Northwest Power and Conservation Council

September 29, 2005

MEMORANDUM

TO: Fish and Wildlife Committee

FROM: Steve Waste, Manager for Program Analysis and Evaluation

SUBJECT: Update on Research Plan for the Columbia River Basin

Action

This is an informational briefing only and no action is required by the Committee.

Recommendation

This memo provides an overview of the purpose and use of the draft Research Plan and a schedule for completion. The draft Research Plan provides a comprehensive inventory and hierarchy of recommendations for research. It proposes the convocation of a Regional Research Partnership to broadly prioritize and review work that can be funded collaboratively. It also sets forth priorities against which both current work and new proposals can be reviewed in the FY07-09 Project Selection Process. Staff seeks confirmation from the Committee whether this approach will gain approval from the Council.

Background

The Northwest Power and Conservation Council (Council's) Columbia River Basin Fish and Wildlife Program is one of the largest regional efforts in the nation to recover, rebuild, and mitigate impacts of hydropower dams on fish and wildlife. For over 20 years the Council has supported a diverse range of research efforts. Hundreds of excellent projects, including dedicated research projects and restoration projects with research elements, have been completed since the inception of the program in 1982. Projects implemented under the Council's fish and wildlife program and others in the Columbia River Basin have substantially advanced the state of scientific understanding of fish and wildlife restoration. Yet the continuing absence of a plan to coordinate research has contributed to a lack of focus on key research needs. To complement its traditionally strong support for research, the Council staff drafted a "Columbia River Basin Research Plan" to guide the development of a research program under its Columbia River Basin Fish and Wildlife Program and to coordinate research under the Fish and Wildlife Program with

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the research programs of other entities within the region. The goal of the plan is to reduce management uncertainty by increasing scientifically based knowledge. Plan objectives include:

1. Identification of key uncertainties and research recommendations;
2. Prioritization of major research topics;
3. Accountability for the annual expenditures of research funds;
4. Input from independent scientific review, fish and wildlife agencies and tribes, independent scientists and other interested parties in the region;
5. Monitoring, evaluation, and the application of results;
6. Coordination with the research elements of the mainstem plan;
7. Coordination with the research elements of the subbasin plans; and,
8. Making information from the Fish and Wildlife Program readily available.

Initial Review by ISAB/ISRP of the draft Columbia River Basin Research Plan

In January of 2004, staff briefed Council on the draft Research Plan for the Columbia River Basin. Subsequently, a formal public comment period on the draft plan was then held from October through November 2004. Revisions were made in response to these comments and the draft plan was then provided to the ISAB and ISRP for their review. On June 28 2005, the ISAB/ISRP review of the research plan was completed. The most significant recommendations were to revise the plan to:

1. Decrease the length of the document to make it more accessible to policymakers and decision makers. They suggested moving the detailed lists of specific research recommendations that were developed with input from the state and federal agencies, tribes, and other interested parties out of the document or into appendices. (This advice ran counter to that of several agency reviewers who recommended expanding the overview for each research topic into a synthesis of the knowledge on that topic, and providing more detail throughout the plan, e.g., include descriptions of other research plans within the region.)

2. Integrate the sections for each topic on Critical Uncertainties and Management Questions into a simpler statement of "Critical Management Uncertainties." They recommended providing this level of detail to project sponsors who would then formulate and propose specific hypothesis for testing. They cautioned against being overly prescriptive in the articulation of specific research recommendations, pointing out that innovation on the part of sponsors might be squelched if they solely focused on the composite lists.

Analysis

General Status of Revisions

Revisions in response to these recommendations are nearing completion. In order to preserve the value of the inventory of research questions gathered during the drafting of the plan staff propose to place these in appendices. Project sponsors will then be able to ascertain the extent of prior discussion on a research topic while developing a project proposal, yet still propose original work that addresses a Critical Management Uncertainty without feeling constrained by the lists of research recommendations. The research topics in the plan are presented in a hierarchy of

relevance to the mandates of the Program, e.g., beginning with hydrosystem and hatchery issues, and ending with emerging issues such toxics and invasive species.

Gap Analysis

In light of the limited funds available for research, it is important that future research address significant gaps in knowledge. ISRP reviews have also highlighted the need for a Research Plan that would:

1. help close these knowledge gaps by evaluating the relevance of on-going research,
2. identification of needed shifts in emphasis;
3. identification of emerging research topics; and,
4. address overarching questions and assist in making decisions about the relative importance among projects by providing a prioritization for future research.

A "gap in knowledge" is considered to exist whenever a critical management uncertainty set forth in the plan is not being addressed by a research project(s) under the Fish and Wildlife Program or by projects of the other resource management agencies. The gaps will be identified by an assessment of the relevance of on-going projects to the research priorities identified in the research plan.

It is natural for these gaps to exist considering that this is the first effort to develop a set of regional research priorities and that the current pool of research projects developed over a long period of time in response to long-standing objectives of the Council's Fish and Wildlife Program; Provincial Review project solicitations; and the requirements of the federal biological opinions and other planning documents. Closing a knowledge gap may require a single project, several projects, or a long-term program. These may be funded by the Council; the Council in collaboration with other entities; or solely by other entities.

Caveats

The competing demands on available Fish and Wildlife Program funding underscores the need for an assessment of current research activity in relation to priorities for future research. Implementing new research may require a reallocation of research dollars between topics over the course of the FY 07-09 and the subsequent funding cycle. Yet it is important to make as much progress as possible on implementing research priorities in the FY 07-09 project selection process.

The fact that there may be multiple on-going projects addressing a research topic does not preclude an enterprising sponsor from proposing a new or novel even approach to the same problem and existing projects may provide a strong start for a new research focus. On-going projects with strong links to regional research priorities should be considered as vehicles for addressing the remaining knowledge gaps. Finally, from time to time, the Council may need to respond to rapidly emerging management uncertainties by identifying additional research priorities that it and other partners may need to address.

Implementing Research Priorities in the Context of the Project Selection Process

The draft Columbia River Basin Research recognizes other research plans as important components of a coordinated regional research program, and provides a framework for establishing linkages between the Fish and Wildlife Program and existing research programs and initiatives. The plan recommends research to be funded through the Fish and Wildlife program. It also proposes creation of a forum for development of recommendations for research that will require collaborative, multi-party funding commitments by the regional entities with research mandates. The research plan identifies a variety of research that can be categorized as:
1. within the purview of the Fish and Wildlife Program;
2. shared by the Program with other entities; and,
3. under the mandates of other entities, but affecting the Council's Program.

Staff proposes implementing work under these categories via two different, but complementary implementation scenarios, the Project Selection Process for FY 07-09 and a Regional Research Partnership.

Project Selection Process for FY 07-09

The Project Selection Process for FY 07-09 can provide a vehicle for implementing research that is central to the Fish and Wildlife Program; i.e., supports the mitigation and restoration of wildlife, resident fish, unlisted anadromous fish, and listed anadromous fish. In contrast to the first three funding cycle, the FY07-09 process will have benefit of the priorities set forth in subbasin plans, the draft Research Plan, and the PNAMP strategy document. Thus, the draft Research Plan can help the program address the research priorities in the plan by helping to guide the review of on-going work. The Reference Document on research sets forth priority research strategies that can be implemented through the Fish and Wildlife Program and the Anadromous Fish Evaluation Program of the Army Corps of Engineers. (Lists of specific research questions addressing each critical management uncertainty are also presented in the Research Plan.) In brief, staff proposes three areas of research as most important to the program.

Mainstem Survival - This body of Research is primarily funded through the Corps Anadromous Fish Evaluation Program. What is the relationship between levels of flow and juvenile and adult salmon survival through the Columbia hydrosystem? How effective are the current operational measures designed to protect outmigrating juvenile fall Chinook? What is the optimal transport strategy and determine the best estuary release dates? Design, test, and implement new surface passage systems, e.g. flow velocity enhancement using directed turbulent currents, removable spillway weirs.

Effectiveness of Artificial Supplementation - Research in this area is primarily funded through the Fish and Wildlife Program. Is it possible to integrate natural and artificial production systems in the same basin to achieve sustainable long-term productivity? What is the relationship between basin-wide hatchery production and the productivity of naturally produced salmon for a given level of ocean productivity? How can we best meet tribal objectives?

Passage Issues - This research is primarily funded through the Corps with some current work in the Fish and Wildlife Program. Determine the status, limiting factors, passage requirements, and management alternatives for anadromous and resident lamprey. Determine survival for Hanford Reach subyearling fall Chinook through McNary Pool and downstream to below Bonneville Dam. Evaluate spillway passage at each mainstem project to determine an optimal passage strategy that maximizes improvements in survival.

Habitat - This research is primarily funded through other programs. What pattern and amount of habitat protection is needed to ensure long-term survival of fish and wildlife populations in the face of variable environmental regimes? The program is supporting research on Intensively Monitored Watersheds, and others such as the Washington SRF Board, USFS, and Bonneville Environmental Foundation have corollary work underway.

Harvest - This research is primarily funded through NOAA. Can harvest be managed in mixed-stock areas like the ocean and mainstem Columbia by ESU or even individual populations? The Regional Research Partnership can help guide NOAA in this area.

In regards to other gaps in the plan that we cannot fund we recommend monitoring them for now, e.g., the effects of toxic contaminants, the impacts of invasive and nonnative species.

Regional Research Partnership

The 2000 Fish and Wildlife Program states that a meeting of fish and wildlife agencies, tribes and hydrosystem operating agencies should be convened regularly to identify key uncertainties about the operation of the hydrosystem and associated mainstem mitigation activities. To implement this directive, staff proposes convening a forum for coordinating cooperative research, to be called the Regional Research Partnership (RRP). All of the resource management entities contacted during the development of this research plan expressed support for this concept.

Staff proposes using the Columbia River Basin Research Plan as a starting point for the development of a regional research agenda, by providing a rough framework on which discussion of coordination amongst potential partners can focus. While the draft plan does not constitute a complete research agenda for the region, it does provide a framework for developing one, through the identification of potential partners, programs, and funding sources for working on research questions held in common.

The Research Plan could help the RRP by bring focus to initial discussions of how best to address research topics that are shared by the Council and other entities, or belong completely to other entities but affect Program resources. Under this implementation scenario, the RRP would provide a forum for implementing research that is important to the Fish and Wildlife Program, but is not the responsibility of the Program alone; i.e., it shared with other natural resource science management entities. The RRP will also provide a forum for Council involvement in discussion of how best to coordinate research that belongs to others, e.g., federal programs with state interface.

The RRP could be an informal forum that provides a point of interface for research program leads. The region currently lacks a forum where researchers can cross institutional and disciplinary boundaries and find peer support for potentially controversial recommendations. A key challenge for he RRP would be to move beyond the piece-meal solutions that have undercut the success of past restoration efforts, e.g., design a comprehensive effort to reduce sources of mortality across the life cycle of the salmon. The RRP could foster integration of the currently compartmentalized research agendas and budgets of entities that share common objectives.

Several initial meetings have been held with potential partners to discuss the RRP, with CBFWA in Portland, and with NOAA, USGS, EPA in Seattle. These exchanges indicated strong support for the Council's research plan as a document that facilitates a regional approach to research, and also could inaugurate a process for coordinating existing research initiatives. Support for this scenario was expressed through the public comments, which recommended that such a partnership:

1. collaboratively identify regional research priorities;
2. facilitate implementation of the plan through cost-sharing and other means; and,
3. develop means for the dissemination of research results.

The effort to launch the RRP could be staffed by Council until such time that it becomes sufficiently organized to have the members provide support on a rotating basis. The CBFWA, USGS, and NOAA have all offered to work with Council staff to help sponsor the Regional Research Partnership.

Disseminating Results via a Journal

In regards to the dissemination of research and restoration project results, staff is discussing the idea of Council sponsorship of a journal that could provide short turn around to a regional audience that includes managers and help focus discussion on problem definition. It may also bring cohesion to the fragmentation of decision making across middle management groups.

Next Steps

Complete revisions and provide to ISAB/ISRP and CBFWA Workgroup for final review by the end of October.

Convene Regional Research Partnership in mid-November to: develop process for identifying research priorities and identify immediate regional research priorities.

Complete ISAB/ISRP review period by the end of November.

Complete revisions to plan based on ISAB/ISRP review by end of December.

Present final research plan to Council in January.