project for the Council’s consideration that are not science-related, but rather concern budget and contracting.

First, the sponsor requested \$1.15 million dollars per year over the Bonneville ceiling, which is based on anticipated transactions each year for the next few years. The Council recommends moving forward with the FY 2020 SOY budget reflected in the Council Planning Budget Column in Part 4.

Second, most of the fish and wildlife projects have single year contracts with Bonneville. However, land and water transactions of this nature require additional planning and certainty to be able to successfully negotiate deals with landowners. Transactions may take months and even years to develop and negotiate. Beginning in FY 2020, the Council

recommends that Bonneville issue two-year contracts with the administrator of this program to increase certainty and confidence in funding for developing and finalizing transactions.

Council Recommendation:

1. Continue implementation considering ISRP comments and with the following qualifications: continue to build out the Monitoring Framework to help quantify benefits of water instream; continue to work on compiling data that illustrates progress in each river system toward meeting flow targets and cumulative impacts; and, continue to work with the program habitat restoration implementers to coordinate fish and habitat work.
2. Bonneville to fund the Columbia Basin Water Transactions Program at or above the Council planning budget of \$5,223,985 per year under two-year contracts.
3. Bonneville will issue two-year contracts with the Columbia Basin Water Transactions Program administrator beginning in FY 2020.

➤ *Conservation Enforcement Projects*

Fisheries conservation enforcement projects are included in this review and are unlike most other projects in the Program. They are, however, integral to fisheries management. In the past, the Program funded fisheries enforcement of the states and tribes. Since 2008 only tribal enforcement work under the Fish Accords has received funding. A fourth project sponsored by the Yakama Nation could come forward in a future review process, but it was not developed in time for this review. For the three projects that are underway (see below), current funding is just over \$1 million.

| Project # | Project Title |
|------------------|---|
| 2007-390-00 | Tribal Conservation Enforcement -Umatilla Tribe |
| 2007-391-00 | Tribal Conservation Enforcement-Columbia River Inter-tribal Fish Commission |
| 2008-106-00 | Tribal Conservation Enforcement-Colville Tribe |

The ISRP suggests that these projects are not amenable to science review, but shared several comments regarding evaluation performance, outcomes and lessons learned. The Council agrees that while these projects may not be amenable to science review, they are important projects, of interest to the region and should be reported on to the Council.

With any enforcement and investigative work, it is important to track and understand what the risks, threats and trends are in illegal actions and behaviors, and what changes can be made to reverse the trends. It is also important to get officers the tools and training they need to be most effective. Improvements to reverse trends and risks could be in the

form of education, increased patrols, special equipment, public engagement, agreements, and legislation.

Council Recommendation:

1. Bonneville will continue funding the fisheries conservation enforcement projects at the proposed funding level.
2. Beginning in 2020, Bonneville will work with sponsors to develop a reporting plan for conservation projects for Council review instead of a science review from the ISRP.
 - The reporting plan should summarize annual reports, describe any notable accomplishments that have broad impact, and include recommendations to improve fisheries enforcement efforts (e.g. education, training, increased patrols, special equipment, public engagement, agreements and legislation). The conservation projects should begin reporting to the Council in 2021 when annual project reports are due.

➤ *Columbia Basin Bulletin - Project # 1998-004-01*

The Columbia Basin Bulletin (CBB) is a unique source of information sharing in the Basin. Designed to “provide information about fish and wildlife issues important to Columbia River Basin fish and wildlife policy development” the CBB receives broad and, reportedly, steadily increased use. CBB serves as a major outlet for the dissemination of information about restoration and environmental developments in the Basin, including the outcomes of Council meetings and other negotiations taking place among agencies, tribes, and parties operating in the Basin. There are no similar information/technical transfer products with the timeliness, public accessibility, and range of subjects as those provided by the CBB.

The Council is encouraged that CBB initiated a new subscription service that began in May 2019. Since this is a new business model that will take some time to develop and prove viable, the Council recommends a *smart* transition process that will allow funding stability during the startup phase of the service. The Council recommends that Bonneville continue to provide funding at the current level through the end of FY 2020 with the goal of close-out by 2021, and the hope that the CBB proves self-sustaining as a subscription service. To assess progress and success of the subscription service, the Council would like an update from the sponsor in March 2020. After a review of the progress update, the Council will make a funding recommendation to Bonneville for FY 2021.

Council Recommendation:

1. Bonneville to continue to fund the CBB at the current level (\$74k) through FY 2020 to transition project to new subscription services.
2. Sponsor to report to Council and Bonneville on status and operation of subscription service in March 2020 to inform a funding decision for FY 2021.

➤ *Yakama Action Effectiveness Monitoring – Project # 2017-003-00*

The Yakama Nation proposed a pilot study - Yakama Action Effectiveness Monitoring - to improve their understanding of the basic design and monitoring of restoration effectiveness. The ISRP found that this project 'Meets scientific review criteria, Qualified'. The ISRP qualified their findings and recommended that the sponsor address the ISRP's concerns in their next annual report and, within a year, present to the ISRP an overview of progress and challenges. In their comments, the ISRP had concerns that "...project-scale monitoring will measure the effects of only one specific project at a specific site (essentially a case study), which cannot be generalized to other sites or be used to develop strategies or for prioritization."

Based on the ISRP review, the Council believes that the project's value to the Program would increase by implementing a monitoring approach that evaluates the collective benefit of habitat actions at a watershed scale. To address the ISRP qualifications and support the Program, the sponsor should consider revising the monitoring plan to use habitat limiting-factors-based approach to monitor restoration effectiveness at a watershed scale. The Council is willing to work with the project sponsor on a revised plan.

Council Recommendation:

1. After one year of implementation, sponsor will develop a report that addresses the ISRP qualifications to be submitted to the Council (and ISRP) for review and recommendations regarding out-year implementation. The report is to include responses to the ISRP qualifications that:
 - Provide details on how results of the Project Annual Review (PAR) will be documented and used in the adaptive management process.
 - Clarify the details of how information from the project objectives, the monitoring activities, and the evaluation of various activities will feed into the adaptive management program. What are the mechanisms for doing this?
 - Address the issue of how results of a case study will be used to prioritize landscape scale needs.

Project Title Changes

➤ *14 proposed project name changes*

As part of this review and included in the project proposal form, sponsors could suggest a name change for their project(s). As mentioned in the background section above, most of these projects have been ongoing for many years and have evolved over time. Fourteen project name changes were requested on the proposal form (see table below). For the historical record and tracking purposes, the project numbers should remain the same (unless a merger occurs). However, the Council encourages Bonneville to work with the

sponsors to update the project names to reflect the project more accurately using the name updates requested.

Council Recommendation:

1. Bonneville will work with sponsors on proposed project title changes that reflect a more accurate description of proposed work and make changes in CBFish.org. Updated project titles should not change project numbers.

| Project # | Project Title | New title (proposed) |
|------------------|---|--|
| 1993-056-00 | Advance Hatchery Reform Research | Research to Advance Hatchery Reform |
| 2008-710-00 | Chum Salmon Restoration in the tributaries below Bonneville Dam | Integrated Strategy for Chum Salmon Restoration in the Tributaries Below Bonneville Dam |
| 2004-002-00 | Pacific Northwest Aquatic Monitoring Program (PNAMP) Coordination | Pacific Northwest Aquatic Monitoring Partnership Coordination |
| 2008-505-00 | StreamNet Regional Library | StreamNet Library |
| 2008-507-00 | CRITFC Inter-Tribal Monitoring Data | Inter-Tribal Data Monitoring (ITMD) |
| 2011-020-00 | Data Management Project | Intermountain Province/Pend Oreille Subbasin Data Management Project |
| 1989-107-00 | Statistical Support for Salmon | Statistical Support for Salmonid Survival Studies |
| 2017-003-00 | Yakama Action Effectiveness Monitoring | Yakama Nation Upper Columbia Monitoring Project |
| 1983-319-00 | New Marking and Monitoring Technologies | Development and Evaluation of Fish Tracking Technologies |
| 1993-029-00 | Survival Estimate for Passage through Snake and Columbia River Dams and Reservoirs | Survival Estimate for the Passage of Juvenile Salmonids through Snake and Columbia River Dams and Reservoirs |
| 1991-029-00 | Research, monitoring, and evaluation of emerging issues and measures to recover the Snake River fall Chinook salmon ESU | Snake River fall Chinook salmon research and monitoring |
| 2017-005-00 | Lamprey Conservation Initiative | Pacific Lamprey Conservation Initiative, Columbia River Basin Projects |
| 2007-390-00 | Tribal Conservation Enforcement-Umatilla Tribe | Tribal Conservation Enforcement-Confederated Tribes of the Umatilla Indian Reservation |
| 2002-013-01 | Water Entity - CBWTP | Water Entity - Water Transaction Program |

**PART 4: Project Recommendation Summary Spreadsheet
(Attachment 1)**

**Part 4: Mainstem and Program Support
Project Review Summary**

July 2019

| | A | B | D | F | H | I | M | N | O |
|---|-------------|--|---|---------------|---------------------------|--|------------------------|--------------------|-------------------------|
| | Project # | Project Title | Sponsor | ISRP Criteria | Programmatic Issue | Council recommendations | FY2020 Sponsor Request | FY2020 BPA Ceiling | Council planning budget |
| 1 | 1982-013-01 | Coded Wire Tag Pacific States Marine Fisheries Commission | Pacific States Marine Fisheries Commission | Yes | | Continue implementation through the next review cycle. | \$404,338 | \$374,313 | \$404,338 |
| 2 | 1983-319-00 | New Marking and Monitoring Technologies | National Oceanic and Atmospheric Administration | Yes | Research | Continue work through the next review. Sponsors will describe in their next annual report how they are improving coordination among their projects, and communication with managers utilizing PIT-Tag arrays and related technology. Also see Part 3: Project-Specific Recommendations. See Programmatic issue for Research Projects. | \$867,160 | \$867,216 | \$867,160 |
| 3 | 1987-127-00 | Smolt Monitoring by Non-Federal Entities | Fish Passage Center, PSFMC, CRITFC, ODFW, WDFW, IDFG, USFWS | Yes | | Continue implementation through next cycle and consider ISRP comments regarding interaction among fish tagging projects. | \$2,942,823 | \$2,851,687 | \$2,942,823 |
| 4 | 1988-108-04 | StreamNet | Pacific States Marine Fisheries Commission | Yes | Data Mgmt and Information | Continue work through the next review and (1) expand steering committee membership to state/tribal/federal agencies managing fish data; and (2) initiate work on other priority program indicators including hatchery indicators DES and sharing (track informal Hatchery workgroup for relevant guidance - see hatchery programmatic). See Programmatic issue for Data Management and Information. | \$2,002,970 | \$2,002,970 | \$2,145,483 |
| 5 | 1989-096-00 | Genetic Monitoring and Evaluation (M&E) Program for Salmon and Steelhead | National Oceanic and Atmospheric Administration | Yes | Hatchery and Research | Continue implementation considering ISRP comments. Sponsor to submit to Council a report including a timeline for current and anticipated research by September 30, 2020, ahead of the 2021 Habitat and Hatchery Review. The report will also be considered by the ISRP and Council ahead of the review to assess and ensure value-added to the program-funded hatchery programs. See Programmatic issues for Hatchery-related work and for Research Projects. | \$439,058 | \$439,058 | \$439,058 |
| 6 | | | | | | | | | |

**Part 4: Mainstem and Program Support
Project Review Summary**

July 2019

| | A | B | D | F | H | I | M | N | O |
|----|-------------|---|--|---------------|--------------------|---|------------------------|--------------------|-------------------------|
| | Project # | Project Title | Sponsor | ISRP Criteria | Programmatic Issue | Council recommendations | FY2020 Sponsor Request | FY2020 BPA Ceiling | Council planning budget |
| 1 | 1989-107-00 | Statistical Support For Salmon | University of Washington | Yes | | Continue implementation through next review cycle. Sponsor to coordinate efforts with other projects determining smolt survival and SARs to address ISRP programmatic on examining the strengths, weaknesses, and causes of variability in SAR estimates. Sponsor to describe in next annual report to Bonneville (1) process to identify Bonneville/fish managers statistical needs, (2) prioritization of requests, (2) engagement of fish managers in development of analytical tools, especially fish managers providing the primary data use, (4) reconciling/coordinating with similar data analysis/tools from Bonneville funded projects, and (5) plan to distribute completed tools to relevant regional processes/entities. | \$232,374 | \$232,374 | \$232,374 |
| 7 | 1990-077-00 | Development of Systemwide Predator Control | Oregon Department of Fish and Wildlife, Pacific States Marine Fisheries Commission | Qualified | | Continued implementation through FY 2020 with a plan and timeline to address the ISRP qualification and a plan to minimize "take" by electrofishing. This plan to be developed and submitted to Council and ISRP for review by August 2020. | \$4,384,622 | \$4,384,624 | \$4,384,622 |
| 8 | 1990-080-00 | Columbia Basin Pit-Tag Information System | Pacific States Marine Fisheries Commission | Yes | | Continue work through the next review. Explore archiving the PIT Tag Forecaster if it is no longer needed. Sponsors will describe in their next annual report how they are improving coordination among their projects, and communication with managers utilizing PIT-Tag arrays and related technology. Also see Part 3: Project-Specific Recommendations. | \$2,510,636 | \$2,510,636 | \$2,510,636 |
| 9 | 1991-029-00 | Research, monitoring, and evaluation of emerging issues and measures to recover the Snake River fall Chinook salmon ESU | US Geological Survey | Yes | Hatchery | Continue implementation through next review cycle, and address ISRP qualifications in next annual report. Given the relationship of this work project to the fall chinook production efforts in the Snake River, this project will be considered in context during the 2021 Habitat and Hatchery Review. See Programmatic issue for Hatchery-related work. | \$1,366,605 | \$1,366,605 | \$1,366,605 |
| 10 | 1991-051-00 | Modeling and Evaluation Statistical Support for Life-Cycle Studies | University of Washington | Yes | | Continue work through the next review and, sponsor to describe in next annual project report to Bonneville (1) process to identify Bonneville/fish managers statistical needs, (2) prioritization of requests, (2) engagement of fish managers in development of analytical tools, especially fish managers providing the primary data use, (4) reconciling/coordinating with similar data analysis/tools from Bonneville funded projects, and (5) plan to distribute completed tools to relevant regional processes/entities. | \$423,643 | \$423,643 | \$423,643 |
| 11 | | | | | | | | | |

**Part 4: Mainstem and Program Support
Project Review Summary**

July 2019

| | A | B | D | F | H | I | M | N | O |
|----|-------------|--|---|---------------|---------------------------|--|------------------------|--------------------|-------------------------|
| 1 | Project # | Project Title | Sponsor | ISRP Criteria | Programmatic Issue | Council recommendations | FY2020 Sponsor Request | FY2020 BPA Ceiling | Council planning budget |
| 12 | 1993-029-00 | Survival Estimate for Passage through Snake and Columbia River Dams and Reservoirs | National Oceanic and Atmospheric Administration | Qualified | | Continue implementation through next review cycle and respond to ISRP qualifications: Sponsor to coordinate efforts with other projects determining smolt survival and SARs to address ISRP programmatic on examining the strengths, weaknesses, and causes of variability in SAR estimates. | \$1,725,017 | \$1,725,017 | \$1,725,017 |
| 13 | 1993-056-00 | Advance Hatchery Reform Research | National Oceanic and Atmospheric Administration | Yes | Hatchery and Research | Continue implementation considering ISRP comments. Sponsor to submit to Council a report including a timeline for current and anticipated research by September 30, 2020, ahead of the 2021 Habitat and Hatchery Review. The report will also be considered by the ISRP and Council ahead of the review to assess and ensure value-added to the program-funded hatchery programs. See Programmatic issues for Hatchery-related work and for Research projects. | \$610,078 | \$594,203 | \$594,203 |
| 14 | 1994-026-00 | Pacific Lamprey Research and Restoration Project | Umatilla Confederated Tribes, National Oceanic and Atmospheric Administration | Qualified | | Sponsor to address ISRP qualifications in next annual report; Project to implement per August 2018 Council recommendation regarding the Pacific Lamprey Master Plan. Continue to participate in collaborative regional lamprey efforts including the Lamprey Technical Work group, Conservation Agreement and the Tribal Pacific Lamprey Restoration Plan. | \$898,550 | \$898,550 | \$898,550 |
| 15 | 1994-033-00 | Fish Passage Center | Fish Passage Center, PSFMC, CRITFC, ODFW, WDFW, IDFG, USFWS | Yes | Data Mgmt and Information | Continue implementation through next review cycle and consider ISRP comments. See Programmatic Issue for Data Management and Information. | \$1,775,092 | \$1,650,848 | \$1,775,092 |
| 16 | 1996-019-00 | Data Access in Real Time (DART) | University of Washington | Yes | Data Mgmt and Information | Continue implementation through next review cycle. See Programmatic issue for Data Management and Information. | \$293,939 | \$293,938 | \$293,939 |
| 17 | 1996-020-00 | Comparative Survival Study (CSS) | Fish Passage Center, PSFMC, CRITFC, ODFW, WDFW, IDFG, | Yes | | Continue implementation through next review cycle. Sponsor to coordinate efforts with other projects determining smolt survival and SARs to address ISRP programmatic on examining the strengths, weaknesses, and causes of variability in SAR estimates. | \$1,675,336 | \$1,521,609 | \$1,675,336 |
| 18 | 1997-024-00 | Avian Predation on Juvenile Salmonids | Oregon State University, Real Time Research | Yes | Research | Continue implementation through the next review cycle and consider ISRP comments. See Programmatic issue for Research Projects | \$1,252,334 | \$535,341 | \$535,341 |

**Part 4: Mainstem and Program Support
Project Review Summary**

| | A | B | D | F | H | I | M | N | O |
|----|-------------|--|---|---------------|-----------------------|--|------------------------|--------------------|-------------------------|
| 1 | Project # | Project Title | Sponsor | ISRP Criteria | Programmatic Issue | Council recommendations | FY2020 Sponsor Request | FY2020 BPA Ceiling | Council planning budget |
| 19 | 1998-004-01 | Columbia Basin Bulletin | Intermountain Communications | N/A | | Bonneville to continue funding project at current level (\$74k) through FY 2020 to transition project to be self-sustaining through new subscription services to readers. Sponsor to report to Council and Bonneville on status and operation of subscription service in March 2020. Also see Part 3: Project-Specific Recommendations. | \$148,412 | \$74,206 | \$74,206 |
| 20 | 1998-014-00 | Ocean Survival Of Salmonids | National Oceanic and Atmospheric Administration | Yes | Research | Implement Option B as proposed by the sponsor at the funding level identified by sponsor, that maintains the current project scope that includes additional effort on avian predators and salmon prey. The project should continue to consider freshwater management implications on ocean survival, continue working to understand the biological and physical mechanisms underlying correlations and continue to develop an ecosystem model that will allow for testing various freshwater management actions. Also see Part 3: Project-Specific Recommendations. Also see Programmatic issue for Research Projects. | \$1,497,082 | \$1,019,325 | \$1,497,082 |
| 21 | 1999-003-01 | Evaluate Spawning of Fall Chinook and Chum Salmon Just Below the Four Lowermost Mainstem | Washington Department of Fish and Wildlife, Pacific States Marine Fisheries | Qualified | | Continue implementation through next review cycle, and address ISRP qualifications in next annual report. | \$42,150 | \$42,150 | \$42,150 |
| 22 | 2002-013-01 | Water Entity - CBWTP | National Fish and Wildlife Foundation | Yes | | Continue implementation considering ISRP comments and with the following qualifications: (1) continue to build out the Monitoring Framework to help quantify benefits of water instream; continue to work on compiling data that illustrates progress in each river system toward meeting flow targets and cumulative impacts, and (2) continue to work with the program habitat restoration implementers to coordinate and fish and habitat work. Bonneville to fund the program at the Council planning budget of \$5,223,985 per year under two-year contracts beginning in FY 2020. Also see Part 3: Project-Specific Recommendations. | \$6,378,000 | \$5,223,985 | \$5,223,985 |
| 23 | 2002-031-00 | Growth Modulation in Salmon Supplementation | National Oceanic and Atmospheric Administration | Yes | Hatchery and Research | Continue implementation considering ISRP comments. Sponsor to submit to Council a report including a timeline for current and anticipated research by September 30, 2020, ahead of the 2021 Habitat and Hatchery Review. The report will also be considered by the ISRP and Council ahead of the review to assess and ensure value-added to the program-funded hatchery programs. See Programmatic issues for Hatchery-related work and for Research projects. | \$356,000 | \$356,678 | \$356,000 |

**Part 4: Mainstem and Program Support
Project Review Summary**

July 2019

| | A | B | D | F | H | I | M | N | O |
|----|-------------|--|---|---------------|---------------------------|--|------------------------|--------------------|-------------------------|
| 1 | Project # | Project Title | Sponsor | ISRP Criteria | Programmatic Issue | Council recommendations | FY2020 Sponsor Request | FY2020 BPA Ceiling | Council planning budget |
| 24 | 2002-037-00 | Freshwater Mussel Research and Restoration | Umatilla Confederated Tribes | Qualified | Research | Sponsor to address ISRP qualifications and submit in a report to Council for ISRP review by January 30, 2020. See Programmatic issue for Research. | \$334,000 | \$393,000 | \$334,000 |
| 25 | 2004-002-00 | Pacific Northwest Aquatic Monitoring Program (PNAMP) Coordination | US Geological Survey | Yes | Data Mgmt and Information | Continue work through the next review. See Programmatic issue for Data Management and Information. | \$429,933 | \$429,933 | \$429,933 |
| 26 | 2005-002-00 | Lower Granite Dam Adult Trap Operations | National Oceanic and Atmospheric Administration | Yes | Hatchery | Continue implementation through next review cycle, considering ISRP comments on long holding times and minimizing impacts of shad. This project will be considered in context during the 2021 Habitat and Hatchery Review. See programmatic issue for Hatchery-Related work. | \$479,770 | \$479,770 | \$479,770 |
| 27 | 2007-252-00 | Hyporheic Flow Assessment in Columbia River Tributaries | Umatilla Confederated Tribes | Yes | Research | Continue implementation considering the ISRP comments and the following condition: As a research project ongoing for over 10 year, the Council expects the sponsor to increase effort on evaluation and dissemination of results that would be valuable to the region. The Sponsor to submit a report to the Council by September 30, 2020 that documents how this projects' (1) lessons-learned and tools will be disseminated, and (2) how the insights from the project will be shared to inform habitat work in the Columbia Basin, by Sept 30, 2020; ahead of the 2021 Habitat and Hatchery Review. This project will provide context for the 2021 Habitat and Hatchery Review. See Programmatic issue for Research Projects. | \$112,325 | \$179,563 | \$179,563 |
| 28 | 2007-390-00 | Tribal Conservation Enforcement-Umatilla Tribe | Umatilla Confederated Tribes | N/A | | Continue implementation considering ISRP and Council comments. Also see Part 3: Project-Specific Recommendations. | \$71,002 | \$182,760 | \$71,002 |
| 29 | 2007-391-00 | Tribal Conservation Enforcement-Columbia River Inter-tribal Fish Commission (CRITFC) | Columbia River Inter-Tribal Fish Commission | N/A | | Continue implementation considering ISRP and Council comments. Also see Part 3: Project-Specific Recommendations. | \$656,082 | \$578,899 | \$656,082 |
| 30 | 2008-004-00 | Sea Lion Non-Lethal Hazing | Columbia River Inter-Tribal Fish Commission | Yes | | Continue implementation through next review cycle. | \$255,292 | \$255,292 | \$255,292 |

**Part 4: Mainstem and Program Support
Project Review Summary**

July 2019

| | A | B | D | F | H | I | M | N | O |
|----|-------------|--|---|---------------|---------------------------|---|------------------------|--------------------|-------------------------|
| 1 | Project # | Project Title | Sponsor | ISRP Criteria | Programmatic Issue | Council recommendations | FY2020 Sponsor Request | FY2020 BPA Ceiling | Council planning budget |
| 31 | 2008-105-00 | Selective Gear Deployment | Colville Confederated Tribes | Qualified | Hatchery | Sponsor to address the nine ISRP qualifications during the 2021 Habitat and Hatchery review process as part of the project proposal narrative for the Chief Joseph Hatchery Program (Project # 2003-023-00). See Programmatic issue for Hatchery-Related work. | \$551,458 | \$366,458 | \$551,458 |
| 32 | 2008-106-00 | Tribal Conservation Enforcement-Colville Tribe | Colville Confederated Tribes | N/A | | Continue implementation considering ISRP and Council comments. Also see Part 3: Project-Specific Recommendations. | \$350,000 | \$195,243 | \$350,000 |
| 33 | 2008-308-00 | Willamette Falls Lamprey Escapement Estimate | Confederated Tribes of Warm Springs | Yes | | Continue implementation through next review cycle and consider ISRP comments. Continue to participate in collaborative regional lamprey efforts including the Lamprey Technical Work group, Conservation Agreement and the Tribal Pacific Lamprey Restoration Plan. | \$221,160 | \$182,760 | \$182,760 |
| 34 | 2008-470-00 | Yakama Nation Ceded Lands Lamprey Evaluation and Restoration | Yakama Confederated Tribes | Qualified | | Sponsor to address ISRP qualifications in next annual report; Project to implement per August 2018 Council recommendation regarding the Pacific Lamprey Master Plan. Continue to participate in collaborative regional lamprey efforts including the Lamprey Technical Work group, Conservation Agreement and the Tribal Pacific Lamprey Restoration Plan. | \$634,044 | \$739,592 | \$574,044 |
| 35 | 2008-502-00 | Expanded Tribal Catch Sampling | Columbia River Inter-Tribal Fish Commission | Qualified | | Sponsor to address ISRP qualifications in next annual report. | \$24,187 | \$96,774 | \$24,187 |
| 36 | 2008-505-00 | StreamNet Regional Library | Columbia River Inter-Tribal Fish Commission | Yes | Data Mgmt and Information | Continue implementation through next review cycle and continue working with Council staff to incorporate reference documents connected to the Program's online tools. See Programmatic issue for Data Management and Information. | \$448,000 | \$448,000 | \$453,000 |
| 37 | 2008-507-00 | CRITFC Inter-Tribal Monitoring Data | Columbia River Inter-Tribal Fish Commission | Qualified | Data Mgmt and Information | Continue implementation through next review cycle and respond to ISRP qualifications on (1) objectives, (2) adaptive management, and (3) mission and work-plan in the next annual project report to Bonneville. See Programmatic issue for Data Management and Information. | \$491,301 | \$491,301 | \$491,301 |
| 38 | 2008-518-00 | Upstream Migration Timing | Columbia River Inter-Tribal Fish Commission | Qualified | | Continue to implement with the following condition: Sponsor to submit a plan by January 30, 2020 to address ISRP qualifications (old and new), including unanswered questions regarding the adequacy of the sample size and whether the project provides a reasonable representative of the sample of the run. This project provides important information to the region by sampling adult salmon and steelhead. Given that the data are used to inform management decisions, it is critical that the project address these issues. | \$356,364 | \$309,331 | \$356,364 |

**Part 4: Mainstem and Program Support
Project Review Summary**

July 2019

| | A | B | D | F | H | I | M | N | O |
|----|-------------|--|---|---------------|--------------------|--|------------------------|--------------------|-------------------------|
| 1 | Project # | Project Title | Sponsor | ISRP Criteria | Programmatic Issue | Council recommendations | FY2020 Sponsor Request | FY2020 BPA Ceiling | Council planning budget |
| 39 | 2008-524-00 | Implement Tribal Pacific Lamprey Restoration Plan | Columbia River Inter-Tribal Fish Commission | Qualified | | Sponsor to address ISRP qualifications in next annual report; Project to implement per August 2018 Council recommendation regarding the Pacific Lamprey Master Plan. Continue to participate in collaborative regional lamprey efforts including the Lamprey Technical Work group, Conservation Agreement and the Tribal Pacific Lamprey Restoration Plan. | \$703,056 | \$703,222 | \$703,056 |
| 40 | 2008-527-00 | Zone 6 Fisheries CRITFC Accord project | Columbia River Inter-Tribal Fish Commission | N/A | Hatchery | Continue to work through the master plan step review process addressing ISRP comments. This project will be considered in context during the 2021 Habitat and Hatchery Review. See Programmatic Issue for Hatchery-related work. | \$376,250 | \$158,932 | \$215,000 |
| 41 | 2008-710-00 | Chum Salmon Restoration in the tributaries below Bonneville Dam | Washington Department of Fish and Wildlife | Yes | Hatchery | Continue to implement through the master plan step review process (approved by Council in August 2009) addressing ISRP comments. This project will be considered in context during the 2021 Habitat and Hatchery Review. See Programmatic issue for Hatchery-related work. | \$2,130,000 | \$1,179,016 | \$2,130,000 |
| 42 | 2009-008-00 | Climate Change Impacts | Columbia River Inter-Tribal Fish Commission | Yes | | Council recommends the sponsor prepare an updated workplan that responds to ISRP comments and that describes (1) tools and methods that will be developed for incorporating climate change impacts into future tributary habitat restoration planning, and(2) how the information will be analyzed (or modeled) to prioritize and design restoration projects. The updated workplan should be submitted to Council for review ahead of the next contract cycle. | \$294,701 | \$294,701 | \$294,701 |
| 43 | 2010-036-00 | Lower Columbia Coded Wire Tag (CWT) Recovery Project | Washington Department of Fish and Wildlife | Qualified | Hatchery | Continued implementation and address ISRP qualifications in next annual report: (1) power analysis, (2) brood table, and (3) as possible within current scope of this project, review existing efforts linking fish identification from CWT, PIT-Tag and Parentage-Based tagging data. Given this work informs harvest and hatchery management issue this project will be considered in context during the 2021 Habitat and Hatchery Review. See Programmatic issue for Hatchery-related work. | \$1,783,695 | \$1,654,289 | \$1,783,695 |
| 44 | 2011-014-00 | Evaluate Status & Limiting Factors of Pacific Lamprey in the lower Deschutes River, Fifteenmile Creek and Hood River Subbasins | Confederated Tribes of Warm Springs | Qualified | | Sponsor to address the ISRP qualifications in next annual report and continue to participate in collaborative regional lamprey efforts including the Lamprey Technical Work group, Conservation Agreement and the Tribal Pacific Lamprey Restoration Plan. | \$476,393 | \$476,395 | \$476,393 |

**Part 4: Mainstem and Program Support
Project Review Summary**

| | A | B | D | F | H | I | M | N | O |
|----|-------------|--|--|---------------|---------------------------|--|------------------------|---------------------|-------------------------|
| 1 | Project # | Project Title | Sponsor | ISRP Criteria | Programmatic Issue | Council recommendations | FY2020 Sponsor Request | FY2020 BPA Ceiling | Council planning budget |
| 45 | 2011-020-00 | Data Management Project | Kalispel Tribe | Qualified | Data Mgmt and Information | Continue implementation through the next review cycle. Sponsor to (1) address ISRP qualification in next annual report including objectives, adaptive management, strategic framework, and document database's level of use, and (2) Submit to Council a summary of the potential data available for use by project sponsors in advance of, and during the 2020 Resident Fish category review. See Programmatic issue for Data Management and Information. | \$146,000 | \$154,530 | \$146,000 |
| 46 | 2016-001-00 | BPA Project Action Effectiveness Monitoring (AEM) Programmatic | Cramer Fish Sciences | Yes | Research | Continue implementation on all activities except for work on partial barrier removal and floodplain restoration action categories. Bonneville and sponsor to adjust the scope of work and budget accordingly to maintain remaining activities for completion in FY 2023. For any work beyond FY 2023, sponsor must submit a new proposal for ISRP and Council review. This project will provide context for the 2021 Habitat and Hatchery Review. See Programmatic issue for Research Projects. Also see Part 3: Project-Specific Recommendations. | \$410,333 | \$411,633 | \$410,000 |
| 47 | 2017-003-00 | Yakama Action Effectiveness Monitoring | Yakama Confederated Tribes | Qualified | | After one year of implementation, sponsor to provide the following in a report to the ISRP and the Council for review and recommendation for out-year implementation that includes: (1) A revised monitoring plan that shifts the monitoring focus to a watershed-scale, habitat limiting factor-based approach, and include details of how the results of monitoring can be used to inform project prioritization, design and implementation, and (2) Responses to the ISRP qualifications. This project may be included in the 2021 Habitat and Hatchery Review. See Part 3: Project-Specific Recommendations. | \$239,910 | \$239,916 | \$239,910 |
| 48 | 2017-005-00 | Lamprey Conservation Initiative | Pacific States Marine Fisheries Commission | Qualified | | Sponsor to: 1) implement per January 2019 Council recommendation; 2) address ISRP qualifications in 2019 annual report; and 3) continue to participate in collaborative regional lamprey efforts including the Lamprey Technical Work group, Conservation Agreement and the Tribal Pacific Lamprey Restoration Plan. | \$253,736 | \$238,692 | \$300,000 |
| 49 | 2018-002-00 | Integrated In-stream PIT tag Detection System Operations and Maintenance | Biomark, Inc | | | Continue implementation through next review cycle. Sponsors will describe in their next annual report how they are improving coordination among their projects, and communication with managers utilizing PIT-Tag arrays and related technology. Also see Part 3: Project-Specific Recommendations. | \$954,255 | \$954,318 | \$954,255 |
| 50 | | | | | | TOTALS | \$45,409,466 | \$41,183,296 | \$43,449,409 |