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January 4, 2012

MEMORANDUM

TO: Chairman Booth and members of the Fish and Wildlife Committee

FROM: Tony Grover

SUBJECT: Science - policy topics -- draft implementation plan

Draft final list of focused science policy work by the Council and its' regional partners.

The Council stated in the 2009 Fish and Wildlife Program that it was time to turn to performance. Since then Council staff has worked with action agencies, co-managers, the ISRP, the ISAB, the Council, and others to develop the components for a regional monitoring strategy. A regional monitoring strategy will allow the region to more efficiently distribute monitoring and evaluation resources, particularly in the anadromous zone of the Columbia River Basin, to identify where new habitat work can do the most good, and to more effectively address persistent difficult research issues that are important to the Council's goals and objectives.

Much of the groundwork for a regional monitoring strategy has been developed in cooperation with our regional partners through work on the Monitoring, Evaluation, Research and Reporting (MERR) framework. Sub-strategies of the MERR are in development to address unique aspects of anadromous fish, resident fish, lamprey, and wildlife. Additionally, the 2008 and 2009 Federal Columbia River Power System Biological Opinion (FCRPS BiOp) has driven many new initiatives across all areas of monitoring and evaluation.

A fairly high degree of precision has been achieved with mainstem dam reach survivals and passage performance for juvenile anadromous fish. More elusive is the goal of determining in-stream fish survival and movement with a high degree of accuracy below Bonneville Dam, above Lower Granite Dam and Wells Dam, and in the tributaries. Similarly, identifying the survival effects of habitat and hatchery projects has been difficult, if not impossible. Significant new proposals such as CHaMP are either underway as pilot efforts, or in development, such as CRHEET. Now is the time to begin integrating these new initiatives with existing habitat monitoring efforts such as ISEMP/IMWs, VSP monitoring and project implementation, and effectiveness monitoring. Together they have the potential to form a reasonably complete monitoring and evaluation package for the Columbia basin anadromous zone that does not require elaborate project-by-project monitoring.

The Council will be working closely with the ISRP and ISAB, and the region, to help meld the various monitoring and evaluation activities into a cohesive whole that meets the Council's and the region's needs. Between now and early calendar year 2013, which will be the start of next Fish and Wildlife Program amendment process, staff proposes the following approach to science and policy discussion that will help integrate monitoring efforts, better understand the role of hatcheries, identify critical and helpful science and research, and clarify the role of predation within the Columbia ecosystem.

Science and Policy Ongoing Topic One: Habitat and Hatcheries

1. Habitat restoration.

Several related projects, initiatives, and organizational approaches have been in progress long enough to begin to envision the outlines of a regional approach to monitoring and evaluating the implementation and effectiveness of habitat preservation and restoration work in the anadromous zone of the Columbia River Basin. Much of this habitat work is funded by Bonneville Power Administration (BPA) as part of the off-site mitigation efforts required under the Northwest Power Act.

- a. The Integrated Status and Effectiveness Monitoring Program (ISEMP) and associated Intensively Monitored Watersheds (IMWs) conclusions to date will be summarized in a report due in early 2012. This report should be submitted to the ISRP, and possibly the ISAB, for review.
- b. The Columbia Habitat Monitoring Protocol (CHaMP) complex of projects is envisioned to eventually include detailed monitoring sites in up to 26 watersheds in the Columbia Basin. In 2011 an initial ten watersheds commenced under a pilot program. A summary of the 2011 pilot effort is scheduled for the end of January 2012. It is not clear that the analytic tools have been, or will be soon, developed to put the CHaMP data to use for decision-making. Nor have standard reporting formats for the data been developed. The Council requested this report be submitted to the ISRP for review. It may also make sense to ask the ISAB to assess the scientific utility of this broad-ranging initiative.
- c. BPA is working with the NOAA Fisheries Science Center and has retained Tetra Tech and other consultants to help design and scope a habitat effectiveness monitoring and evaluation initiative. The essential purpose is to more efficiently deploy habitat effectiveness monitoring resources in the Columbia Basin, which is a stated goal of the Council's 2009 Fish and Wildlife Program. This effort is not well developed yet, though it may be mature enough for review within the first quarter of calendar year 2012. A project of this scale will require the collaboration of numerous managers and agencies, as well as the Council before deployment.
- d. Existing Integrated Status and Trends Monitoring (ISTM) monitoring of the data necessary to support viable salmonid populations (VSP) has been underway in a

number of different fashions in the Columbia Basin for several years. ISTM is a way to compare protocols and methods used to gather fish and habitat data and to see which protocols and methods are the same across entities and whether some could be adjusted to be better aligned. VSP monitoring utilizes four primary metrics to assess salmon status: abundance, spatial structure, diversity, and productivity. In 2009 the “Skamania Workshop” on FCRPS BiOp-related monitoring and evaluation of tributaries set the stage for development of the Anadromous Salmonid Monitoring Strategy (ASMS). That draft ASMS is intended to fit within the Council’s MERR, and addresses tributary monitoring in a consistent manner. In other words, the ASMS coordinates who does what where for VSP.

The Pacific Northwest Aquatic Monitoring Partnership (PNAMP) is coordinating an effort to demonstrate a fully integrated monitoring approach in the Lower Columbia River.

- e. Geographic review and expert panels - The Council will initiate the geographic project reviews in a manner anticipated to synchronize efforts with BPA’s effort to identify the next round of FCRPS BiOp habitat projects through the Expert Panel process. The geographic review and the expert panels can be viewed as the ‘consumers’ of the activities described in bullets a. through d. above.
- f. Additionally, and also in the early deployment stage, is the Expert Regional Technical Group (ERTG) that is one component of an effort to link habitat work in the estuary to an estuarywide monitoring and evaluation plan. The development of the estuary monitoring plan was requested by the Council and the ISRP and is being overseen by the U.S. Army Corps of Engineers and BPA. The estuary monitoring plan is at least a year from completion.
- g. The ISAB recently completed work on a ‘state of the science’ report on *‘Using a Comprehensive Landscape Approach for More Effective Conservation and Restoration.’* During the upcoming geographic review, project sponsors will need to have access to a clear set of policy guidelines from the Council about how to implement the ISAB report into the review process for their projects. Staff will work with the ISAB and the Council to develop that policy guidance.

Frequent and sustained attention by the Council, the ISRP, and from time to time, the ISAB, will be necessary to work with BPA, other action agencies, NOAA, managers, and others to ensure the habitat monitoring and associated reporting described above forms a cohesive, intelligible whole. The habitat work must be integrated with the next topic, hatcheries, as it is abundantly clear that hatcheries cannot be separated from the habitat from which they draw broodstock and into which the hatchery fish are released.

Tentative schedule for habitat-related Council science and policy discussions:

- ISRP will review the CHaMP 2011 report in February and perhaps March of 2012, which will bring the CHaMP project to the Council Fish and Wildlife Committee no sooner than

March or April of 2012, and the full Council no sooner than April or May of 2012. Longer timeframes may be necessary if another response is requested by the ISRP, or if the response to the original ISRP and Council request from the Research Monitoring & Evaluation and Artificial Production Category Review of 2011 is incomplete.

- The ISEMP and IMW report should be available for ISRP review on the same timeframe as the CHaMP 2011 report. Committee and Council review would also be the same.
- While Reviewing CHaMP and ISEMP, the ISRP can be briefed at the same time for informational purposes on PNAMP's ISTM coordination project, the Expert Panel process and the ERTG process.

2. Hatcheries and Supplementation

NOAA and BPA do not dispute the importance of the influence of hatchery fish on naturally spawning salmon and steelhead. The ISRP has long identified supplementation, along with other hatchery issues, as an important element of hatchery activities that must be better understood. The region has responded by adopting and implementing the recommendations of the Ad Hoc Supplementation Work Group. The Council has followed the supplementation issue closely for many years as protocols were developed and has supported the deployment of those protocols throughout the region. Time will be required to get the results needed by the region to make an accurate determination of what effects hatchery fish do have on natural fish populations. The issue is important to tribes, states and the sport and commercial fishing communities, who do not have a viable alternative tool to support fish populations experiencing low abundance numbers.

Recent work by the Hatchery Scientific Review Group (HSRG) sought to explore how wild and hatchery fish could be integrated with minimal adverse effects. BPA and NOAA plan to work with the Council and the region between now and 2013 to develop the scope and work plan for a Columbia River Hatchery Effects Evaluation Team (CRHEET). The Council has guidance, under programmatic issue 4, for the CRHEET project in the Research Monitoring & Evaluation and Artificial Production Category Review of 2011. While the scope and work plan is being developed, the Council can work with all parties, including the Science review bodies, to ensure CRHEET meets the needs of the Council's Program as well as the BiOps. Review of CRHEET by the ISRP and a broader look by the ISAB will be important to understanding the full range of relevant and important issues. We want to get the CRHEET project right the first time.

The January 2012 Council meeting will include a discussion of the ISRP's retrospective report, which has a strong emphasis on supplementation. That report will be followed by a conversation with the states, tribes and federal agencies about what aspects of supplementation, and the relevant elements involved in scoping CRHEET, should be the subject of a science and policy panel discussion at the Council's March meeting. The Council will determine in January if the work related to hatcheries and supplementation should be done in committee or at the full Council, or both.

At a minimum, the science and policy aspects of the following topics should be discussed prior to initiating the CRHEET project:

- a. Wild and hatchery fish interactions
- b. Idaho Supplementation Study
- c. Hatchery Scientific Review Group results
- d. Council criteria resulting from the recent RM&E / AP category review
- e. Other relevant studies and reports
- f. Assist NOAA and BPA in developing the scope and implementation plan for CRHEET

This work will likely carry forward throughout 2012 and into the beginning of 2013. All parties should work to an agreement on the scope of CRHEET before the next Fish and Wildlife Program amendment process starts in early calendar year 2013.

Science and Policy Ongoing Topic Two: Predation, ISAB Reports, and Council Research Plan

3. Predation

The ISAB has advised the Council to look at the issue of predation as a systemwide, integrated issue instead of a species-by-species approach. The ISAB notes that the Council's Fish and Wildlife Program and the NOAA Fisheries' recovery strategies only tangentially consider impacts of changes to food webs and implicitly assume stable conditions. Moreover, substantial changes in physical conditions and in biotic communities, combined with the ongoing proliferation of non-native species and hatchery-reared fish, have resulted in hybrid assemblages of organisms and environmental conditions. Together, these changes have reverberated throughout the Columbia Basin affecting the aggregate carrying capacity of the river to produce sustainable populations of native fish.

At a minimum, the science and policy aspects of the following topics should be discussed prior to initiating the next Fish and Wildlife Program amendment process in early calendar year 2013.

- a. Current conditions across all predators (sea lions, birds, fish)
- b. A broad range of native fish versus non-native fish, including lake trout
- c. Predation functions within a broader ecological context

Predation is a science policy topic that may be best addressed through a one or two day workshop. A possible approach is to invite subject matter experts to talk to Council members and the ISRP about items a. and b., above. Item c. may best be discussed between the subject matter experts, ISAB members and Council members, with the help of a facilitator. The subject could be how ecosystem principles play out with the various predators and prey in the Columbia, and what policy options for managing those predator-prey interactions may be available. This workshop could be scheduled for mid to late summer of 2012.

4. Updating the Council's Research Plan and Integration of the ISAB Reports into the Council's Evaluation and Decision-making Processes

The Council and the region have benefitted substantially from the work of the Independent Scientific Advisory Board. Sometimes working alone, sometimes with a peer review group or in collaboration with the Independent Scientific Review Panel, an enormous body of detailed state-of-the-science material has emerged from this sustained effort by the ISAB. The mass of this scientific thought and advice can seem somewhat overwhelming at times. A summation of this work is timely and necessary.

Prior to the next Program amendment beginning in early calendar year 2013, the Council and the region would benefit from a distillation of the ISAB's work into key points and summaries that would be more accessible to the Council and project proponents. ISAB members are supportive, even enthusiastic, about working with staff to create such a "Summary Report on ISAB Reports."

Through discussions among the Council, staff and the ISAB, important issues will be identified that will be incorporated into an update of the Council's research plan. If possible the Council and the ISAB will prioritize the relative urgency and importance of outstanding scientific questions that may be amenable in a reasonable timeframe, at a reasonable cost, to yielding useful insights to important issues.

A draft of this "Summary Report on ISAB Reports" and the associated draft of an "updated Council Research Plan" should be developed in conjunction and discussed with the Council together. Summer or autumn 2012 may be a reasonable time for the two drafts to be prepared. Below is a list that may be appropriate source material for the ISAB to draw on while preparing a "Summary Report on ISAB Reports."

Council staff can begin working on a draft "Summary Report on ISAB Reports" to give to the ISAB. After the ISAB has reviewed, edited, and commented on this draft, the ISAB and staff can present it to the Fish and Wildlife Committee and then to the full Council for discussion and direction before a final version is completed by staff. That summary report will serve as guidance to project sponsors and as the primary source document for updating the Council's Research Plan and should be developed with those outcomes in mind.

Since 1996 the ISAB has produced the following substantial reports along with many other reviews and reports:

- Using a Comprehensive Landscape Approach for More Effective Conservation and Restoration
- Columbia River Basin Food Webs: Developing a Broader Scientific Foundation for Fish and Wildlife Restoration
- Tagging Report: A comprehensive review of Columbia River Basin fish tagging technologies and programs
- Non-native Species Impacts on Native Salmonids in the Columbia River Basin (Including Recommendations for Evaluating the Use of Non-Native Fish Species in Resident Fish Substitution Projects)
- Climate Change Impacts on Columbia River Basin Fish and Wildlife

- ISAB Latent Mortality Report
- Review of the Council's draft Columbia River Basin Research Plan (November version)
- Report on Harvest Management of Columbia River Salmon and Steelhead
- Viability of ESUs Containing Multiple Types of Populations
- Scientific Review of Subbasin Plans for the Columbia River Basin Fish and Wildlife Program
- ISAB Findings from the Reservoir Operations / Flow Survival Symposium
- Review of Salmon and Steelhead Supplementation
- Review of Strategies for Recovering Tributary Habitat
- Review of Flow Augmentation
- Review of Salmon Recovery Strategies for the Columbia River Basin
- Review of the Biological Objectives in the 2000 Fish and Wildlife Program
- Hatchery Surplus Review
- The Columbia River Estuary and the Columbia River Basin Fish and Wildlife Program
- Recommendations for the Design of Hatchery Monitoring Programs and the Organization of Data Systems
- Work-In-Progress Report: Looking for Common Ground: Comparison of Recent Reports Pertaining to Salmon Recovery in the Columbia River Basin
- Review of "Development of a Regional Framework for Fish and Wildlife Restoration in the Columbia River Basin"
- Ecological impacts of the flow provisions of the Biological Opinion for endangered Snake River salmon on resident fishes in the Hungry Horse and Libby systems in Montana, Idaho, and British Columbia
- Downstream passage for Salmon at Hydroelectric Projects in the Columbia River Basin: Development, Installation, and Evaluation
- Independent Scientific Group's "Return to the River"