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August 8, 2017

MEMORANDUM

TO: Fish and Wildlife Committee Members

FROM: Patty O'Toole and Tony Grover

SUBJECT: Preparing for the next F&W Program amendment:

- **Potential topics for policy or science-policy discussions**
- **Timing for the ISAB review of the existing 2014 Program**

BACKGROUND:

The Program implementation assessments, discussed with the Committee in July, highlight policy challenges and science questions that may be important to explore prior to commencing the next Fish and Wildlife Program (Program) amendment. Staff have compiled a list of policy, science or implementation topics that would benefit from further discussion in some detail. The Committee may choose to direct staff to organize work sessions for Committee meetings, regional workshops or even science-policy forums for several of these topics. The list of possible topics is identified below and discussed in a little more detail later in this memo. The order of the list does not indicate priority. Some of the topics are already being addressed in some capacity, others are not yet underway or additional policy discussion may be needed. Some may require further analysis by staff before the full value of a policy workshop can be assessed.

Before embarking on new policy reviews, it will be necessary to know when the Council wants to start the Program Amendment process. If it is as soon as April of 2018, then there will only be time for limited amount of policy discussion.

Below is a list of policy, science or implementation discussion topics that may help the Council inform the next Program amendment. Some of these are already underway and others need some discussion with the Committee and possibly others before commencing.

Policy reviews and discussions not yet planned or underway:

Artificial production
Blocked area mitigation-phased reintroduction
Build from strength principle (habitat)
Estuary/Ocean
Habitat (mainstem)
Predator management
Resident fish loss assessments
Threats including increasing water temperatures, non-natives, contaminants
Wildlife C&I mitigation, operational losses

Policy reviews and discussions already planned or underway:

Habitat (tributary)
Lamprey
Screw trap review
Sturgeon
Wildlife C&I mitigation, operational losses

Opportunity for a broader policy discussion?

As central and state staff discussed this list, it became apparent that each of these topics could benefit from a policy discussion (informed by science) as the next Program amendment process approaches, but an overarching question that arose is:

What is the best way to effectively and efficiently mitigate for losses from a hydropower system, in a highly altered ecosystem that continues to be impacted by threats such as predation, non-natives species, warming water temperatures, etc.?

The staff believes it is valuable to explore the concept of a science-policy forum at this broader level, along with the other topics. At the August meeting, the staff is seeking Committee discussion and feedback on this list of topics.

When should ISAB review of the 2014 Program begin?

Also, the ISAB is tasked to review the existing Program prior to the commencement of the next Program amendment process. The ISAB requires six months lead time to complete their review prior to the release of the Council's call for recommendations to amend the Program. Discussions are underway among Council members to determine when to begin the next Program amendment process, with a range of dates for calling for recommendations between April of 2018 and April of 2019. The earlier of these dates would require the ISAB to commence the 2014 Program review at the end of September 2017, to ensure the ISAB review is available to the Council prior to completing the letter calling for recommendations.

Once the schedule for the amendment process becomes clear and with input from the Committee, staff will develop options for how and when to address these topics, along with timeframes for ISAB review of the 2014 Program and other important dates.

Relevance: Relates to important fish or wildlife mitigation policy issues that could benefit from increased understanding prior to commencement of the next Program amendment process.

Background: Short discussion of the policy questions and current status each of the Program related issues

Discussion of individual topics that may be candidates for in depth policy and possibly science discussions or workshops.

1. Program topics that are not yet planned for policy (or science/policy)

discussion: (Technical work may be underway, but a science and/or policy forum may be warranted.)

Artificial production - Several Program measures await a broad-scale approach to hatchery monitoring, as described in the recommendations of the Ad Hoc Supplementation Workgroup and the 2012 conceptual biological opinion project titled Columbia River Hatchery Effects Evaluation Team (CRHEET).

Status and possible next steps: Informal discussions suggest some portions of CHREET have been implemented in a variety of ways. 1) Staff convene a conference call/meeting with past members of the Ad Hoc Supplementation Workgroup to find out what remains to be done to implement the workgroup's recommendations. 2) Convene a panel of hatchery involved fish managers to talk to the fish and wildlife committee. 3) Follow up as necessary with remaining policy or science questions.

Blocked areas mitigation (phased reintroduction) - The Program includes a phased, science-based approach to investigating the reintroduction of anadromous fish above Chief Joseph and Grand Coulee dams.

Status and suggested next steps: Efforts to address Phase one to investigate the reintroduction of anadromous fish above Chief Joseph and Grand Coulee has progressed and should be nearing completion of most work by the end of 2017. 1) Staff should assess Phase one tasks and schedule a report to Council per the Program and 2) arrange a science-policy to review and discuss results and policy implications ahead of the next Program amendment.

Build from Strength - The Program habitat strategy's first principle is to build from strength. Efforts to protect and restore fish and wildlife impacted by hydropower should protect habitat that supports existing populations that are relatively healthy and productive. Adjacent habitats should be expanded if they have been historically productive or have a likelihood of sustaining healthy populations by reconnecting or improving habitat. In a similar manner, this principle applies to the restoration of weak stocks: Restoration should focus first on habitat where portions of weak populations are doing relatively well and then extend to adjacent habitats.

Status and possible next steps: It is not clear how well this principle is being implemented. 1) Staff could compile and analyze information on spending by Bonneville and others on each fish population to determine the allocation of funding to strong and weak fish populations. 2) Identify barriers to shifting spending towards healthier more productive fish populations. 3) Share these findings with the Committee members to determine what follow up actions to take. Related Program strategies include Wild Fish and Salmon Strongholds.

Estuary/nearshore ocean - These two strategies have been part of the Program for many years, but have been largely BiOp focused in recent years. There is uncertainty as to what work the BiOp will require in the future. Recent ocean conditions have been appear to have been less favorable for anadromous fish survival and research in the estuary indicate that estuary habitat may be providing important feeding opportunities for juvenile salmon as they migrate to the ocean.

Status and possible next steps: the Council may want to be briefed on the latest findings from research and monitoring in these areas and be updated on coordination and management efforts through a science policy exchange or focused updates at Council meetings.

Mainstem Habitat Restoration - Most work in the Program for habitat restoration occurs in the tributaries, or below Bonneville Dam in lower Columbia River and estuary. Little or no habitat work is being done in the mainstem Columbia or Snake rivers.

Status and possible next steps: Staff is aware of some interesting examples of where work could be undertaken to restore spawning, rearing, resting and migration habitat complexity in portions of the Columbia River above Bonneville Dam. These concepts were recently shared with the Federal Caucus members. 1) Staff will meet with relevant entities to discuss the potential for Mainstem habitat restoration work. 2) Staff will organize a panel discussion for the fish and wildlife Committee or Council to talk about mainstem habitat restoration potential. 3) Staff will follow up with a recommendation for further work, including a possible workshop on the potential for Mainstem habitat restoration.

Predator Management - Altered habitats in the Columbia River support native and non-native predator species, and the Program aims to improve the survival of salmon and steelhead and other native focal fish species by managing and controlling predation rates. In some instances predator populations continue to grow, and there is concern that their impacts continue to grow as well.

Status and possible next steps: The Program calls for the formation of a technical work group to develop a common predation metric, which was the recommended outcome of the [2012 Science Policy Exchange](#). The Council may want to consider facilitating a technical work group to take on this task if there is regional interest.

Program Goals and Objectives - Staff have compiled, and vetted with fish managers, quantitative and qualitative objectives for natural origin salmon and steelhead. NOAA's Columbia Basin Partnership Taskforce, including four Council members and Council staff is also developing salmon and steelhead qualitative and quantitative goals and objectives for the Columbia Basin. This effort is closely aligned with and cooperative with the Council staff led objectives identification effort. Staff is also compiling and vetting with fish managers objectives for resident fish species such as bull trout, redband, west slope cutthroat, sturgeon, eulachon and lamprey. Staff are working with PNAMP on the Regional Habitat Indicator project to identify ecosystem function objectives. Public affairs and F&W division staff are working together to identify public engagement objectives to inform the program amendment process.

Status and possible next steps: Ongoing efforts are producing extensive compilations of objectives for all aspects of the Program. An important question is to what extent and in what amount of detail these objectives should be considered for incorporation into the next Program during an amendment process? 1) Staff will develop a set of policy related questions to be answered. For example: What are the most appropriate types of objectives for fish? What is the appropriate scale for objectives? Should objectives for limiting factors be included? Which qualitative objectives should be included? What process would be appropriate to engage the region to further refine objectives for consideration in the next Program amendment? 2) Staff will work with the Committee members to develop one or more workshops for all available Council members to participate in discussing these questions. 3) Staff will develop an objectives related appendix to be attached to the call for recommendations to amend the Program.

Resident Fish Loss Assessments - Resident fish and other native aquatic species, including freshwater mussels, white sturgeon, burbot, and several native trout species, have been impacted by the construction and operation of the hydrosystem. Impacts include losses to abundance, genetic diversity, life history diversity, spatial diversity and movements of these species, as well as modification of their habitat resulting from inundation. Resident fish losses from hydropower dam construction have not been determined for most of the Columbia River Basin. The 2014 Program recommended development of a standardized methodology for resident fish habitat loss assessments but this has yet to occur.

Status and possible next steps: Resident fish loss assessments have not been developed and recommended for inclusion into the Program. 1) Schedule this topic for discussion at the September 2017 Regional Coordination Forum. Gauge the interest in and willingness of fish managers to participate in developing and implementing processes to assess resident fish losses resulting from hydropower development in the Columbia Basin. 2) If the RCF participants appear interested, staff will recommend follow up actions at the October 2017 Committee meeting.

Threats - The Program identifies several threats to successfully achieving fish and wildlife mitigation. Those threats include: non-native species, invasive species, changes in predation, increased competition among species, hybridization, changes in hydraulic flow regimes, warming temperatures and toxic pollution.

Status and possible next steps: each of the threats identified in the Program are being addressed to some extent. Presentations to the Committee and Council as well as actions taken by Council are often targeted toward actions to reduce these threats. One of the past science-policy workshops focused on predation. 1) staff will continue to monitor emergent aspects of the threats and propose Council actions as appropriate.

Water temperature - habitat - Most temperature records in the Columbia Basin indicate a warming climate, with associated precipitation shifts to more rain and less snow. Extreme events are expected to increase, resulting in more and higher winter floods and longer and lower summer low flows. Temperature sensitive species, such as

Bull Trout, are experiencing more and larger thermal barriers resulting in range reductions and less interconnectivity of strongholds.

Status and possible next steps: Staff have worked closely with climate researchers and fish and wildlife managers to bring the latest information and thinking to the Committee and Council. 1) Staff will continue to seek out the latest research and information and, if appropriate prepare Committee or Council presentations.

2. Program topics with science, policy or implementation discussions underway:

Habitat strategy – The Program invests significantly in tributary habitat improvements based on the assumption that these actions will improve conditions for program focal fish species. Assessing the benefits of habitat improvements has proved challenging, and existing habitat monitoring and evaluation has not adequately addressed this issue at the program scale.

Status and suggested next steps: Staff are in the process of developing a program-focused habitat monitoring and evaluation strategy. To date, a general approach has been developed and shared with the Committee, Council and all interested parties. 1) Staff will organize a workgroup composed of habitat technical specialists from co-manager and project sponsor organizations, and this workgroup will develop the details of a monitoring and evaluation strategy. 2) Staff will work with the Council and Bonneville to incorporate the strategy in future funding for M&E associated with habitat projects or future M&E projects.

Screw Trap review - The cost savings workgroup has identified juvenile fish screw traps for focused review to understand their use, value to the implementation of the Program's Adaptive Management Strategy and to look for efficiencies.

Status and suggested next steps: 1) Bonneville will compile the location, purpose and other basic information on all screw traps funded by the Bonneville through the Program preferably in a way that can be incorporated into the Council's mapping effort. This information will be reviewed by the CSW and relevant questions will be developed. The information and questions will be distributed to project sponsors for verification and responses. The CSW will convene a workshop of project sponsors that use screw traps to discuss their use and possible efficiencies and improvements in how these tools are used and how the data generated by sponsors is processed and managed. 2) Bonneville and Council staff will prepare a report with recommendations a couple of months after the workshop.

Lamprey - The development of a synthesis report, as recommended by the Council in its 2011 review of Research, Monitoring and Evaluation and Artificial Production Projects remains an important need. Continued support and implementation of lamprey measures is needed.

Status and suggested next steps: Regional Implementation Plans (RIPs) are complete for most of the Columbia basin. A lamprey strategic summit is being planned for

December 2017, at which time the final RIP for the Columbia River basin should be complete. 1) RIPs can be considered for use to guide implementation priorities. 2) Council staff and ISRP members should attend the strategic summit. 3) Staff and possibly ISRP members will share the outcomes from the lamprey strategic summit with the Committee members and recommend next steps.

Sturgeon - The key issue for Columbia River Basin sturgeon is fragmented habitat from the construction and operation of the hydropower system that has isolated populations and limited access to food and suitable spawning and rearing habitat. The Kootenai population is geographically isolated and listed under ESA as endangered. Action agency focus in the mainstem has been on listed salmonids with little progress on the sturgeon measures, except for the Kootenai population.

Status and suggested next steps - Some additional sturgeon work will commence in FY 2018 as a result of recommendations by the Cost Savings Workgroup. 1) A sturgeon workshop is being convened to coincide in time and place with the Council's November 2017 meeting in Coeur d'Alene. This workshop should identify priority actions and needs for sturgeon in the basin to maintain populations. ISRP members will attend the workshop along with available Council members and staff. 2) Staff will follow up with a recommendation for further action.

Wildlife Losses - Implementation of wildlife mitigation continues but progress toward full mitigation remains unclear. Policy differences exist between Program direction for wildlife mitigation and implementation by BPA in both the wildlife mitigation obligation and in addressing species-response to wildlife mitigation.

Status and suggested next steps: Wildlife Projects are currently under review. Mitigation for wildlife losses due to hydropower facility construction and inundation in the Columbia River basin may be nearly complete, or even over-mitigated in some areas. Operational and secondary losses have not been assessed or meaningfully addressed, with the exception of the southern Idaho and Willamette settlement agreements. 1) Council staff, working with Bonneville and wildlife managers, will compile the best available information regarding C&I wildlife loss mitigation and present it to the Committee and Council in 2017. 2) Staff will prepare for a focused discussion about what may be done about assessing operational and secondary wildlife losses, including crediting for over-mitigation of C&I losses. 3) Staff may describe a possible assessment approach for operational and secondary losses to be attached to the call for recommendations to amend the Program.

More Info: July 2017 committee memo on 2014 Program [implementation assessments](#)