

Joan M. Dukes
Chair
Oregon

Bruce A. Measure
Montana

James A. Yost
Idaho

W. Bill Booth
Idaho



Rhonda Whiting
Vice-Chair
Montana

Bill Bradbury
Oregon

Tom Karier
Washington

Phil Rockefeller
Washington

July 26, 2012

MEMORANDUM

TO: Council Members

FROM: John Shurts

SUBJECT: Approval of final explanation for the resident fish/data management/coordination project review

At the July meeting in Boise the Council made its final decisions on the project recommendations and related programmatic recommendations in the resident fish, data management, and regional coordination category review. If you will remember, there was a placeholder Part 6 to the final decision document. Part 6 is to contain the formal explanations by the Council required by Section 4(h)(10)(D) in those few instances in which the Council's project recommendations do not follow the recommendations of the Independent Scientific Review Panel. The Council also uses this section to explain how it complied with the requirements in Section 4(h)(10)(D) to "consider the impact of ocean conditions on fish and wildlife populations" and "determine whether the projects employ cost-effective measures to achieve program objectives" when making project-funding recommendations.

Attached for your consideration and approval during Council Business at the August meeting is a draft of that Part 6. We have a few, relatively minor deviations from ISRP recommendations in the resident fish category to explain. Considering the effects of ocean considerations has little meaning for this review, and I have captured why here. And I included our standard discussion of how we approach the cost-effectiveness considerations in our project reviews.

This is not a policy document, and it is not an opportunity to revisit the project or programmatic recommendations. It is an explanation reflecting a process already completed and decisions already made. Please review it in that light. If it is acceptable and the Council approves it (as is or as modified at the meeting), we will insert this Part 6 into the final decision document.

Thank you.

enclosure

Part 6: Council explanations addressing the formal requirements of Section 4h(10)(D) of the Northwest Power Act

Part 6 contains the formal explanations by the Council responsive to certain specific requirements of Section 4(h)(10)(D) of the Northwest Power Act. This includes the written explanations required of the Council in those few instances in which the Council's project funding recommendations do not follow the recommendations of the Independent Scientific Review Panel. The Council also explains how it complied with the requirements in Section 4(h)(10)(D) to "consider the impact of ocean conditions on fish and wildlife populations" and "determine whether the projects employ cost-effective measures to achieve program objectives" when making project-funding recommendations.

Explanations as to how the Council responded to the recommendations of the Independent Scientific Review Panel

Section 4(h)(10)(D) requires the Council to "fully consider the recommendations of the Panel when making its final recommendations of projects to be funded through BPA's annual fish and wildlife budget." If the Council "does not incorporate a recommendation of the Panel, the Council shall explain in writing its reasons for not accepting Panel recommendations." Finally, "[t]he Council, after consideration of the recommendations of the Panel and other appropriate entities, shall be responsible for making the final recommendations of projects to be funded through BPA's annual fish and wildlife budget." The Council has carefully and fully considered the project review reports of the ISRP, and with the few exceptions explained here, the Council has followed the panel's recommendations in formulating the Council's project funding recommendations. The few exceptions requiring an explanation all come from the resident fish category.

Hungry Horse Mitigation Habitat Restoration and Research, Monitoring and Evaluation (1991-019-03)

As one aspect of this many-faceted project, the Montana Department of Fish, Wildlife and Parks proposed to assess the after-effects of the treatment of mountain lakes in the Flathead River basin with rotenone, part of the overall effort to recover the habitat capacity for and thus abundance of native cutthroat trout. The two relevant work elements or deliverables proposed included an effort to quantify the environmental determinants indicating rotenone decay and to assess the rate and diversity of the recolonization of macroinvertebrate and zooplankton communities after rotenone treatment. The ISRP concluded that these two work elements did not meet scientific review criteria largely because there is already a basis in the existing scientific literature for understanding the fate and persistence of rotenone and the nature and rate of recolonization. The project proposal did not identify unique circumstances or uncertainties requiring assessment in the field rather than relying on work done elsewhere.

Montana Fish, Wildlife and Parks responded partly by questioning the underlying basis for the ISRP's conclusion. The agency provided information indicating contradictory findings from

previous rotenone studies that in their view preclude making general conclusions about the effects of rotenone on aquatic invertebrates. More important, Fish, Wildlife and Parks provided information indicating a commitment by the agency and its partners -- in an environmental impact statement, in records of decisions, and in community outreach -- to monitor and evaluate the impact of rotenone treatment on lake conditions. The Council has been informed that rotenone treatment of lakes was a controversial step in the cutthroat recovery effort, and the agency helped to gain approval for this step by promising its partners and the public that it would provide direct monitoring and evaluation evidence of the recovery of healthy lake conditions as described in the environmental reviews associated with the project. To support this commitment, the Council decided to recommend these work elements along with other elements of the project that the ISRP did not dispute.

Hungry Horse Mitigation -- Creston National Fish Hatchery (1991-019-04)

As a related part of the Hungry Horse mitigation effort noted above, in this project the U.S. Fish and Wildlife Service proposes to continue allowing the use of its Creston National Fish Hatchery to produce fish for lake harvest. The lead sponsors of this work are actually the Montana Department of Fish, Wildlife and Parks and the Confederated Salish-Kootenai Tribes.

The ISRP concluded that the proposal did not meet scientific review criteria, stating that the Hungry Horse Mitigation sponsors have “not provided the kind of information necessary for a scientific review of the biological or fishery benefits and costs.” The primary basis for the ISRP’s conclusion was the lack of “a monitoring and evaluation plan [] against which to evaluate claimed success and mitigation benefits.” This meant, among other things, that there is “no direct support for the sponsor's claim that the lake fisheries divert harvest pressure from local sensitive areas....” The ISRP called for a comprehensive monitoring and evaluation plan within the overall context of the Hungry Horse Mitigation project and then “an evaluation summary of biological and fishery data; and evidence of diverted pressure benefiting the local sensitive populations. While the sponsor provided some very basic information which the ISRP identified for inclusion in results reporting, for example the sites stocked and health/pathogen certifications, the broader reporting requested based on a foundational M&E plan was not provided.”

The Council agrees with and supports the ISRP’s conclusion about the need for an adequate monitoring and evaluation plan, and a project evaluation based on that plan, if this production program is to continue. The Council is recommending as a condition of continued project implementation that the agencies leading the mitigation effort collaborate over the next two years on the development of a monitoring and evaluation plan as described by the ISRP and a retrospective evaluation of the work in the Flathead River basin, for review by the ISRP and Council. Continued implementation of this production project in and beyond FY 2015 depends on a favorable outcome of this plan and review.

The Council does not consider this recommendation to be inconsistent with the ISRP’s conclusion. But the Council is providing this explanation because the Council’s project recommendation does allow the project to continue to be implemented for another two years on

these conditions, despite the ISRP's conclusion that the project does not meet scientific review criteria.

Dworshak Dam Resident Fish Mitigation (2007-003-00)

One work element or deliverable in this project proposed to continue what are known as the "enclosure experiments," experimental work in enclosures in the reservoir by the project sponsor (the Idaho Department of Fish and Game) to assess the effects of nitrogen fertilization on the growth of blue-green algae. The ISRP concluded that this work element did not meet scientific review criteria, commenting that the enclosure experiments are not adequately justified especially given what is already known in the scientific literature about the effects of fertilization.

For reasons similar to those described above with regard to the evaluation of the effects of rotenone treatment in the Flathead River basin, the Council is recommending that the experiments continue to conclusion as designed, for two further years only through FY 2014 (other aspects of the project are to continue through FY 2017). The recommendation reflects the information the Council received about the need Idaho Fish and Game has to respond to public concerns expressed about the proposed addition of nitrogen to the reservoir for fertilization. The experiments are intended to fulfill a commitment to demonstrate to the public and to the agency partners at Dworshak Dam (including the Corps of Engineers) that nitrogen fertilization is not the cause of and does not exacerbate the blue-green algae blooms that currently affect the reservoir.

Non-Native Fish Suppression in Graham Creek (2007-149-00)

One objective proposed in this multi-objective project is to maintain stable or reduced numbers of lake trout, with a related work element focused on removing lake trout. The ISRP concluded that this aspect of this project did not meet scientific review criteria. In the ISRP's view, "[b]ased on the apparent lack of success of past efforts to decrease lake trout and increase bull trout abundance, and the problems posed by recreational activities to trapping lake trout [], success of future efforts is highly uncertain."

Based on the ISRP review and other information, the Council has recommended funding for the lake trout removal objective for one year only, through FY 2013. Implementation of this objective beyond FY 2013 depends on the success of the Kalispel Tribe and the Idaho Department of Fish and Game in reshaping the proposed work to address the ISRP's concerns and receiving a favorable review of that reshaped proposal from the ISRP.

As with the Hungry Horse fish production project, the Council does not consider this recommendation to be inconsistent with the ISRP's conclusion. But the Council is providing this explanation because the Council's project funding recommendation does allow an objective and deliverable to receive funding for one further year despite the ISRP's conclusion that the objective does not meet scientific review criteria.

Colville Hatchery Operation and Maintenance (1985-038-00) and Rufus Woods Net Pens (2008-117-00)

The ISRP concluded that the trout production aspects of these coordinated projects did not meet scientific review criteria, commenting that “[t]he sponsor needs to develop a trout stocking master plan which guides the annual stocking, provides a basis for Fish and Wildlife Program proposal review, and provides for evaluation of the success of the program.” The Council agreed with the views of the ISRP, recommending that implementation of this project require the project sponsor to develop a trout stocking plan as described by the ISRP prior to FY 2015. Implementation beyond FY 2014 will be dependent on a favorable ISRP and Council review of the trout stocking plan.

Again, the Council does not consider this recommendation to be inconsistent with the ISRP’s conclusion. But the Council is providing this explanation because the Council’s project recommendation does allow the project to continue to be implemented for another two years on these conditions to develop the stocking plan, despite the ISRP’s conclusion that the project does not meet scientific review criteria.

Consideration of ocean conditions

Section 4(h)(10)(D) provides that “in making its recommendations” to Bonneville, the Council is to “consider the impact of ocean conditions on fish and wildlife populations.” Congress provided no other guidance as to the meaning of this consideration. The Council’s initial policy response to this charge came in an issue paper titled *Consideration of ocean conditions in the Columbia River Basin Fish and Wildlife Program* (Council Document No. 97-6; <http://www.nwppc.org/library/1997/97-6.htm>). This paper continues to guide how the Council responds to the direction to consider ocean conditions in its project funding recommendations.

Our regional understanding as to how ocean conditions affect Columbia River salmon and other anadromous fish populations continues to increase, even while much uncertainty remains both about how ocean conditions affect Columbia populations and about the management implications of that information. Our increasing knowledge does include greater appreciation for the impact of the ocean on salmon abundance and the degree of variation in the marine environment. The key scientific principle guiding the Council’s consideration is that salmon and steelhead handle environmental variation throughout their life cycle and over time, including within the ocean portion of their lives, by having a broad array of biological characteristics within and between populations.

In addition, while the fish and wildlife program and projects cannot influence the ocean environment, actions can be taken to improve water quality and habitat in the estuary and near-shore environments. These transition zones are critical to the survival of young salmon.

Consequently, the Council’s 2009 Fish and Wildlife Program describes the ocean environment as an integral component of the Columbia River ecosystem. The primary strategy called for in the program is to “identify the effects of ocean conditions on anadromous fish

survival and use this information to evaluate and adjust inland actions.” The Fish and Wildlife Program then included set forth two strategies to guide the program’s activities with regard to the freshwater plume, the near-shore ocean, and the high seas:

1. Manage for Variability

Management actions should strive to help anadromous fish and other species accommodate a variety of ocean conditions by providing a wide range of life history strategies. Continue monitoring and evaluation of the Columbia River plume and ocean conditions for impacts on salmonid survival. Monitor salmon returns and climate-change impacts on ocean conditions in order to identify factors affecting survival in the ocean and plume.

2. Distinguish Ocean Effects from Other Effects

Monitoring and evaluation actions should recognize and take into account the effect of varying ocean conditions and, to the extent feasible, separate the effects of ocean related mortality from that caused in the freshwater part of the life cycle.

The Fish and Wildlife Program’s biological objectives for population and environmental characteristics and its strategies for the mainstem, estuary, habitat, and artificial production add further consideration of relevance. Taken together, the three primary ways the Council acting under the program can take into account ocean conditions in general and influence salmon survival in the ocean are to evaluate proposals and recommending funding for projects that: (1) further improve our understanding of the effects of ocean conditions on salmon populations; (2) improve productivity and preserve and extend life-history diversity in salmon populations; and (3) improve estuarine and near-shore conditions.

Turning to these particular reviews, however, the relevance of the obligation to consider ocean conditions is minimal. Coordination and data management projects are not affected by environmental conditions of any type, obviously, while by definition resident fish reside in freshwater environments and marine environments are relevant, if at all, in only a highly indirect way.

Meanwhile, as an outcome of the Council’s recent review of all the monitoring, evaluate, research and artificial production projects, the Council is currently in the middle of an effort to reshape the ocean research under the Fish and Wildlife Program, based on recent synthesis of research and information to date. The point of that reshaping will be to take what we have learned about ocean effects so far and use that information to refocus the research on what are still the key uncertainties that relate to program management.

Cost-effectiveness measures

Section 4(h)(10)(D) further provides that in making the project funding recommendations, the Council is to “determine whether the projects employ cost-effective measures to achieve program objectives.” As with the command to “consider ocean conditions,” Congress did not provide any further explanation or guidance as to the meaning of this provision. The legislation did not specify any particular approach to cost-effectiveness analysis or define in any particular what is meant by a “cost-effective measure.” The provision does not require, for example, the use of a single measure of biological effectiveness as a basis for comparison among projects, nor the use of strictly quantitative analysis. And while the logic of the Council’s program might focus most of the cost effectiveness analysis among and between project proposals, the literal wording calls for a cost-effectiveness analysis only *within* projects, that is, whether any particular project employs the best of possible alternative methods to meet its objectives.

Given this context, the Council has worked over the years to understand the state of the art in natural resource economics and cost-effectiveness analyses to help guide the Council in making the determination required. Soon after Congress adopted this amendment to the Power Act in 1997, the Council, with the help of its staff economists and its newly-formed Independent Economic Analysis Board (IEAB), developed an approach to the cost-effectiveness analysis in a document titled *Methods of Economic Analysis for Salmon Recovery Programs*, Council Document No. 97-12 (July 1997) (“methods analysis”). The Council first used this methods analysis to initiate the cost-effectiveness determination in the project review process for Fiscal Year 1998. It remains the basis today for the analysis and determination.

The methods analysis concluded that several problems make it difficult for the Council to undertake a quantitative cost-effectiveness comparison between Columbia River fish and wildlife projects using a single, quantified measure of benefits to determine which projects produce the greatest benefits per dollar. The problems include the lack of agreement on measures of biological effectiveness; the fact that the complex life-cycle of anadromous and resident fish makes it difficult to isolate the biological effects of particular activities or to compare different biological effects of different kinds of projects; and the fact that in the project review process, different project sponsors propose vastly different types of activities, and thus different kinds of cost and economic information, which makes cost comparisons difficult.

These observations remain valid. There are sound reasons to believe projects produce benefits to fish and wildlife, as explained below, but not in a directly predictable single quantity. A quantitative cost-effectiveness comparison still requires a greater understanding of the direct biological effectiveness of individual actions than we have now.

The methods analysis noted, however, that there is much more to cost effectiveness than a quantitative comparison of the costs of alternative ways to achieve a single biological objective. Much can be done to review the efficiency of projects, to improve the likelihood that the projects selected will be the most cost effective, and to improve project management. Cost-effectiveness review drives toward procedures for project review, selection, and management that emphasize efficiency and accountability.

Based on these considerations, the methods analysis recommended four strategies to improve the likelihood that the projects recommended for funding are those that employ cost-effective measures to the greatest degree:

- Strategy 1: The best assessment of the effectiveness of fish and wildlife projects comes from the review by the Independent Scientific Review Panel (ISRP).
- Strategy 2: Improve the amount, quality, and comparability of project cost information.
- Strategy 3: Evaluate the record of existing projects over time. Projects that have been ongoing for some time should have yielded some measurable effects or have contributed some concrete addition to the region's knowledge about fish and wildlife problems.
- Strategy 4: Introduce selective audits on projects, oriented toward determining whether the contracting process contains the procedures necessary to manage the project's cost and effectiveness.

The Council's experience over the years has added to or elaborated on this set with three further strategies: (1) clarify, specify, and quantify program objectives as much as possible; (2) develop other elements of project review besides ISRP review that also provide accountability benefits; and (3) flag certain projects and programs for more in-depth review of benefits and costs.

The Council acted consistent with these strategies in the just-completed review of the resident fish, data management and coordination projects. In particular, the Council relied heavily on the views of the independent science panel in shaping its recommendations, selected certain program areas for further synthesis and review in order to evaluate just how effective key program areas are, and used this review both to evaluate projects and to continue to call for improvements in reporting in order to have a better basis for evaluating projects over time.