

Review of the Columbia River Basin
Fish and Wildlife Program
for Fiscal Year 2000 as Directed by the
1996 Amendment of the Northwest Power Act

Report of the
Independent Scientific Review Panel
for the Northwest Power Planning Council

Volume I

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ISRP 99-2
June 15, 1999

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Preface to the ISRP FY2000 Report

The Independent Scientific Review Panel (ISRP) evaluated 397 project proposals submitted for funding within the Northwest Power Planning Council's (NPPC or Council) Fish and Wildlife Program (FWP) for FY2000. As a result of our evaluation, we placed the individual proposals in one of five funding recommendation categories: 1) fund; 2) fund in part; 3) fund for one year, with subsequent funding contingent on addressing deficiencies identified by the ISRP; 4) delay funding until deficiencies are corrected; and 5) do not fund. In addition, we identified those proposals that were particularly innovative or adequate for multi-year approval.

Our FY2000 report is presented in two volumes. **Volume I (*Review of the Columbia Basin Fish and Wildlife Program, FY2000*)** describes the formation of the ISRP, its review charge, the review process used for FY2000, including an extensive use of the Peer Review Groups (PRGs). This is followed by a comparison with our FY1999 review, an overall assessment of the FY2000 review, and programmatic recommendations. Volume I continues with sections that describe innovative proposals, a multi-year review cycle for proposals, and ISRP funding recommendations that disagree with recommendations from CBFWA (Columbia Basin Fish and Wildlife Authority). The volume concludes with the ISRP's review of projects organized by subbasin or programmatic topics.

Volume I contains 27 ISRP recommendations that, like those in our previous reports, are set off from the surrounding text in boxes.

Volume II (*Review and Recommendations of Individual FY2000 Project Proposals*) contains summary reviews for each project proposal submitted in the FY2000 cycle. Each proposal review includes summaries of the Peer Review Group (PRG) comments and a consensus statement from the ISRP recommending for or against funding, based on criteria provided in the congressional language in the legislation that established the ISRP (the 1996 amendment to the Northwest Power Act).

Aside from some brief introductory material, Volume II deals exclusively with the summary reviews and recommendations for each of the 397 FY2000 proposals. ISRP recommendations in Volume II are specific to each proposal. It is the ISRP's intent that the recommendation specific to each project proposal in Volume II be viewed as equivalent to the boxed recommendations of Volume I. As such, they are formal ISRP recommendations to the Council on FY2000 funding decisions.

Volume I: Review of the Columbia Basin Fish and Wildlife Program, FY2000

I - Introduction

A. The 1996 Amendment to the Northwest Power Act

The Independent Scientific Review Panel's formation, responsibilities, and activities were defined by the 1996 amendment to the Power Act. The amendment directed the Northwest Power Planning Council (hereafter Council or NPPC) to form an Independent Scientific Review Panel (ISRP) to make recommendations to the Council on project priorities within the Columbia River Basin Fish and Wildlife Program (FWP) and to review the projects proposed for funding for their scientific merit and consistency with the program. The ISRP must report its findings annually by June 15 before the Council adopts its annual funding recommendations.

The amendment was the latest in a series of recent changes in the way the region selects and funds projects under the FWP. Prior to 1995, the Bonneville Power Administration (BPA) chose which measures in the FWP to implement and then selected the specific projects and contractors. In 1995, BPA and the Council adopted a procedure that formally included the basin's fish and wildlife managers and the Council in the process leading to project selection and funding. This new approach called on the fish and wildlife managers to prioritize all proposed projects and present them to the Council in the form of an Annual Implementation Work Plan. The Council could then either ratify or revise the managers' priorities before submitting them to BPA for funding. Also in 1995, the Clinton Administration agreed to a six-year budget for BPA's fish and wildlife costs. This meant that proposed projects had to be prioritized within a fixed budget.

Incorporating independent peer review¹ and the project selection changes made in 1995 into a smoothly functioning process has been a challenge to the region. Ongoing adjustments and improvements have been made during the last two years in a cooperative, iterative, and educational effort involving the Council, the ISRP, the fish and wildlife managers, BPA, and interested non-governmental entities. These efforts have resulted in significant changes to accustomed practices. This report describes the results of the ISRP's third and most comprehensive independent peer review of the FWP and the FY2000 project proposals.

B. ISRP Charge

The 1996 amendment to the Northwest Power Act mandated formation of the ISRP and Peer Review Groups to conduct an annual, independent peer review of projects proposed for funding within the FWP. Formalization of a peer review structure and process addresses a common criticism of past activities in the Basin. The role of peer review has been recognized nationally as a valuable tool to increase the efficiency and effectiveness of large-scale scientific programs (General Accounting Office 1994; Meffe et al. 1998).

¹ Peer review has an important and necessary role to play in ensuring competence, technical rigor, and progress toward regional salmon recovery goals (see extended discussion in Section IIC; Rationale and Philosophy for Peer Review, pp. 9-13 of the ISRP's 1998 review of the FY1999 Program [ISRP 98-1]).

The 1996 amendment to the Northwest Power Act specifically states:

"The Peer Review Groups, in conjunction with the Panel, shall review projects proposed to be funded through BPA's annual fish and wildlife budget and make recommendations on matters related to such projects to the Council no later than June 15 of each year."

"The Panel and Peer Review Groups shall review a sufficient number of projects to adequately ensure that the list of prioritized projects recommended is consistent with the Council's program. Project recommendations shall be based on a determination that projects: are based on sound science principles; benefit fish and wildlife; and have a clearly defined objective and outcome with provisions for monitoring and evaluation of results."

The amendment covers a four-year period beginning in 1997. The ISRP is required to report the results of its review each year by June 15th, and before the Council adopts its funding recommendations. The Council is obligated to explain in writing if its recommendations disagree with those contained in the ISRP's report. All specific ISRP recommendations are highlighted (boxed) in the text of Volume I of the report. In Volume II, which presents the ISRP's summary review comments for each proposal, ISRP recommendations are not boxed. Instead, an ISRP recommendation for each proposal accompanies its review comments. Thus the ISRP provides a specific recommendation for each FY2000 proposal in Volume II.

II. Summary of Previous ISRP Reports and Recommendations

A. Fiscal Year 1998 Report (FY1998)

The ISRP's first report covered the projects submitted in 1997 for FY1998 funding. We reviewed a sample group of 100 project proposals (out of approximately 225) and found them to be generally superficial and inadequate for scientific review. We recommended that project managers focus more on the description of project design, methods, and monitoring and evaluation so that the projects' relative scientific merit and effectiveness could be judged. We made a number of recommendations aimed at increasing coordination, creating a uniform set of standards and policies for review of project proposals, and implementation of a competitive grants program.

Most of the FY1998 ISRP report covered broad programmatic issues including the need for an integrated ecological framework for fish and wildlife, the need for increased coordination in habitat restoration projects and programs, the need for a comprehensive review of artificial production, and the need to inventory remaining native resident fish populations.

Within the habitat restoration recommendations, the ISRP called specifically for habitat policies and objectives to be established for each major subbasin and coordinated with overall production goals for the subbasin (ISRP Recommendation III.B.6; ISRP 1997). The ISRP also recommended that the development of reliable watershed assessment procedures be given high priority (III.B.7) and for watershed assessments to *precede* implementation of restoration projects so that probable limiting habitat factors would be identified and a reasonable expectation of restoration effectiveness would exist (III.B.11).

Within the artificial production recommendations, the ISRP called specifically for a comprehensive review of artificial propagation in the basin (III.B.10). The ISRP also asked the Council not to approve funding for the construction and operation of new artificial propagation programs in the FY1998 program until a comprehensive review of existing hatchery programs adequately addressed Measures 7.0D, 7.1A, 7.1C, 7.1F, and until at least a preliminary policy addressing Measure 7.1D had been drafted (III.B.8). Subsequent to our report, Congress mandated that the Council conduct a comprehensive review of artificial production with assistance from the ISAB (Independent Scientific Advisory Board). The first phase of the review is nearly complete and policy recommendations will be sent to Congress.

Within the resident fish recommendations, the ISRP called specifically for the Council to provide clear direction as to the desired implementation sequence among related measures for resident fish within Section 10 of the FWP (III.B.12); to require a basin-wide systematic inventory of remaining native resident fish populations and their status, upon which opportunities for restoration and rebuilding native resident fish populations can be identified and prioritized (III.B.13); and to provide greater attention and project funding on measures in sections 10.1 and 10.2, which focus on planning, development of policy guidelines, and assessments of remaining diversity and population status in resident fish populations (III.B.14). Finally, the ISRP recommended that *substitution* projects, particularly those using non-native species, be viewed cautiously because their implementation may pose significant threats to native resident fish

species. Therefore, individual *substitution* projects should be reviewed by the artificial production review panel (see ISRP Recommendation III.B.9) prior to authorization (III.B.16).

B. Fiscal Year 1999 Report (FY1999)

In contrast to the FY1998 report, which was largely programmatic in nature, the ISRP's FY1999 report focused almost exclusively on the review of individual project proposals. The ISRP evaluated 403 FY1999 proposals submitted for funding within the Council's FWP. We placed individual proposals in one of three categories: adequate, inadequate, or inadequate but adequate purpose. The first two categories were a judgment on the technical quality of the proposal and did not necessarily reflect the need for or the priority of the work proposed. In some cases, proposals were placed in the inadequate proposal category because their need could not be determined from the technical justification given. The third category included proposals that were technically inadequate, but it was clear to the ISRP the project addressed important needs in the basin. At least 40% of the proposals fell into the two inadequate categories. The ISRP felt these results identified a major problem that needed to be addressed. At some point in the future (to be determined by Council), the ISRP thought that inadequate proposals should not receive funding.

Additionally, the FY1999 report contained several important observations and recommendations including:

1. Many proposals related to artificial propagation were inadequate. The ISRP deferred making any recommendations relative to specific hatchery programs until the comprehensive review of artificial propagation is complete.
2. A large number of habitat restoration projects were not guided by the findings of a watershed assessment, contrary to the ISRP recommendation in its FY1998 report. The ISRP revisited its FY1998 recommendation regarding watershed assessment and strengthened it for this report.
3. Some of the ISRP's recommendations are designed to expedite or improve the peer review process. For example, we recommended a multi-year funding process for specific projects or groups of projects.
4. The region has been implementing the FWP for 16 years; yet the ISRP noted that progress towards the program's goals is not reported in the Annual Implementation Work Plan. One of our recommendations urged the Council to correct that oversight.
5. We also recommended the Council take specific steps to encourage the submission of innovative proposals.

III. Results of FY2000 Proposal Review

A. Review Process

ISRP Membership

The ISRP was appointed by the Council in December 1996. It was composed of eight members from the existing ISAB augmented by three additional members with expertise in wildlife, oceans, and natural resource economics. Three of the members – Drs. Jack Stanford, Peter Bisson, and Robert Francis -- resigned prior to the start of the FY2000 review of projects. Drs. Richard Whitney, Dennis Lettenmaier, and William Smoker replaced these members. The ISRP review and the recommendations contained herein are the product of a consensus process. All the members agree with the descriptive text and the formal recommendations contained in the report.

Issues Carrying Over from FY1998 and FY1999 Reviews

An initial problem in the annual proposal review cycle was the time period (February – June 15) allowed relative to the large scale of the review. Earlier submission of the project proposals in December 1999 aided our current FY2000 review and provided adequate time for review of the project proposals, comparisons with the CBFWA rankings, and preparation of our 15 June report to Council. Nevertheless, reviewing the approximately 400 proposals in both the FY1999 and FY2000 cycles was a time-consuming endeavor and left the ISRP little time to address programmatic issues raised in the course of the reviews

The ISRP is concerned about not being able to give programmatic issues consideration commensurate with that given project proposal review during the winter-spring review period. In this report, we present only programmatic concerns that arose directly out of the ISRP and PRG's (Peer Review Group) reviews of the nearly 400 FY2000 project proposals. These are presented below in Section IV B.

Other longer-term programmatic issues related to program direction, project priority, consistency of the proposed projects with the Council's Fish and wildlife Program, system-level monitoring and evaluation, and many other issues remain largely unaddressed by the ISRP. These issues are important, arguably critically important, in focusing the region's efforts in a concentrated and coordinated manner that achieves measurable progress toward the FWP's fish and wildlife rebuilding goals. The ISRP hopes to address these higher-order programmatic concerns in a retrospective report, to be submitted to Council in at a later time. The focus of the retrospective report will be on general patterns and programmatic issues and not on specific proposals or recommendations from the FY2000 review.

Consequently, the ISRP recommends that Council not delay funding decisions pending receipt of the retrospective report, but rather that funding decisions be made on the basis of this present report.
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Peer Review Group

A major difference between this year's review and the ISRP's first two reviews is that we made extensive use of the Peer Review Groups (PRG) as called for in the 1996 amendment. A Peer Review Group consists of scientists from within and outside the Columbia Basin appointed by the Council for the purpose of assisting the ISRP with proposal review. In the ISRP's FY1998 report, we described a workplan for FY1999 that included the extensive use of Peer Review Group members. However in FY1999, the ISRP concluded that before asking 25 to 30 individuals to commit a significant amount of time and effort serving on a Peer Review Group, it was important to test the criteria and procedures ourselves to identify problems and correct them. In the FY1999 review, we did obtain the review assistance of two scientists from the list previously approved by the Council. This effort helped instruct this year's extensive use of the Peer Review Group.

The FY1999 proposals were reviewed by 12 people (ten ISRP members and two PRG members), whereas the FY2000 proposals were reviewed by 38 people (11 ISRP members and 27 PRG members). Only twelve scientists participated in both the FY1999 and FY2000 reviews. The additional PRG members used in FY2000 were selected from within and outside the region. PRG members represented a broad spectrum of scientific and technical expertise from the academic and consulting communities, as well as from federal and state fisheries management agencies. The addition of 27 Peer Review Group members enabled us to develop in-depth comments on each proposal. Importantly, as the review process proceeded, it became clear there was strong concordance between the reviews of independent PRG and ISRP members. Disagreements in relative ratings of proposals were rare, and similar comments were made by many reviewers. Indeed for many proposals that changed little if at all between the FY1999 and the FY2000 versions, the PRG review comments were nearly identical to those of the ISRP from last year. This concordance between the reviews from the two years was noteworthy and provides support for the peer review process as a method of providing a consistent evaluative filter for proposals and projects within the region, one of the intents of the 1996 amendment to the Power Act that created the ISRP and this review process.

FY2000 Proposals

Although BPA's solicitation letter for FY2000 proposals described budget limitations in funding new proposals, the number of proposals did not substantially decrease from FY1999. Again, the ISRP received approximately 397 proposals requesting funding. In addition, approximately 37 umbrella proposals that did not request funding were added to this year's review process.

The review of individual project proposals consisted of six steps:

1. The Columbia Basin was divided into subregions (Table 1).

Table 1. Geographical division of the Columbia Basin into subregions and subbasins.

Subregion	Subbasin
SYSTEMWIDE including Ocean/Estuary and Mainstem	
LOWER COLUMBIA	Cowlitz, Lewis Willamette, Sandy
LOWER MID-COLUMBIA	Wind, Hood, White Salmon, Klickitat Fifteenmile Creek, Deschutes, John Day Umatilla, Walla Walla Yakima
UPPER MID-COLUMBIA	Crab Wenatchee, Entiat Methow, Okanogan
UPPER COLUMBIA	Above Chief Joseph Dam Pend Oreille, Coeur d'Alene Kootenai, Flathead
LOWER SNAKE	Palouse, Asotin, Clearwater Grande Ronde, Imnaha Salmon
UPPER SNAKE	Snake River above Hells Canyon Owyhee, Malheur

2. Review teams consisting of at least one ISRP member and two Peer Review Group members were assigned to review all the proposals associated with specific geographical units (subregions and larger subbasins). Review teams were constituted to provide a full breadth of expertise, and individual review assignments were made in consideration of potential conflicts of interest. Each proposal was read and evaluated by at least three reviewers. Thus, each reviewer examined approximately 30 proposals.
3. Proposal evaluations were based on criteria developed in consultation with the ISAB. In our FY1999 report, we found that different criteria were needed for different types of projects. For example, it was difficult to judge the technical merits of a research proposal for mainstem fish passage and another proposal for operation and maintenance of irrigation screens using the same questions and criteria. Consequently, the ISRP developed seven different sets of criteria for the FY2000 review that include: watershed councils/model watersheds; information dissemination; operation and maintenance; new construction; research and monitoring; implementation and management; and wildlife habitat acquisitions. Generally, review criteria reflected both the standards outlined in the 1996 amendment and conventional standards for peer review. They included consistency with the FWP, demonstration of benefits to fish and wildlife, technical justification of the project, specific measurable objectives, adequate design and defensible techniques, adequate monitoring and evaluation, and coordination with similar projects. These criteria were included in the project review form BPA sent out with instructions for the preparation and submission of

proposals. Proposal writers were asked to select the criteria that applied to their project and most selected several of the ISRP's criteria. To simplify the evaluation process and make scoring consistent, the ISRP assigned each proposal one type of criteria that best applied to the project. Using these criteria, each reviewer assigned a numerical score to each proposal. In addition, each reviewer made notes of comments for each proposal to bring to a group evaluation meeting.

4. The ISRP held 16 daylong meetings to discuss the individual proposals. In general, all the proposals within a specific subbasin were discussed in a single day's session. In addition to the ISRP members assigned to read and evaluate the proposals for a given subregion, other ISRP members attended the meetings and participated in the discussion and review of the proposals.
5. Discussion of the individual proposals was carried out in two steps. Each reviewer's scores for the proposals in a subregion or subbasin were compared and the proposals discussed. To aid this discussion, the group viewed each reviewer's comments. We recorded major positive and negative comments on each proposal during those discussions (Volume II) and developed a recommendation for each proposal. Recommendations generally fell into one of five categories: 1) fund, 2) fund in part, 3) fund for one year, with subsequent funding contingent on addressing deficiencies identified by the ISRP, 4) delay funding until deficiencies are corrected, and 5) do not fund (see additional explanations of these categories below). In addition, review groups identified those proposals that were particularly innovative or adequate for multi-year approval.
6. Following the review group meetings, the ISRP conducted a consistency review across subbasins to ensure that similar quality proposals received consistent recommendations from peer review group to peer review group. To do this the ISRP categorized each proposal into topical areas such as wildlife, coordination, and habitat restoration, rather than the subbasin organization under which they were originally reviewed. Then members compared the review group comments and recommendations by topic. In addition, the ISRP met for two days to discuss, refine, and reach consensus on individual review group recommendations. The ISRP specifically focused discussion on each "do not fund" recommendation.

The information gained from the individual project reviews was used for four types of actions:

1. Evaluation of the scientific quality of individual proposals.
2. Identification of programmatic-level recommendations.
3. Comparison with CBFWA's funding recommendations and priorities.
4. Assessment of the evaluation criteria and review process and revision as needed.

ISRP Funding Recommendation Categories

In addition to the recommendations of **Fund** and **Do Not Fund**, the ISRP recommended funding projects with some qualifications in each of three categories. Each of these recommendations involves a critical shortcoming that would prohibit strong scientific support for the work if not corrected. The three categories of recommendation reflect the ways in which shortcomings would best be addressed. These involved

- (1) provision of critical missing information before a project begins or continues (**Delay Funding**),
- (2) provision of critical missing information in a subsequent proposal (**Fund for 1 Year**), and
- (3) deletion of one or more proposed components of a project (**Fund in Part**).

A recommendation of **Delay Funding** (until some critical information or clarification is provided, as specified in the proposal review) was assigned to a proposal that had some serious deficiency that, without correction, precluded scientific support for the work. Examples include proposals for acquisition of land that lacked clear description of the land to be purchased or of the basis for assigning its priority for purchase, proposals for habitat restoration that did not justify methods of restoration or that did not supply evidence that the area to be treated was well-chosen as a priority for work, and proposals for hatchery planning and construction that did not give critical background justification for proposed work. Proposals assigned a Delay Funding recommendation were viewed as not scientifically sound without immediate revision or clarification of some element of the proposed work.

Possible means to resolve **Delay Funding** recommendations. The table lists the information or task that is needed to address the proposal's deficiency and suggests an appropriate review body after the deficiency has been addressed.

<u>Need</u>	<u>Review Responsibility</u>
1) Additional technical information needed	possible ISRP review
2) Programmatic Review Needed	under ISRP direction via site visiting committee, or independent review panel
3) Establish and justify priority of project	ISRP, BPA

A recommendation of **Fund for 1 Year** was assigned to a proposal that was overall considered to be sufficiently sound for work to be done immediately but that lacked a critical element needed to justify the work over the longer term. Proposals assigned to this category had many positive elements, but also had some critical missing components, without which a project would be unlikely to achieve the objectives of the Fish and Wildlife Program. They were viewed as having an important scientific shortcoming that needed to be corrected soon, but as having short-term or on-going objectives that could be pursued for a year without damage likely to result from the missing element(s) of the proposed work.

Examples include proposals for acquisition and management of land for wildlife mitigation that did not include a sound monitoring and evaluation plan or that did not include justification of and plans to evaluate effects of restoration methods, and proposals for continuation of on-going projects that had been underway for several to many years but that reported no results of past work and so could not be evaluated for effectiveness and progress.

A recommendation of **Fund in Part** was assigned to a proposal that included work that was scientifically supported, but also some work that was not. In this case, the ISRP specified which objectives or tasks were not scientifically sound and recommended that these parts of the proposal not be funded. Examples are proposals that included objectives that were not scientifically supported, for instance a proposal for both background survey work and subsequent major implementation programs that could not be supported before results of the survey were known, and proposals that included use of unsound methods to meet a particular objective.

B. General findings and comparison with FY1999 projects

The ISRP used summary statistics to compare the results of this year’s review with last year’s and with CBFWA’s. The percentages of proposals that were rated as Adequate or Fundable versus Inadequate or Not Fundable was remarkably similar between the 2 years, with about 60% of proposals judged to be Adequate or Fundable by the ISRP in both years (Figure 1). Similarly, the ISRP recommendation agreed with that of CBFWA for a little over 60% of proposals for FY2000, which is roughly the same as in FY1999 (Figure 2).

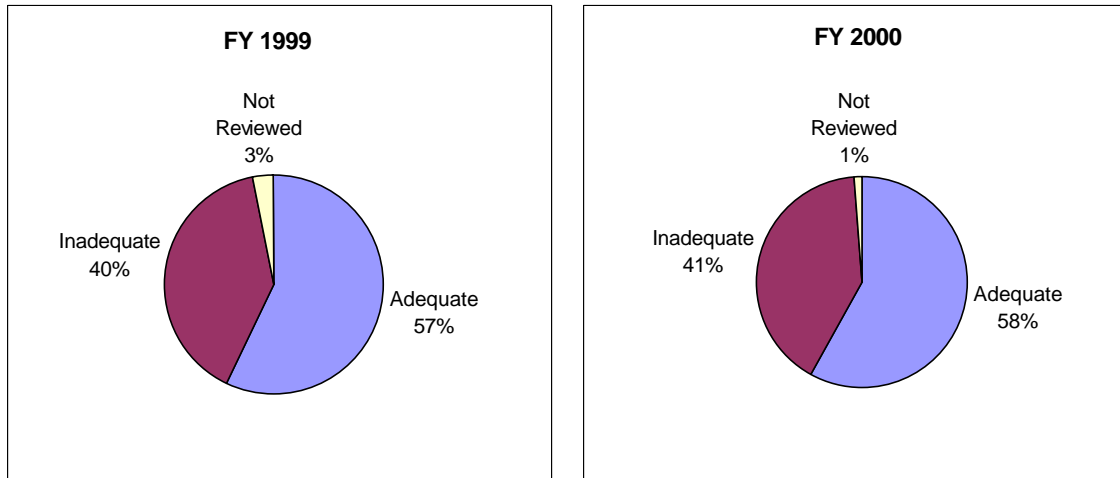


Figure 1. Percentage of the 403 proposals in FY1999 and 397 in FY2000 that the ISRP assigned to adequate or inadequate categories. For FY2000, the adequate category includes Fund, Fund for One Year, and Fund in Part; inadequate includes Delay Funding and Do Not Fund.

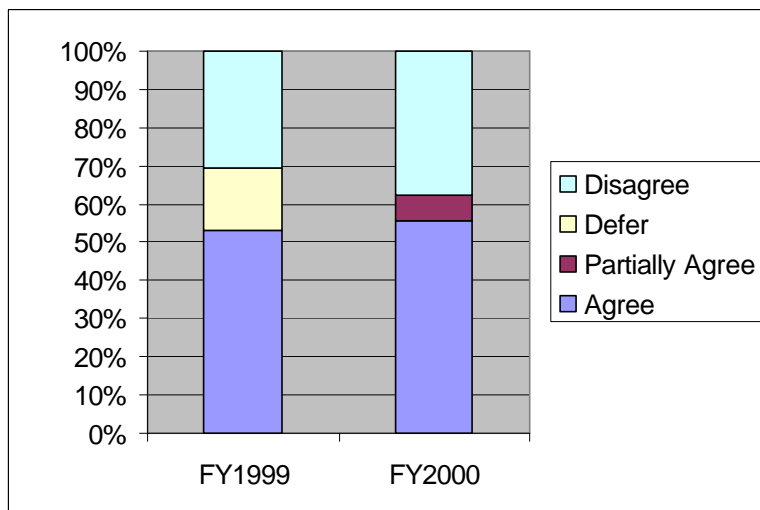


Figure 2. ISRP comparison with CBFWA’s prioritized list for the FY1999 and FY2000 proposal reviews.

The ISRP and CBFWA show some general agreement in the relative merits of projects that were assigned to Fund (Tier 1) versus Do Not Fund (Tier 3) categories by CBFWA. Most proposals in CBFWA's Tier 1 (68%) were recommended for funding; another 19% received a Delay Funding recommendation, meaning some critical element needed to be supplied or corrected, but the overall project would likely be sound when that need was met. More of CBFWA's Tier 1 proposals (than Tier 2 or 3) were found by the ISRP to be scientifically sound and of programmatic value (Figure 3).

ISRP Recommendations and CBFWA Tiers

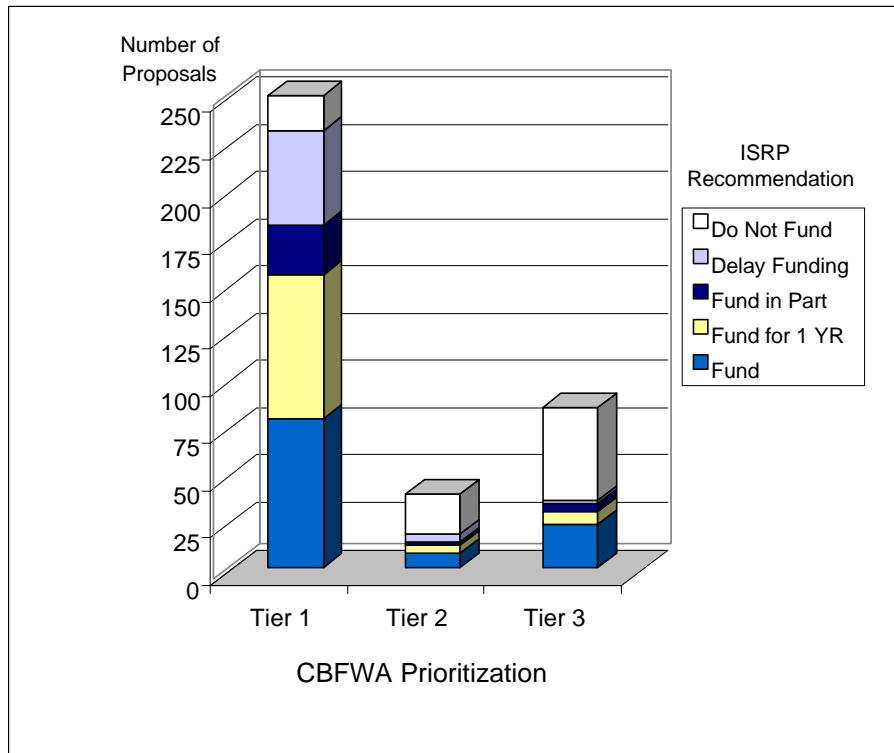


Figure 3. ISRP comparison with CBFWA's Tier rankings for the FY1999 and FY2000 proposal reviews.

The ISRP and CBFWA appear to differ in their ratings of new versus ongoing proposals (Figure 4). The ISRP recommended funding of about one and a quarter times as many of these new proposals, based on scientific soundness and programmatic value, than did CBFWA. Importantly, the new proposals that the ISRP recommended as fundable did not entirely match up with CBFWA's Tier 1 recommendations. Of the 66 new proposals that the ISRP recommended as fundable, CBFWA placed 36 (55%) of them in Tier 2 and 3 with no funding recommended. Of the 49 new proposals that CBFWA placed in Tier 1 or Tier 2 with funding recommended, the ISRP found 19 (39%) to not be fundable. Thus, the ISRP and CBFWA concurred in recommending 30 of the 155 (19%) new proposals for funding.

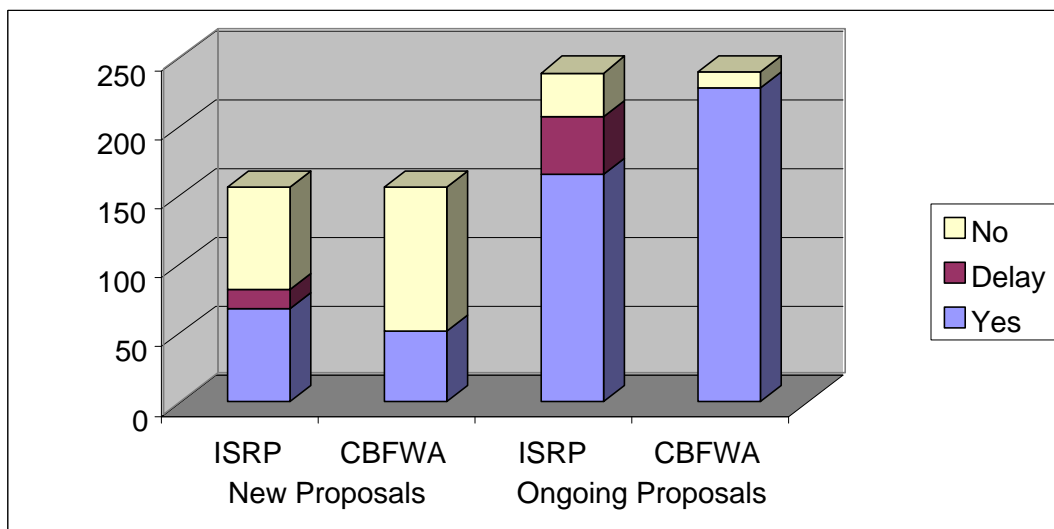


Figure 4. ISRP comparison with CBFWA’s Tier rankings for the FY1999 and FY2000 proposal reviews.

Similarly, the ISRP found a number of the ongoing proposals to be scientifically flawed or of questionable scientific value to the FWP and recommended No Funding for more than two and one half times as many of these than did CBFWA. The ISRP also had immediate scientific concerns about a group of ongoing proposals (18%) for which delay of funding was recommended until those concerns could be met. Thus, the ISRP recommended only 164 of the 241 ongoing proposals for funding, whereas CBFWA recommended 227 (94%), nearly all that were submitted.

These patterns are of particular interest given the concern for openness of the program to new approaches, and they also probably reflect a somewhat higher level of scrutiny in review of ongoing projects by independent peer reviewers. The graph suggests that new proposals that are scientifically sound and of programmatic value are less likely to be funded than their merits warrant, and that ongoing projects are less likely to be corrected or phased out than their merits may warrant.

Comparisons of CBFWA and ISRP funding recommendations are shown in Figure 5 for projects in seven major categories: artificial production, natural production, watershed/habitat, tributary passage, mainstem, coordination, and ocean/estuary. The majority of the funding, both requests and recommendations fall into artificial production and watershed/habitat projects. Funding requests in each of the two categories approached \$90 million. Of the artificial production total, CBFWA recommended funding projects totaling roughly \$66 million, slightly over half the \$127 million annually allocated by BPA to the FWP. The ISRP was more critical of artificial production projects and recommended funding of approximately \$36 million, with an additional \$15 million in delayed funding for projects with deficiencies that need to be corrected. For watershed and habitat projects, the ISRP recommended total funding of \$42 million support with another \$9 million delayed funding for projects with correctable deficiencies. In contrast, CBFWA recommended \$33 million support for watershed and habitat projects.

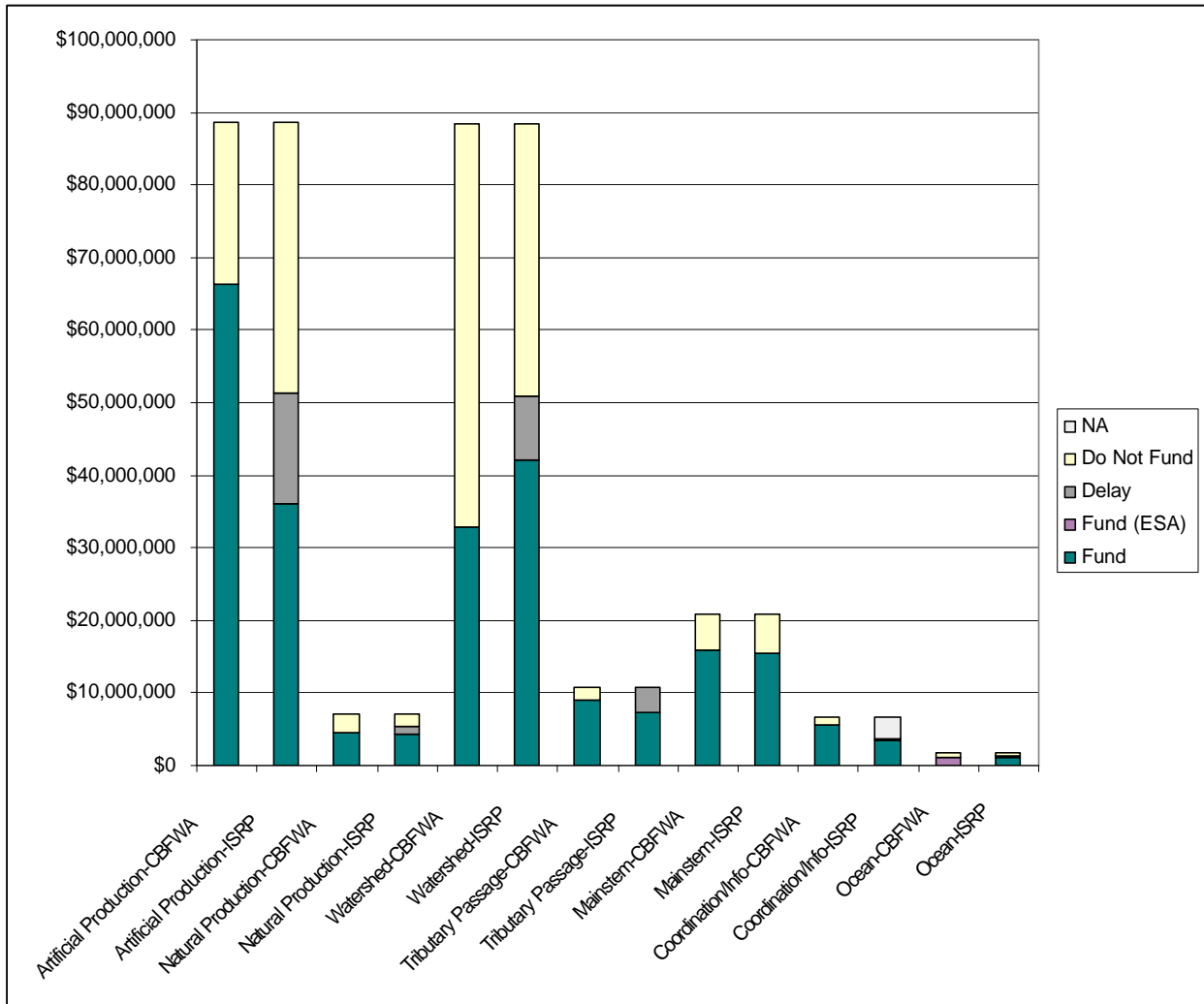


Figure 5. Comparison of CBFWA Funding Level Recommendations to ISRP Recommendations for Potentially Fundable Proposals for FY2000 for seven sets of topics. The total amount in each bar is the amount requested by the project sponsors. The ISRP “fund” category includes proposals that received fund, fund for one year, and fund in part recommendations. The ISRP does not recommend a specific funding level for individual proposals, but does identify those proposals or portions of proposals that meet the basic scientific criteria and thus are fundable.

C. Overall Assessment and Recommendations

1.0 Proposal Content: Overall Assessment

A well-written proposal contains a clear description, argumentation, and justification of the work proposed. Clear proposal content and its rigorous peer review are critical to conducting an innovative, efficient, effective, and competent Fish and Wildlife Program. Proposal writing is seen by some as “grantsmanship” that bears no necessary connection to the scientific integrity of the proposed research, a thesis the ISRP rejects; however, the failure to clearly elucidate a project’s goals, objectives, hypotheses, and methods is evidence that the project has not been clearly conceived or articulated. Furthermore, poorly formulated proposals are suggestive of poor implementation and supervision, placing in question the likelihood that the project will ultimately benefit fish and wildlife. Under the constraints placed on the Council by the 1996 amendment to the NW Power Act, such projects should not be funded.

Over the three-year period in which the ISRP has conducted annual reviews of project proposals, there has been a general increase in the coherency and information content of the proposals. The Peer Review Groups identified many well-conceived proposals. These include, for example, *Evaluate An Experimental Re-Introduction of Sockeye Salmon into Skaha Lake* (project # 20124, CCT), *Lake Creek Land Acquisition and Enhancement* (project # 9004401, CDA Tribe), *Genetic Analysis of Oncorhynchus nerka (Modified to Include Chinook Salmon)* (project # 9009300, U of I), *Trout Creek Habitat Restoration Project* (project # 9404200, ODFW), and *Toppenish-Simcoe Instream Flow Restoration and Assessment* (project # 9705300, YIN.)

Despite improvements, many proposals continue to be poorly constructed. Our criticisms of proposal content focus on inadequacies in clarity, substance, objectives and their associated tasks, the reporting of past accomplishments, and clear plans for monitoring and evaluation. All proposals should clearly show their relationship to the Fish and Wildlife Program.

A proposal for an on-going project should include a clear interpretive history of the project’s past accomplishments. These should be stated in terms of the ultimate biological objectives of the Fish and Wildlife Program, i.e., the benefit to fish and wildlife in the basin and the preservation or restoration of self-sustaining ecosystems that maintain fish and wildlife. Biological goals and evaluation criteria should be clearly given, and data and statistical analyses cited in support of results. A list of tasks accomplished does not meet the requirement for reporting of past accomplishments because it does not allow evaluation of how well a project is progressing toward the ultimate goal of benefit to fish and wildlife or to the ecosystems that sustain them. Many tasks that are believed to benefit fish or wildlife do not, in fact, do so everywhere, and so evaluation and reporting of outcomes remains necessary for each project.

A common, but critical shortcoming of many proposals is their failure to articulate objectives in the proper form. The need for well-defined and well-stated objectives (and tasks) is important as evidenced by the 1996 Power Act amendment language that calls for proposals to “*have a clearly defined objective and outcome with provisions for monitoring and evaluation of results.*” Project objectives should be stated in terms of desired outcomes, rather than as statements of methods and tasks. Methods should be described in a way that clearly addresses the proposal’s objectives. For example, a project objective might be: “To increase the spawning success of fall

chinook salmon in the Blank River,” not “improve spawning habitat for fall chinook salmon in the Blank River by road obliteration to reduce sediment deposition in the channel.” The idea of creating better spawning habitat might then be listed as a sub-objective, and the words about obliterating roads should be in the Methods Section. Steps in the actual road obliteration process would be listed as tasks or subtasks.

The ISRP recommends that the project proposal format and instructions be modified to help proposers better understand the distinction between objectives, tasks, and methods, and that the format include a checklist of items needed for a complete proposal and a signature line for the appropriate administrator after an internal technical review.

2.0 Proposal Content: Monitoring and Evaluation

How do we know if and when a project has accomplished its objectives? If the objectives have been given in functional, biological terms related to numbers or distribution of organisms or amount of habitat (as they should be), then the only way to know is to compare the actual outcomes of the project to the desired outcomes listed in the objectives. This straightforward process is monitoring and evaluation. It is part of a general cycle of assessing a need, designing a project to fill the need, carrying out the project, monitoring the results to see if the need is met or progress is made toward it, and then continuing (or not) based on the degree to which the need is met. For a problem-driven program like the FWP, the entire cycle is essential if overall programmatic progress toward resource protection and restoration is to be made. Additionally, sound monitoring and evaluation are the backbone of adaptive management.

Within the FWP there are several different approaches to monitoring and evaluation, many of which operate quite successfully. Some projects are strictly for monitoring, evaluation, or a combination (they provide one or two links in the full cycle; e.g., fish-ladder counts, smolt monitoring, and PIT-tag monitoring). Other projects include monitoring of results and evaluation of success in the individual project. Most projects rely on both their own efforts and overall monitoring at the basin or sub-basin level such as fish-ladder counts, smolt monitoring, or reservoir fish-population surveys.

The ISRP and PRG panels noted the lack of careful consideration of these essential monitoring and evaluation steps in many proposals. If basin-wide monitoring was to be used as a measure of success, this was often not stated and no evaluation of those data for purposes of the project was included. Proposals requiring their own monitoring and evaluation (e.g., habitat improvement projects) often did not include it. Some monitoring was planned for periods shorter than the generation times of the target species, which appeared inadequate to evaluate success or failure of the work. Some proposals did not include results of several years of work, sometimes for periods in excess of a decade of funding. This situation occurred in spite of explicit proposal-writing instructions and inclusion of monitoring and evaluation criteria for projects. Proposals especially deficient in monitoring and evaluation were not recommended for funding based on scientific inadequacy, as directed by the 1996 amendment to the Power Act. However, these deficiencies could be corrected with sufficient attention by project investigators and administrators.

The ISRP recommends that projects not be funded when the proposals fail to adequately include (1) monitoring of results to measure success, and (2) evaluation to rate the success or lack thereof against the stated objectives (both of which could be in the project itself or specifically identified in other projects that may be devoted to monitoring and evaluation).

3.0 Vision and Coordination: The Role and Content of Umbrella Proposals

Achievement of the Fish and Wildlife Program's goals (mitigation of fish and wildlife losses including restoration of salmon and steelhead abundance) requires a vision of the future and coordination of efforts in the present. Part of the problem of poor coordination between projects or between projects and Fish and Wildlife Program goals lies with the proposal review process. Proposals are reviewed individually. Each project has its own independent measure of performance, and that measure, typically has no explicit relationship to the specified subbasin objectives. The ISRP recommended in the FY1999 review that umbrella proposals be used to encourage coordination between projects and consistency at the program level. The umbrella proposal is intended to be an overview document that describes the pertinent historical and biological linkages between projects that address a large-scale problem, often within a single subbasin.

The umbrella proposals submitted in the FY2000 cycles were a good step forward. Some were well written and achieved the ISRP's intended objectives, for example 20513 – Hood River / Fifteenmile Creek Umbrella and 20517 – Libby Fisheries Mitigation. These proposals could serve as useful models for umbrella proposals in the FY 2001 cycle. Overall, however, the FY2000 umbrella proposals failed to achieve enhanced coordination and articulation of related proposals. One of the intended objectives of the umbrella proposal was to foster coordination among linked projects. Another was to present pertinent background information on a suite of linked projects that would subsequently not be repeated in each of the proposals. Most umbrella proposals fell far short of this mark. Improvements are needed in both the proposal development process and proposal content. Umbrella proposals offer the region an important opportunity to facilitate coordination among projects (the lack of which is a common criticism), as well as a forum to address how those projects are materially contributing to achieving the goals of the fish and wildlife program. Additionally, the inconsistent use of umbrella proposals for related projects (umbrella proposals were voluntary and optional in FY2000) made it difficult for the ISRP to evaluate how individual projects and groups of related projects were contributing to achievement of the Council's FWP goals.

Common problems with this year's umbrella proposals were incompleteness, vagueness, and failure to outline the overall principles or rationale for the various subproposals or how they logically fit together to address a common need. Many umbrellas were incomplete. In a number of cases, related projects were conspicuously absent. Some umbrella proposals simply listed and described the separate projects, which only repeats information that can be found in each of the component subproposals. Many umbrella proposals did not provide adequate detail about individual project responsibilities in relation to the overall effort, or how the activities of individual projects were linked. Many related individual proposals adopted approaches that could have been explained in an umbrella, for example the use of active versus passive stream

restoration, or native versus replacement stocks. The time sequencing among and within geographically related proposals was rarely explained. One would hope to see, for example, a 5-year plan for a group of proposals. At the same time, Council and CBFWA should take care to assure that further development of the umbrella proposal process does not discourage selection of innovative proposals regardless of their sponsor. Many reviewers noted that the use of maps showing project locations would have been very helpful for the review process.

The ISRP recommends that NPPC and CBFWA staff together identify all sets of linked projects in the basin that could benefit from an umbrella proposal. These would likely include projects grouped by subbasin (e.g., Grande Ronde, John Day, etc.), by topic (e.g., smolt monitoring, captive brood), or by a combination of topic and geography (e.g., all watershed and habitat restoration projects within a single subbasin).

The ISRP notes that most umbrella proposals did not request funding. However, in some instances, it may be appropriate for umbrella proposals to request funding to augment the coordination and analysis function of an umbrella proposal.

At present, umbrella proposals are written using the standardized proposal format and criteria developed for individual projects. Our experience this year suggests that better umbrella proposals would result from having format instructions specific to umbrella proposals. The ISRP should work with NPPC and CBFWA staff to develop an umbrella proposal format, guidelines, and instructions that are mutually beneficial.

The ISRP recommends that a specific umbrella proposal format be developed for use in FY2001 and beyond. Umbrella proposal content should provide the information needed to conduct peer review, facilitate regional coordination, and assess progress of the closely-linked projects toward fish and wildlife program goals.

4.0 Project Scale: Confusion of implementation and evaluation

New ideas and experimental methods are often best tested as pilot projects before stepping up to full-scale implementation. Testing of projects at a small-scale can help determine feasibility of the approach and identify real or potential problems, thereby facilitating the adaptive learning process prior to large-scale implementation. In addition, implementation of full-scale projects without a test phase limits the likelihood that projects will be implemented cost effectively. Pursuing untested large-scale projects risks potential harm to the resources that the program is intended to protect and enhance.

The ISRP was pleased to note this approach (testing at a small scale prior to large-scale implementation) in some project proposals, such as testing the efficacy of underwater video for monitoring adult chinook salmon returns (Proposal #9703000). However, the approach is disturbingly absent from many of the still-experimental large-scale (and expensive) artificial production programs in the basin (e.g., captive brood technology and supplementation). Many reviewers noted that experimental approaches to recovery were being implemented on a large scale rather than as a pilot projects. Full-scale and costly operational alternatives such as hatcheries should be tested with smaller-scale pilot operations to determine feasibility. Pilot-

scale field testing, needs to be preceded by a reasonably quantitative scoping on paper, to develop and justify that level of feasibility and to make clear what factors need to be measured and tested in the field.

The ISRP recommends that experimental methods be implemented or tested first as pilot-scale projects designed to ascertain and evaluate feasibility, cost-effectiveness, and potential harm.

5.0 Site Visits

Regular site reviews of related projects would contribute to enhanced program coordination and assist in evaluating progress toward meeting Program goals. The periodic BPA-sponsored project symposia also assist this function. The symposia are useful for information and coordination among peers in a passive sense (series of seminars to colleagues on the latest developments in each project), but they do not provide an in-depth review as could be conducted by an independent peer review panel. For the site visits and reviews, the ISRP and its predecessor advisory bodies envisioned a much more intensive review of past publications, interviews with staff, visits to pertinent field and lab facilities, and discussions with administrative staffs, as well as seminar-like presentation of results. However, the BPA-sponsored periodic open presentation format may usefully be continued for the Program as a whole.

Site reviews have been recommended by a sequence of advisory boards (SRG, ISG, ISAB) for nearly a decade. As presented in the SRG's Guidelines for Project Reviews (Scientific Review Group 1990; ISG guidelines to BPA 1994), related projects would be given a thorough on-site review every 3-5 years by a review panel. The information that could be obtained by such panels goes far beyond what is possible in the proposal review process, and would contribute to resolving the current problems of program fragmentation and lack of vision. The reviews would be especially valuable for projects related by geography or common purpose. Reviews could be staggered to facilitate multi-year funding of successfully reviewed projects. Topic areas that would likely benefit from these kinds of reviews include for example, watershed and habitat restoration, captive brood, smolt monitoring, data storage and retrieval, etc.

The ISRP recommends that a plan for regular site reviews of related projects be developed and implemented in FY2000.

6.0 Publication

Publication of research results in peer reviewed literature imposes an additional test of scientific quality, which, except in a few cases, has not been applied to the FWP. Additionally, publication of results in the open literature makes information available to a wide audience and facilitates adoption of effective, efficient, and innovative methods and implementation of adaptive management. Encouraging publication in peer reviewed journals promotes scientific quality and scientific progress.

Several research projects funded through the FWP have had good, even outstanding, publication records in peer reviewed scientific and fisheries journals. Examples of such programs among others are the mainstem predator reduction program aimed at the northern pike minnow (formerly the northern squawfish) and the smolt physiology program.

However, plans for peer-reviewed publication of project results are missing from most proposals. Although not peer reviewed, the DOE/BPA report series (now available only on the web) has the objective of publication of results, often as annual reports from each project. Its existence is a positive step, but for many projects and their results, not sufficient. The ISRP has discussed initiating a Columbia River Basin Journal or a Northwest Salmon Recovery Journal that could serve as a regional forum for publication of research and long-term monitoring and evaluation results of particular relevance to the region. While numerous fisheries and ecology journals exist, and many biologists and researchers in the basin publish in them, initiation of a regional-based peer review journal would consolidate regional scientific information on salmon recovery. In its first annual report to BPA (SRG 1990), the Scientific Review Group recommended that development of a regional peer review journal be considered. The ISRP encourages Council to consider mechanisms for initiation of such a forum.

The ISRP recommends that Council consider mechanisms for initiation of a Columbia River Basin Journal and consider soliciting proposals for innovative mechanisms for offering technical support to projects for development of publications.

7.0 Multi-year Project Review Cycles

The vast majority of projects that receive funding are ongoing projects with biological objectives that take years to achieve, yet funding is determined and administered on a yearly basis. For many long-term projects, it may be neither efficient nor cost-effective to require annual submission and review of proposals for continuation. Intermittent reviews may be more appropriate. Once the problems of low proposal quality have been resolved and a system for site visits has been implemented, the program could move toward a system of funding and reviewing projects on a multi-year basis.

Consequently, in this year's review the ISRP and Peer Review Groups identified those projects they considered scientifically and technically adequate for a multi-year review cycle. For FY2000, the ISRP identified 53 proposals adequate for a multi-year review cycle (Table 3). The ISRP does not plan to review these proposals next year unless a project is significantly modified.

In identifying proposals for a multi-year review cycle, the ISRP considered how thoroughly the proposal met the ISRP's criteria and CBFWA's multi-year funding/review qualifications. Many of the proposals the ISRP recommended for one-year funding were also considered for multi-year approval. However, the proposals, while adequate for one year's support, often fell short of the level of technical adequacy the ISRP expected in proposals approved for a multi-year review cycle. In most instances, the ISRP provided review comments that if adequately addressed in the FY2001 proposal, should allow a project to receive approval for a multi-year review cycle.

The ISRP recommends that the Fish and Wildlife program move toward multi-year approval of most projects, with proposal and site reviews, and effectiveness evaluations made at intervals of 3 to 5 years.

8.0 Adaptive Management

Many proposals assert that they are using or will use adaptive management. Adaptive management is highly desirable because it involves on-going incorporation of improvements in scientific understanding into project design and implementation. Additionally, adaptive management is a branch of applied science that is itself amenable to research designed to improve and evaluate the process.

However, most proposals failed to give specific information as to how they would accomplish adaptive management. Adaptive management itself is like any specific scientific or science-based project in having an underlying scientific background and rationale, as well as project-specific methods of implementation and of evaluation of outcomes. The rationale, methods, and evaluation procedures for planned adaptive management need to be outlined in adequate detail to be reviewed for adequacy and soundness. A proposal might make its adaptive management plan more clear by giving a specific example of past incorporation of adaptive management into the project or by outlining examples of how anticipated results might feed back to alter a project's protocols.

The ISRP recommends that projects claiming to use adaptive management approaches be required to support the approach with specific examples of its past or planned use.

9.0 Watershed Assessment, Coordination, and Project Evaluation

The ISRP noted a general lack of coordination of watershed projects within major subbasins of the Columbia and Snake Rivers. Watershed restoration projects must now be preceded by an approved watershed assessment, but habitat projects often were not shown to be organized or prioritized using the results of such an analysis. Additionally, watershed-level evaluation of project success is largely lacking.

Watershed assessment is a procedure intended to control the environmental impacts of multiple activities within whole watersheds (Montgomery et al. 1995). This is a significant challenge for a variety of scientific and social reasons, but the science of watershed assessment is intended to address two specific factors:

- 1) The physical and biological characteristics of a watershed (or sub-area within it) reflected in the local geology, terrain, climate, vegetation, history of past use and natural events, etc.
- 2) The individuality of watersheds as they differ in sensitivity to impacts from use. Watershed assessment allows development of a local framework and database with which to make land use decisions, land management decisions, conduct analyses of outcomes and modify practice in response to outcomes.

Watershed assessment offers the benefits of bringing all individuals and groups with legitimate concerns into the decision-making process, and it offers tailored, site-specific, and regionally coordinated management plans as an outcome.

A proposal to conduct or apply results of a watershed assessment must describe several key aspects of the assessment process. These include regional and basin goal-setting, risk assessment to define current problems and predict future problems, and an adaptive management process to modify tools, practices and goals on the basis of experience. These components imply three phases for a watershed assessment: 1) resource assessment (physical, biological, and social inventory); 2) prescription writing and management planning; 3) monitoring. All should be explicitly addressed. Additionally, methods for each, and the underlying scientific rationale, should be clearly specified. Finally, the group of stakeholders involved in the assessment and their roles in the process should be clearly stated. As a rule of thumb, a completed watershed assessment might be considered current and valid for about five years, after which revisiting or revision would be appropriate.

Standards of adequacy of watershed assessment will no doubt change through time, reflecting improvements in assessment methods in understanding of ecological processes, and changes in the available data base and data technology. The nature of the physical and biological data base, how it was constructed, and how it will be used in decision-making should be clearly stated. Watershed assessments can vary in detail, depending on the size and complexity of a watershed and on the nature and complexity of the problems to be addressed. Current assessment costs range between \$1-2 per acre (P. Bisson, personal communication). A first assessment is likely to use less data than a subsequent assessment of the same watershed. Changes in technology are likely to change the expectations of what can be accomplished, and data needs will depend on the needs and goals identified by stakeholders. Guidelines and procedures for watershed analysis have been published by the USDA Forest Service (1994) and the Washington Department of Natural Resources (1995) and watershed analyses have been evaluated on several scientific grounds by Collins and Pess (1997a,b). These sources should prove useful in developing adequate assessment protocols as well as in defining areas where research and development of approaches are needed. Collins and Pess (1997b; 1997a) note several shortcomings of many current watershed assessments, including a failure to include all land uses and effects within ecological boundaries, to adequately consider terrestrial wildlife, to take monitoring seriously, to incorporate restoration goals methods and outcomes, and to adequately recognize natural variability or the historic conditions in a watershed that might provide a baseline for understanding natural variability. Watershed assessments should consider these common shortcomings. These areas are ones in which innovative approaches are needed to improve the science and process of watershed assessment.

The ISRP recommends that the Council solicit innovative proposals in the area of watershed assessment, with particular goals being improved methods for watershed inventory and improved methods for evaluating outcomes of management practices at the watershed or basin level.

10.0 Wildlife Program and other Proposals for Acquisition and Management of Land

The FY1999 ISRP review noted that few wildlife proposals presented a clear rationale for acquisition of particular parcels of land. The ISRP noted the need for proposers to justify the value of parcels of land to particular wildlife species and to make clear the cost-effectiveness of parcels to be acquired. An umbrella proposal is a natural mechanism for giving explanation of the integration and planning that should underlie land acquisition decisions. Several wildlife umbrella proposals for FY2000 addressed this concern effectively (e.g., Oregon Wildlife Mitigation Umbrella) and presented this background and rationale, but there were still some wildlife proposals that gave no clear justification for land acquisition or land easements.

The ISRP recommends that no land acquisition be funded without a clear description of the land to be acquired and without demonstration of its priority for the fish and wildlife program.

The ISRP has been critical of the monitoring and evaluation of results in ongoing wildlife projects and the lack of clear and well-described plans for future monitoring and evaluation. Many proposals continue to lack clear descriptions of sampling design or of procedures and criteria for assessing outcomes of management plans, but several proposals had significantly improved monitoring and evaluation sections. As examples of the improvements in data collection and plans for the future, we include the following quotes from a selection of proposals. All of these focus on direct measurement of wildlife species or of specific habitat criteria that are of benefit to fish and wildlife. These may serve as useful models for future wildlife proposals.

Project: 9205900, Amazon Basin/Eugene Wetlands Phase Two

- ◆ *The Nature Conservancy contracted with BPA to perform wildlife habitat restoration, enhancement, O&M, and monitoring. This funding has been used to continue inventory of small mammals, reptiles, and amphibians, and to develop better hydrology and water quality monitoring programs.”*

Project: 9107800, Burlington Bottoms Wildlife Mitigation Project.

- ◆ *1995: Initiated survey and monitoring efforts for target and other wildlife species, including Federal and State listed species. Studies are on-going and will continue indefinitely with the assistance of volunteers.*

Project: 9201000, Habitat Restoration/Enhancement Fort Hall Reservation.

- ◆ *Monitoring and evaluation since project inception in 1992 has included collection of baseline and annual data on relevant biotic and abiotic variables, including; fish community composition, biomass and densities, invertebrate community composition and densities, channel morphology, riparian health, and water quality parameters.*

Project: 9902600, Sandy River Delta Riparian Reforestation.

- ◆ *Monitoring: 1. Annual photo documentation of reforestation to build long term visual record of reforestation results, 2. Annual measurement of planting success, and evaluation of any causes of planting failure. Corrective action taken as needed. 3. Annual population counts of neo-tropical migrants to determine affect on wildlife populations.*

11.0 Non-Native Plant Control

The ISRP and PRGs noted that many of the habitat and wildlife projects include substantial allocation of resources for control of non-native plant species. Additionally, monitoring to evaluate effectiveness of control methods, and experimental designs that would allow comparison of methods of control or of treated and untreated areas, were only rarely included in proposals. Reviewers were concerned with the long-term commitment of funds for control of non-native species, as well as with the lack of consideration or evaluation of unwanted effects of the use of herbicides, fire, and hard-engineering methods for non-native plant control (e.g., effects on soil fertility or on non-target plant species or on wildlife). The groups suggested that the Council invite research proposals to develop cost-effective passive methods for control of non-native species.

The ISRP recommends that the Council solicit innovative proposals for development, testing, and evaluation of cost-effective passive methods for control of non-native species

12.0 Hatcheries

The use and role of artificial production in the basin continues to be among the region's most controversial issues. Artificial production is also the most expensive area of the Fish and Wildlife Program. Not surprisingly, a large portion of the project proposals relates directly or indirectly to artificial production.

The ISRP's review of artificial production proposals is only one of several regional reviews of artificial production activities in the basin. Others include the recently completed, but unsummarized, IHOT (Integrated Hatchery Operations Team) hatchery audits, the Council's congressionally mandated review of artificial production and the Council's ongoing three-step process. The three-step process, developed by Council in response to recommendations by the ISRP in its first annual report (ISRP 97-1), provides much-needed technical oversight for proposed artificial production projects as they move through the planning, design, implementation and monitoring phases. The Congressionally mandated review of artificial production is underway and is in its early to middle phases. It is intended to provide Council and Congress with some assessment of the efficacy of artificial production in the basin and to lay a groundwork from which forward-reaching policies can be developed that will guide the use of artificial production in the basin into the next century. Recently completed reports from that effort include the Scientific Review Team's initial review of the scientific basis for Columbia River production programs (Scientific Review Team 1999) and Council's report to Congress.

The Council approved the use of supplementation as a management tool to protect threatened endemic genotypes and to increase run-strengths. In the subsequent rush to implement supplementation to increase run strength, there has been serious neglect of protecting endemic genotypes. This neglect is evident in project design, monitoring and evaluation components.

Additionally, there may often be inherent conflicts between supplementation and genetic preservation, due to movements and interactions of fish, competition, and other ecosystem effects. Supplementation projects across the basin differed in apparent degree of coordination (ranging from good to poor) with other supplementation projects. These differences and the continued important role and controversial nature of supplementation indicate to the ISRP that supplementation efforts in the basin would benefit from a coordinated overall review. Such a review does not appear to be currently underway through any of the review processes identified above; however, a programmatic review of supplementation and its projects would complement the Council's ongoing comprehensive review of artificial production.

The ISRP recommends that all supplementation projects in the basin undergo a coordinated programmatic level review by an independent scientific review panel. The panel should address uncertainties as well as differences among supplementation projects with respect to monitoring and evaluation protocols, project-specific as well as program goals, and the effectiveness of supplementation as a rebuilding tool.

Resident fish hatcheries as well as anadromous fish hatcheries should be included in the overall basin-wide review of hatchery effectiveness. Many of the same questions arise for resident fish propagation and supplementation of wild stocks. Funding recommendations in hatchery-related proposals for resident fish are premised on acceptance of the high value of artificial propagation. This premise needs evaluation from the perspective of the fish species or stock being propagated as well as from the perspective of the wild, native stocks (and ecosystem) with which the hatchery-produced fish will mingle.

The ISRP recommends that the ongoing basin-wide review of hatchery effectiveness be continued, and the results of such a review be used to form the basis for future hatchery funding decisions.

13.0 Captive Brood Technology

Captive brood technology and captive broodstock development are areas of increasing interest by fisheries managers throughout the region and by the Council in its fish and wildlife program. Many FY2000 proposals were for implementation of captive broodstock proposals, and several umbrella proposals indicated that many more captive broodstock efforts are planned. Given the increasing vulnerability of many basin stocks, particularly upper river stocks, to stochastic demographic extinction, captive brood technology offers a tool with some promise for maintaining populations and genetic diversity while other survival constraints are relaxed or removed.

However, the use of captive broodstock raises many specific concerns, including domestication, poor breeding success or survival, and increased disease sensitivity. As these concerns are often not well addressed in proposals, the value of captive brood technology may be overstated and its risks understated. The approach is in effect a placebo, as it does not address the factors that are causing fish stocks to be at very low densities. The proposals should develop a better rationale and plan for how captive broodstock programs fit into overall current recovery efforts, dam configurations, ecosystem health, and other factors. The reliance on captive broodstock can be regarded only as a short-term and temporary solution to the threat of extinction of these anadromous stocks.

Besides the many threats or uncertainties associated with captive broodstock programs, they are extremely costly and seem intractable as a tool for preserving all or even many Basin salmonid strains. Additionally, it would be hard to imagine a species with a more complicated life history, one more difficult to replicate in a culture environment, than anadromous Pacific salmon. To retain these animals in culture even short-term, much less indefinitely, is surely to alter selective pressures and lose both environmentally and genetically based traits of wild fish, no matter how much hatcheries attempt to mimic natural rearing conditions and environments. It is quite possible that small wild populations are more viable in the wild than are the captive brood they may be captured to produce. Some recent studies and reviews are recommending that captive broodstock be a last-resort strategy and be preceded by careful field studies, a determination that other preferable alternatives are not available, and clear demonstration that captive breeding is necessary for short-term survival.

Many proposals acknowledge that threats to adult survival, particularly habitat and passage, must be resolved for the broodstock programs to be effective in fish recovery. To fund captive broodstock hatcheries without concomitant emphasis of solving the root problems seems financially foolish and futile. Additionally, reviewers wondered whether it might not be a good idea to develop a genetic preserve now, using cryopreservation perhaps, for populations that are not yet critically low. Collection from such populations would not have the same potential for damage and could result in better preservation of genetic diversity for future uses.

<p>The ISRP recommends that the Council terminate funds for captive brood projects that do not provide convincing evidence that the problems causing depletion have been identified and that reasonable plans and effort are being applied to their resolution.</p>

Council has approved the use of captive broodstock technology as a management tool to protect threatened endemic genotypes and (coupled with supplementation) to increase run-strengths. Considering the burgeoning rush to propose and implement captive brood projects, the ISRP believes that a programmatic-level coordinated review of the captive brood program and all captive brood projects in the basin would be beneficial on a number of fronts. These include project design, monitoring, evaluation, and coordination among projects within the program.

The ISRP recommends that all captive brood projects in the basin undergo a coordinated programmatic level review by an independent scientific review panel. The panel should address uncertainties and differences among captive brood projects with respect to monitoring and evaluation protocols, project-specific as well as program goals, and the effectiveness of captive brood technology as a rebuilding tool.

14.0 Native Stocks

One of the basic principles embedded in the Council's fish and wildlife program is an emphasis and priority on rebuilding native stocks in native habitats, wherever possible. There are many biological and evolutionary reasons why this emphasis is warranted.

Over the three-year period of its existence, the ISRP has observed increasing interest in addressing native stock concerns. Evidence of this was seen in a number of proposals aimed at stock inventory and genetic assessments of indigenous fish, particularly resident fish. Some work in this area has been solicited through a targeted RFP process and is underway.

The ISRP and PRG's recommended that proposers be encouraged to use native stocks in recovery and mitigation programs wherever possible. There is a general trend in the basin toward emphasizing conservation of native stocks, but this was often not reflected in the actions by proposers. Supplementation with non-native stocks remains common. This is in sharp contrast to the habitat and wildlife programs, which tend to assume that non-native plants should be eradicated. Although an outright prohibition on the use of non-native stocks is probably unrealistic, further justification for their use could be required. This might stimulate more efforts to use native stocks. As an example, Projects 8815600 (Implement Fishery Stocking Program Consistent with Native Fish Conservation) and 20094 (Assess Resident Fish Stocks of The Owyhee Basin) should be integrated with one another. The first project, by its title, appears to focus on conservation of native interior rainbow trout (i.e., redband trout) stocks, yet proposes development of a new reservoir to be stocked with non-native hatchery-reared rainbow trout. Remnant native redband trout populations exist immediately adjacent to the proposed reservoir site and could be examined through Project 20094 for use in Project 8815600. It should be possible to use these native populations either as a stocking source or as a broodstock source for planting the new reservoir. Such actions would be consistent with the Council's mitigation responsibilities and with the FWP's priority emphasis on native species in native habitats. Additionally, it would avoid the well-recognized negative impacts that can arise from introductions of non-native fish as a mitigative substitute for native fisheries enhancement.

The ISRP recommends that resident fish mitigation actions focus on native resident fish stocks, rather than substituting non-native stocks, wherever practicable. Priority, as indicated by the FWP, should be given to projects that use or explore use of native stocks.

15.0 White Sturgeon and Pacific Lamprey

The ISRP noted in its FY1999 review, that overall coordination is needed for white sturgeon research and conservation throughout the Columbia River basin. The same is true for Pacific lamprey. Such coordination may be occurring, but it was not reflected in the white sturgeon proposals we reviewed. The two programs would benefit from greater coordination and integration. The ISRP recognizes that relatively few proposals are put forward for these species and that existing proposals come from widely separated geographic areas. Nevertheless, there is value in developing a species-level umbrella proposal for each of these species. This umbrella should describe similarities in ecology and management of these species basinwide.

The ISRP recommends that umbrella proposals be developed in FY2001 for all white sturgeon projects and all Pacific lamprey projects in the basin. Umbrella proposal content should provide the information needed to conduct peer review, facilitate regional coordination, and allow assessment of these closely-linked projects' progress toward fish and wildlife program goals.

16.0 Targeted RFPs: a method to reduce uncertainties

In its previous reports, the ISRP recommended the use of targeted Requests for Proposals (RFPs) as a method of addressing specific critical uncertainties or information gaps. In FY1999, the Council and BPA cooperated, with assistance from the ISRP, in developing and securing two targeted RFPs. These addressed specific critical uncertainties about chinook salmon and should further define the roles of mainstem habitat use and needs of chinook salmon as well as providing information on their population and genetic structure.

From the ISRP's perspective, the FY1999 process of scoping, soliciting, and securing the two RFPs went well and offers promise as a method to address recognized critical uncertainties in a focused manner. The FY1999 solicitation for targeted RFPs started with a scoping statement that requested statements of qualification (SOQs) from persons or institutions anticipating submitting proposals. Each of the two scoping statements brought in several (3-5) SOQs, the majority of which were viewed as well qualified to conduct the proposed work. Unfortunately, only a limited number of proposals were subsequently submitted in spite of the positive reviews of the SOQs. Several of the teams that appeared most qualified did not submit proposals judging the projects as funded over too short a duration (one-year) and for too little money to properly conduct the work.

Nevertheless, the ISRP believes the initial experience with the targeted RFP approach was promising and recommends use of the approach again to help resolve critical and controversial uncertainties.

The ISRP recommends expanded use of targeted requests for proposals to resolve uncertainties and information gaps in the current fish and wildlife program and the projects that constitute it. Funding duration and amount should be appropriate for the task solicited.

The ISRP, ISAB, and Council staff should consult together to identify fruitful areas for targeted RFPs for the FY2001 annual cycle.

17.0 Reporting on Past Accomplishments at the Program Level

The ISRP's FY 1999 report recommended that CBFWA increase its evaluation and reporting of the history of accomplishments resulting from implementation of the FWP. The recommendations included: (1) that CBFWA include a report of past accomplishments at the watershed and subregional/subbasin levels in its Annual Implementation Workplan (AIWP); and (2) that the Annual Implementation Workplan also include a report demonstrating its application of adaptive management at the watershed and subregional/subbasin levels and showing specific improvements in the program that have resulted from information obtained through the program in previous years.

The Draft Annual Implementation Workplan for FY 2000 has taken steps to address these recommendations, but falls short of giving clear watershed- or regional-level evaluations of accomplishments, and does not yet clearly analyze the effectiveness of past implementation of the FWP. The regional organization of the AIWP is helpful, as is the beginning of reporting on accomplishments. However, most of the reporting of past accomplishments involves simple lists of tasks accomplished by individual projects, rather than a description of progress toward the program's biological goals.

There is still a great need for more detailed evaluative and quantitative analysis of the ways in which implementation of the FWP has resulted in changes in fish and wildlife populations and in the ecosystems that might sustain them. This is not a simple task, as it involves integrated analysis of outcomes over large and ecologically complex geographical areas, but it is needed to evaluate the program and to allow incorporation and evaluation of adaptive management approaches.

The ISRP recommends that the Council urge CBFWA to include in its Annual Implementation Work Plan a report of past accomplishments at the watershed and subregional/subbasin levels or topical level (e.g., smolt monitoring, captive brood stock, etc.). The accomplishments should be reported in terms of FWP goals, rather than as listings of completed tasks.

D. Innovative Proposals

The ISRP's FY1999 Report recommended that a reserve fund be created to support innovative proposals. In the FY2000 solicitation for proposals, the Council and BPA responded and proposed that initiatives to undertake new research or innovative alternatives to existing work be funded from a new "innovative proposal fund." This fund will be a reserved amount to fund up to one year's scoping of new initiatives. For FY2000, the Council and BPA suggested that up to \$2 million be set aside for these initiatives.

Neither the proposal form nor the letter specified criteria for an "innovative" proposal. Further, most new proposals (Project ID 20001-201xx) did not identify themselves as "innovative." Thus, in the course of the ISRP and Peer Review Group process, we identified 16 projects that offer promising new concepts, address unexplored areas, and would likely benefit fish and wildlife, and categorized them as "innovative" (Table 2). We recommended 13 of the proposals for funding, in contrast to CBFWA, which recommended funding for only two of the sixteen proposals. The ISRP recommended funding for eleven proposals that CBFWA placed in Tier 3. The ISRP found many of these proposals to be extremely compelling, often addressing priority areas in the Program as pilot-scale projects (see individual proposal review comments in Volume II).

Table 2. Innovative Proposals

ProjectID	Title	Sponsor	ISRP Evaluation	CBFWA Tier	ISRP Comparison with CBFWA	FY2000 CBFWA Rec.	FY2000 Sponsor Request
20124	Evaluate An Experimental Re-Introduction Of Sockeye Salmon Into Skaha Lake	Colville Confederated Tribes	Fund	1	Agree-fund	\$171,171	\$219,450
20141	Recondition Wild Steelhead Kelts	Columbia River Inter-Tribal Fish Commission	Fund for 1 YR	1	Agree-fund	\$72,752	\$80,252
20013	Restore Unobstructed Fish Passage To Duncan Creek	Skamania Landing Owners Association (SLOA)	Fund	3	Disagree-fund; strongly recommend		\$190,000
20045	Analyzing Genetic And Behavioral Changes During Salmonid Domestication	Washington State University	Fund	3	Disagree-fund; strongly recommend		\$209,720
20056	Elucidate Traffic Patterns Of Iln Virus In The Columbia River Basin	USGS-BRD, Western Fisheries Research Center	Fund	3	Disagree-fund; strongly recommend		\$75,207
20057	Strategies For Riparian Recovery: Plant Succession & Salmon	Oregon State University	Fund	3	Disagree-fund; strongly recommend		\$429,463
20103	Indexing Salmon Carrying Capacity to Habitat, Population, & Physical Fitness	Oregon State University	Fund	3	Disagree-fund; strongly recommend		\$363,392

20107	Reconnect The Westport Slough To The Clatskanie River	Lower Columbia River Watershed Council	Fund	3	Disagree-fund; strongly recommend		\$29,850
20054	Evaluate Effects Of Hydraulic Turbulence On The Survival Of Migratory Fish	Oak Ridge National Laboratory	Fund in Part	3	Disagree-fund in part		\$341,000
20122	Test guidance flows and strobe lights at a SBC to increase smolt FCE & FGE	Washington Department of Fish and Wildlife	Fund in Part	3	Disagree-fund in part		\$295,300
20014	Evaluate Songbird Use Of Riparian Areas During Fall Migration	University of Idaho	Fund	3	Disagree-fund		\$32,760
20041	Develop A Fish & Wildlife Conservation Law Enforcement Plan, D.V.I.R.	Shoshone-Paiute Tribes of the DVIR	Fund for 1 YR	3	Disagree-fund		\$40,872
20093	Evaluate The Feasibility For Anadromous Fish Reintroduction In The Owyhee	Shoshone-Paiute Tribes of the DVIR	Fund for 1 YR	3	Disagree-fund		\$56,851
20068	Numerical Study Of Flow-Field Structure On Salmonid Migration	University of Michigan	DNF	3	Agree-DNF		\$94,640
20069	Innovation Proposal Fund: Construct fuzzy logic decision support system ...	E&S Environmental Chemistry, Inc.	DNF	3	Agree-DNF		\$100,000
20110	Develop Wheels, Pools and Falls Approach for Fish Passage at Dams.	Sun Mountain Reflections	DNF	3	Agree-DNF		\$198,570

E. Multi-Year Peer Review Cycle

The vast majority of projects that receive funding are ongoing projects with biological objectives that take years to achieve, yet funding is determined and administered on a yearly basis. The first three years of the ISRP's review paralleled this annual budget cycle. In our first two reports we recommended that the Council adopt a multi-year funding process for selected projects. Currently the Council, BPA, the Columbia Basin Fish and Wildlife Authority, and project sponsors are working on a multi-year funding process so that funding and peer review schedules better reflect the realities of project implementation and the life cycles of the biota. This regional effort to establish a multi-year funding program involves policy questions beyond the ISRP's scope.

However, it is within the ISRP's scope to identify projects that do not need to be peer reviewed on an annual basis, but can be placed on a 2-5 year peer review cycle. Consequently, in this year's review the ISRP and Peer Review Group identified those projects they considered adequate for a multi-year review cycle. For FY2000 the ISRP identified 53 proposals adequate for a multi-year review cycle (Table 3). The ISRP does not plan to review these proposals next year unless the project is significantly modified. This multi-year review cycle will enable the

ISRP to stagger review of projects over several years, which will make future reviews more efficient and effective. The Peer Review Group and ISRP will have more time and resources to better focus on specific sets of innovative proposals or scientifically controversial areas of the program.

This recommendation to enter a multi-year review cycle does not preclude project sponsors from filling out the proposal form or a modified version form on an annual basis to meet the needs of BPA, CBFWA, and the Council. In fact, if a project’s methods, budget, or objectives are significantly modified it should be immediately subject to peer review. The ISRP intends to work with the Council, BPA, and CBFWA to implement this multi-year review process for FY2001.

In identifying proposals for a multi-year review cycle, the ISRP considered how thoroughly the proposal met the ISRP’s criteria and CBFWA’s multi-year funding/review qualifications, which included:

- The proposal describes a complete and comprehensive milestone-based work plan that includes clearly stated goals, objectives, tasks, milestones and objectives that ensure a likelihood of success.
- The project is critical to achieving objectives described in one or more of the regional plans (Columbia Basin Fish and Wildlife Program, BiOp, Tribal Plan, etc.)
- There would be little or no biological or management benefit from implementing the project for less than the proposed duration.

The 49 proposals identified for multi-year approval include new and ongoing projects that addressed the full spectrum of project types from mainstem and hatchery research to habitat restoration to wildlife acquisition. Project sponsors also cover the gamut from tribes to universities to state agencies to watershed councils. In addition, the set of Yakima fish screen proposals were adequate for multi-year approval.

Table 3. Proposals qualified for a multi-year review cycle.

ProjectID	Title	Sponsor	CBFWA Tier	ISRP Comparison with CBFWA Tier	Review for Fiscal Year
20128	Riparian Restoration And Enhancement Planning For Multnomah Channel	Metropolitan Service District of Oregon	1	Agree-fund	2003
8709900	Dworshak Dam Impacts Assessment and Fisheries Investigation	Idaho Department of Fish and Game	1	Agree-fund	2003
8712703	Imnaha River Smolt Monitoring Program Project	Nez Perce Tribe	1	Agree-fund	2003

8909600	Monitor and evaluate genetic characteristics of supplemented salmon and steelhead	National Marine Fisheries Service, Conservation Biology Division	1	Agree-fund	2003
9004401	Lake Creek Land Acquisition And Enhancement	Coeur d'Alene Tribe	1	Agree-fund	2003
9009300	Genetic Analysis Of Oncorhynchus Nerka (Modified To Include Chinook Salmon)	University of Idaho	1	Agree-fund	2002
9102800	Monitoring Smolt Migrations of Wild Snake River Sp/Sum Chinook	National Marine Fisheries Service	1	Agree-fund	2003
9105500	N A T U R E S (Formerly Supplemental Fish Quality (Yakima))	National Marine Fisheries Service	1	Agree-fund	2003
9107200	Redfish Lake Sockeye Salmon Captive Broodstock Program	Idaho Department of Fish and Game	1	Agree-fund	2003
9107800	Burlington Bottoms Wildlife Mitigation Project	Oregon Department of Fish and Wildlife	1	Agree-fund	2005
9201000	Habitat Restoration/Enhancement Fort Hall Reservation	Shoshone-Bannock Tribes	1	Agree-fund	2003
9202604	Life History Of Spring Chinook Salmon And Summer Steelhead	Oregon Department of Fish and Wildlife	1	Agree-fund	2003
9204000	Redfish Lake Sockeye Salmon Captive Broodstock Rearing And Research	National Marine Fisheries Service	1	Agree-fund	2003
9206800	Implement Willamette Basin Mitigation Program	Oregon Department of Fish and Wildlife	1	Agree-fund	2002
9302900	Survival Estimates for the Passage of Juvenile Salmonids Through Dams and Reservoirs	National Marine Fisheries Service	1	Agree-fund	2003
9404200	Trout Creek Habitat Restoration Project Multi Year Funding Proposal	Oregon Department of Fish and Wildlife	1	Agree-fund	2003
9404700	Lake Pend Oreille Fishery Recovery Project	Idaho Department of Fish and Game	1	Agree-fund	2002
9405300	Bull Trout Assessment - Willamette/McKenzie	Oregon Department of Fish and Wildlife	1	Agree-fund	2002
9607000	McKenzie River Focus Watershed Coordination	McKenzie Watershed Council	1	Agree-fund	2003
9700400	Resident Fish Stock Status Above Chief Joseph And Grand Coulee Dams	Kalispel Tribe of Indians	1	Agree-fund	2002

9703400	Monitor Fine Sediment And Sedimentation In John Day And Grande Ronde Rivers	Columbia River Inter-Tribal Fish Commission	1	Agree-fund	2002
9705300	Toppenish-Simcoe Instream Flow Restoration And Assessment	Yakama Indian Nation	1	Agree-fund	2002
9800200	Snake River Native Salmonid Assessment	Idaho Department of Fish & Game	1	Agree-fund	2003
9803100	Implement Wy-Kan-Ush-Mi Wa-Kish-Wit Watershed Assessment & Restoration Plan	Columbia River Intertribal Fish Commission	1	Agree-fund	2002
9901000	Mitigate Effects Of Runoff & Erosion On Salmonid Habitat In Pine Hollow	Pine Hollow Watershed Council	1	Agree-fund	2003
9902000	Analyze the Persistence and Spatial Dynamics of Snake River Chinook Salmon	U.S. Forest Service, Rocky Mountain Research Station	1	Agree-fund	2002
8506200	Passage Improvement Evaluation	Pacific Northwest National Laboratory	1	Agree-fund	2004
9105700	Yakima Phase 2 (Fish) Screen Fabrication	Washington Department of Fish and Wildlife, Yakima Screen Shop	1	Agree-fund	2004
9107500	Yakima Phase II Screens - Construction	U.S. Bureau of Reclamation	1	Agree-fund	2004
9200900	Yakima (Fish) Screens - Phase 2 - O&M	Washington Department of Fish and Wildlife, Yakima Screen Shop	1	Agree-fund	2004
9503300	O&M Of Yakima Phase II Fish Facilities	U.S. Bureau of Reclamation	1	Agree-fund	2004
9902600	Sandy River Delta Riparian Reforestation	USDA Forest Service, Columbia River Gorge National Scenic Area	1	Agree-fund	2005
20102	Research/Evaluate Restoration Of NE Ore Streams And Develop Mgmt Guidelines	Oregon State University and University of Oregon	2	Disagree-fund; strongly recommend	2003
20045	Analyzing Genetic And Behavioral Changes During Salmonid Domestication	Washington State University	3	Disagree-fund; strongly recommend	2002

20057	Strategies For Riparian Recovery: Plant Succession & Salmon	Oregon State University	3	Disagree-fund; strongly recommend	2002
20083	Evaluate, restore and enhance 14 miles of instream and riparian habitat on	U.S. Fish and Wildlife Service	3	Disagree-fund; strongly recommend	2002
20109	Cedar Creek Natural Production and Watershed Monitoring Project	Washington Department of Fish and Wildlife	3	Disagree-fund; strongly recommend	2002

This subset of proposals approved for multi-year are scheduled to be complete before the fiscal year noted and unless co modified do not need to be re-reviewed for their duration.

20065	Identification of larval Pacific lampreys (Lampetra tridentata), river lamp	U.S. Geological Survey, Biological Resources Division	1	Agree-fund	2002
20124	Evaluate An Experimental Re-Introduction Of Sockeye Salmon Into Skaha Lake	Colville Confederated Tribes	1	Agree-fund	2002
9401500	Idaho Fish Screen Improvement - O&M	Idaho Department of Fish and Game	1	Agree-fund	2005
9405400	Bull Trout Genetics, Habitat Needs, L.H., Etc. In Central And N.E. Oregon	Oregon Department of Fish and Wildlife	1	Agree-fund	2002
9701900	Evaluate The Life History Of Native Salmonids In The Malheur Basin	Burns Paiute Tribe	1	Agree-fund	2003
9701901	North Fork Malheur River Bull Trout And Redband Life History Study	Burns Paiute Tribe	1	Agree-fund	2002
9902200	Assessing Genetic Variation Among Columbia Basin White Sturgeon Populations	University of Idaho	1	Agree-fund	2002
20106	Heritability of Disease Resistance and Immune Function in Chinook Salmon	U.S. Fish and Wildlife Service	2	Disagree-fund; strongly recommend	2002
20007	Acquire And Conserve Priority Bull Trout Habitat In Trestle Creek Watershed	River Network	2	Disagree-fund; strongly recommend	2002
20103	Indexing Salmon Carrying Capacity to Habitat, Population, & Physical Fitness	Oregon State University	3	Disagree-fund; strongly recommend	2003
20062	Adaptive Management Of White Sturgeons	U.S. Geological Survey, Biological Resources Division	3	Disagree-fund; strongly recommend	2002
20156	Identification Of Redband And Rainbow Trout In The N F Clearwater Basin	Nez Perce Tribe	3	Disagree-but not high priority	2002

F. ISRP Disagreements with CBFWA Recommendations

1. ISRP Recommendations to Fund, CBFWA Rank of Tier 2 or 3

In our FY1999 report, we recommended that 9 projects included in Tier 2 or 3 of CBFWA Draft Annual Implementation Workplan be moved to Tier 1. The Council did not recommend any of these proposals for funding in FY1999, in part because the ISRP's report did not provide adequate justification to move the proposals to Tier 1 in what was already a tight budget. Two of these projects were re-submitted and are ranked Tier 1 for FY2000 funding, *Rock Creek Watershed Assessment and Restoration Project* (project # 20119) and *Remove 23 migrational barriers and restore instream and riparian habitat on Chumstick Creek* (project # 20001).

In this FY2000 review, the ISRP identified 37 projects that it recommends for funding, but CBFWA ranks as Tier 2 or 3 with no funding recommended (Table 4). Specific reasons for the ISRP's recommendation to fund individual projects are provided in Volume II.

Table 4. ISRP Recommendations to Fund, CBFWA Rank of Tier 2 or 3

ProjectID	Title	Sponsor	ISRP Recommend	CBFWA Tier	ISRP Comparison to CBFWA Tier	FY00 Sponsor Request
20102	Research/Evaluate Restoration Of Ne Ore Streams And Develop Mgmt Guidelines	Oregon State University and University of Oregon	Fund	2	Disagree-fund; strongly recommend	\$309,936
20106	Heritability of Disease Resistance and Immune Function in Chinook Salmon	U.S. Fish and Wildlife Service	Fund	2	Disagree-fund; strongly recommend	\$398,596
20013	Restore Unobstructed Fish Passage To Duncan Creek	Skamania Landing Owners Association	Fund	3	Disagree-fund; strongly recommend	\$190,000
20034	Impact Of Flow Regulation On Riparian Cottonwood Ecosystems	BioQuest International Consulting Ltd.	Fund	3	Disagree-fund; strongly recommend (see comments)	\$148,034
20042	Integrating Okanogan And Methow Watershed Data For Salmonid Restoration	Okanogan Conservation District	Fund	3	Disagree-fund; strongly recommend	\$269,285
20045	Analyzing Genetic And Behavioral Changes During Salmonid Domestication	Washington State University	Fund	3	Disagree-fund; strongly recommend	\$209,720
20056	Elucidate Traffic Patterns Of Iln Virus In The Columbia River Basin	USGS-BRD, Western Fisheries Research Center	Fund	3	Disagree-fund; strongly recommend	\$75,207
20057	Strategies For Riparian Recovery: Plant Succession & Salmon	Oregon State University	Fund	3	Disagree-fund; strongly recommend	\$429,463
20062	Adaptive Management Of White Sturgeons	U.S. Geological Survey, BRD	Fund	3	Disagree-fund; strongly recommend	\$184,674
20083	Evaluate, restore and enhance 14 miles of instream and riparian habitat on	U.S. Fish and Wildlife Service	Fund	3	Disagree-fund; strongly recommend	\$102,706
20103	Indexing Salmon Carrying Capacity to Habitat, Population, & Physical Fitness	Oregon State University	Fund	3	Disagree-fund; strongly recommend	\$363,392
20107	Reconnect The Westport Slough To The Clatskanie River	Lower Columbia River Watershed	Fund	3	Disagree-fund; strongly	\$29,850

		Council			recommend	
20109	Cedar Creek Natural Production and Watershed Monitoring Project	Washington Department of Fish and Wildlife	Fund	3	Disagree-fund; strongly recommend	\$225,899
9105100	Monitoring And Evaluation Statistical Support	University of Washington	Fund for 1 YR	3	Disagree-fund; strongly recommend	\$340,357
20064	Upstream migration of Pacific lampreys in the John Day R: behavior, timing	U.S. Geological Survey, BRD	Fund	2	Disagree-fund	\$298,700
20006	Yakima Basin Benthic Index Of Biotic Integrity (B-lbi)	Washington Trout	Fund	3	Disagree-fund	\$48,072
20014	Evaluate Songbird Use Of Riparian Areas During Fall Migration	University of Idaho	Fund	3	Disagree-fund	\$32,760
20076	Diet, Distribution & Life History of Neomysis Mercedis in John Day Pool	Unviersity of Montana	Fund	3	Disagree-fund	\$176,158
20113	Securing Wildlife Mitigation Sites - Oregon, South Fork Crooked River	Oregon Department of Fish and Wildlife	Fund	3	Disagree-fund	\$13,877
9601900	Second Tier Database Support For Ecosystem Focus	Bonneville Power Administration	Fund for 1 YR	3	Disagree-fund	\$180,000
9803500	Watershed Scale Response Of Stream Habitat To Abandoned Mine Waste	University of Washington	Fund	3	Disagree-fund	\$53,820
20040	Develop A Fish & Wildlife Management Plan For The Owyhee Basin, D.V.I.R.	Shoshone-Paiute Tribes of the DVIR	Fund for 1 YR	3	Disagree-fund	\$22,411
20041	Develop A Fish & Wildlife Conservation Law Enforcement Plan, D.V.I.R.	Shoshone-Paiute Tribes of the DVIR	Fund for 1 YR	3	Disagree-fund	\$40,872
20092	Inventory Wildlife Species & Populations Of The Owyhee Basin, D.V.I.R	Shoshone-Paiute Tribes of the DVIR	Fund for 1 YR	3	Disagree-fund	\$185,985
20093	Evaluate The Feasibility For Anadromous Fish Reintroduction In The Owyhee	Shoshone-Paiute Tribes of the DVIR	Fund for 1 YR	3	Disagree-fund	\$56,851
20052	Strategies To Limit Disease Effects On Estuarine Survival	Oregon State University, National Marine Fisheries Service	Fund in Part	2	Disagree-fund in part	\$334,178
20054	Evaluate Effects Of Hydraulic Turbulence On The Survival Of Migratory Fish	Oak Ridge National Laboratory	Fund in Part	3	Disagree-fund in part	\$341,000
20063	Evaluate Effects Of Catch And Release Angling On White Sturgeon	U.S. Geological Survey, Idaho Department of Fish and Game	Fund in Part	3	Disagree-fund in part	\$271,486
20122	Test guidance flows and strobe lights at a SBC to increase smolt FCE & FGE	Washington Department of Fish and Wildlife	Fund in Part	3	Disagree-fund in part	\$295,300
20012	Develop New Technology For Telemetry And Remote Sensing Of Fish Quality	Oregon Cooperative Fish and Wildlife Research Unit	Fund	3	Disagree-fund, but not high priority	\$323,690
20033	Rehabilitate instream and riparian habitat on the Similkameen and Okanogan	U.S. Fish and Wildlife Service	Fund	3	Disagree-fund, but not high priority	\$484,902
20067	Effects Of Supersaturated Water On Reproductive Success Of Adult Salmonids	U.S. Geological Survey	Fund	3	Disagree-fund, but not high priority	\$839,893
20071	Restore Crab Lake And Adjacent Reaches Of Crab Creek.	Ducks Unlimited, Inc.	Fund for 1 YR	3	Disagree-fund, but not high priority	\$365,000

20156	Identification Of Redband And Rainbow Trout In The N F Clearwater Basin	Nez Perce Tribe	Fund	3	Disagree-fund, but not high priority	\$110,925
9700300	Box Canyon Watershed Project	Kalispel Tribe of Indians	Fund for 1 YR	3	Disagree-fund, but not high priority	\$70,256
20029	Electronic Columbia Basin Fish & Wildlife Research Report	Intermountain Communications	Fund	3	Disagree-fund, but not high priority	\$56,600
20027	Electronic Columbia Basin Watershed Newsletter	Intermountain Communications	Delay Funding	3	Disagree-if deficiencies corrected	\$56,600

2. ISRP Recommendations of Delay Funding, CBFWA Rank of Tier 1 or 2

In our FY2000 review, the ISRP recommends delayed funding for 54 project proposals (Table 5). A recommendation of **Delay Funding** (until some critical information or clarification is provided, as specified in the proposal review) was assigned to proposals that have some serious deficiency that, without correction, precluded scientific support for the work. Examples include proposals for acquisition of land that lacked a clear description of the land to be purchased or of the basis for assigning its priority for purchase, proposals for habitat restoration that did not justify methods of restoration or that did not supply evidence that the area to be treated was well-chosen as a priority for work, and proposals for hatchery planning and construction that did not give critical background justification for proposed work. Proposals assigned a Delay Funding recommendation were viewed as not scientifically sound without immediate revision or clarification of some element of the proposed work. The ISRP provides a review and recommendation for each project proposal in Volume II of this report that identifies the specific deficiency for each proposal in Table 5 and suggestions for how it might be resolved. After the deficiency is addressed by the proposer, additional review by the ISRP or a designated review group will be required before funding can be recommended.

Table 5. ISRP Recommendations of Delay Funding, CBFWA Rank of Tier 1 or 2

ProjectID	Title	Sponsor	FY00 CBFWA Rec
ISRP Delay Funding Category 1 - Additional technical information needed (possible ISRP review)			
20097	Phalon Lake Wild Rainbow Trap Improvements and O&M	Washington Department of Fish and Wildlife	\$25,000
20131	Enhance North Fork John Day River Subbasin Anadromous Fish Habitat	Confederated Tribes of the Umatilla Indian Reservation	\$205,544
8740100	Assessment Of Smolt Condition: Biological And Environmental Interactions	U.S. Geological Survey	\$199,046
8740700	Dworshak Impacts/M&E And Biological/Integrated Rule Curves	Nez Perce Tribe	\$199,485
9106100	Swanson Lakes Wildlife Area	Washington Department of Fish and Wildlife	\$247,500

9107100	Snake River Sockeye Salmon Habitat And Limnological Research	Shoshone-Bannock Tribes	\$427,000
9502800	Restore Moses Lake Recreational Fishery	Washington Department of Fish and Wildlife	\$234,890
9600700	Irrigation Diversion Consolidations & Water Conservation; Upper Salmon R	Lemhi County Soil & Water Conservation District	\$293,113
9605300	Upper Clear Creek Dredge Tailings Restoration	USDA Forest Service; Confederated Tribes of the Umatilla Indian Reservation	\$85,000
9702600	Ecology Of Marine Predatory Fishes: Influence On Salmonid Ocean Survival	National Marine Fisheries Service	(Tier 1)
9705100	Yakima Basin Side Channels	Yakama Indian Nation	\$601,673
9800300	O&M Funding Of Wildlife Habitat On Stoi Reservation For Grand Coulee Dam	Spokane Tribe of Indians	\$97,187
9800703	Facility O&M And Program M&E For Grande Ronde Spring Chinook Salmon	Confederated Tribes of the Umatilla Indian Reservation	\$489,000
9801600	Monitor Natural Escapement & Productivity Of John Day Basin Spring Chinook	Oregon Department of Fish and Wildlife	\$159,800
9801700	Eliminate Gravel Push-Up Dams On Lower North Fork John Day	North Fork John Day Watershed Council	\$90,250
9801800	John Day Watershed Restoration	Confederated Tribes of the Warm Springs Reservation of Oregon	\$424,575
9901200	Coordinate/Facilitate Watershed Project Planning/Implementation	Kittitas-Yakima Resource Conservation and Development District	\$70,496
20024	Evaluate Fall Chinook Natural Production and Spawning Habitat Conditions in	Washington Department of Fish and Wildlife	(Tier 2)
9303800	North Fork John Day Area Riparian Fencing	USDA Forest Service	(Tier 2)
20027	Electronic Columbia Basin Watershed Newsletter	Intermountain Communications	(Tier 3)
ISRP Delay Funding Category 2 - Establish and justify priority of project (BPA, possibly COTR review)			
20074	Eagle Lakes Ranch Acquisition And Restoration	U.S. Fish and Wildlife Service	\$287,134
20082	Rainwater Wildlife Area Operations & Maintenance	Confederated Tribes of the Umatilla Indian Reservation	\$274,966
20137	Acquisition Of Malheur Wildlife Mitigation Site.	Burns Paiute Tribe	(Tier 1)
9306600	Oregon Fish Screening Project - Fy'00 Proposal	Oregon Department of Fish and Wildlife	\$641,621
9604300	Johnson Creek Artificial Propagation Enhancement Project	Nez Perce Tribe	\$2,800,000
9802200	Pine Creek Ranch Acquisition	The Confederated Tribes of the Warm Springs Reservation of Oregon	\$94,600
9803300	Restore Upper Toppenish Creek Watershed	Yakama Indian Nation	\$194,583

ISRP Category 3 - Programmatic Review needed (Independent Site Visiting Committee)

8903500	Umatilla Hatchery Operation and Maintenance	Oregon Department of Fish and Wildlife	\$850,000
8343500	Operate And Maintain Umatilla Hatchery Satellite Facilities	Confederated Tribes of the Umatilla Indian Reservation	\$775,000
8802200	Umatilla River Fish Passage Operations	Confederated Tribes of the Umatilla Indian Reservation	\$360,000
8343600	Umatilla Passage Facilities O & M	Westland Irrigation District	\$502,000
8902700	Power Repay Umatilla Basin Project	Bonneville Power Administration	\$550,000
20139	Walla Walla River Fish Passage Operations	Confederated Tribes of the Umatilla Indian Reservation	\$73,000
9901100	Assess Fish Habitat & Salmonids in the Walla Walla Watershed in Washington	Washington State Department of Fish and Wildlife	\$169,723
20127	Walla Walla River Basin Monitoring and Evaluation Project	Confederated Tribes of the Umatilla Indian Reservation	\$134,000
8811525	Yakima/Klickitat Fisheries Project Design And Construction	Yakama Indian Nation	\$1,565,000
8812025	Ykfp Management, Data And Habitat	Yakama Indian Nation	\$750,000
9506325	Yakima/Klickitat Fisheries Project Monitoring And Evaluation	Yakama Indian Nation	\$4,309,934
9506425	Ykfp - Wdfw Policy And Technical Involvement In The Ykfp	Washington Department of Fish and Wildlife	\$275,000
9701325	Yakima/Klickitat Fisheries Project Operations And Maintenance	Yakama Indian Nation	\$2,260,160
9107300	Idaho Natural Production Monitoring And Evaluation	Idaho Department of Fish and Game	\$767,512
9608600	Clearwater Subbasin Focus Watershed Program - Iscc	Idaho Soil Conservation Commission	\$89,450
9706000	Clearwater Subbasin Focus Watershed Program - Npt	Nez Perce Tribe	\$98,737
9901400	Restore Anadromous Fish Habitat In The Little Canyon Creek Subwatershed	Clearwater Focus Watershed Program - Idaho Soil Conservation Commission	\$196,855
9901500	Restore Anadromous Fish Habitat In The Nichols Canyon Subwatershed	Clearwater Focus Watershed Program - Idaho Soil Conservation Commission	\$186,237
20084	Protect And Restore The North Lochsa Face Analysis Area Watersheds	Nez Perce Tribe	\$154,782
20086	Rehabilitate Newsome Creek - S.F. Clearwater River	Nez Perce Tribe	\$301,689
20087	Protect And Restore Mill Creek Watershed	Nez Perce Tribe	\$63,036
9607708	Protect And Restore The Lolo Creek Watershed	Nez Perce Tribe	\$203,750

9607709	Protect And Restore The Squaw To Papoose Creeks Watersheds	Nez Perce Tribe	\$303,607
9607711	Restore Mccomas Meadow/ Meadow Creek Watershed	Nez Perce Tribe	\$166,622
9901600	Protect & Restore Big Canyon Creek Watershed	Nez Perce Tribe	\$61,276
9901700	Protect & Restore Lapwai Creek	Nez Perce Tribe	\$61,276
OTHER: Delay funding until adult sockeye passage at, or elimination of, the Enloe dam is reasonably assured. The project offers potentially high programmatic value.			
20123	Restoration Of Sockeye Salmon Into Palmer Lake	Salmonsoft	(Tier 2)

3. ISRP Recommendations of Fund-in-Part, CBFWA Rank of Tier 1 or 2

The ISRP recommends partial funding for 30 of the FY2000 proposals (Table 6). A recommendation of **Fund in Part** is assigned to a proposal that includes work that is scientifically supported, but also some work that is not. In this case, the ISRP specified which objectives or tasks are not scientifically sound and recommends that these parts of the proposal not be funded. Examples are proposals that included objectives that were not scientifically supported. For instance, a proposal for both background survey work and subsequent major implementation programs that could not be supported before results of the survey were known, or proposals that included use of unsound methods to meet a particular objective.

Information about the specific portions of proposals the ISRP recommends for funding and not funding are included in the table below to ensure that the Council, BPA, and project sponsors are aware of and address the scientific concerns. Further details on the ISRP's recommendations to **fund in part** are provided in Volume II.

Table 6. ISRP Recommendations of Fund-in-Part, CBFWA Rank of Tier 1 or 2

ProjectID	Title	Sponsor	ISRP Recommendation	FY00 CBFWA REC	FY00 Request
8346700	Mitigation For The Construction And Operation Of Libby Dam	Montana Department of Fish, Wildlife and Parks	Fund in part at FY98 level. Subsequent funding contingent on a favorable comprehensive review by a visiting independent scientific committee.	\$500,000	\$500,000
8710001	Enhance Umatilla River Basin Anadromous Fish Habitat	Confederated Tribes of the Umatilla Indian Reservation	Fund in part at a reduced level. Review next year for reports of results and application of monitoring.	\$260,000	\$305,000
8806400	Kootenai River White Sturgeon Studies And Conservation Aquaculture	Kootenai Tribe of Idaho	Fund in part. Fund the research component. Do not fund capital expenditures until a comprehensive review of regionwide white sturgeon recovery efforts is complete. Do not fund kokanee portion of the proposal, objective 4, because the scientific basis for linking kokanee to white sturgeon is not justified.	\$1,150,202	\$2,750,202
8806500	Kootenai River Fisheries Recovery Investigations	Idaho Department of Fish and Game	Fund in part at reduced level (FY99 level?). Do not fund hypotheses 2,3,4 and 11 they are not well thought out and 3 and 11 are absolutely wrong in terms of theory. Any subsequent funding must be subject to completion of a specific independent scientific review, via a visiting committee, and a comprehensive review of regionwide white sturgeon recovery efforts.	\$616,596	\$616,596
9000500	Umatilla Hatchery Monitoring And Evaluation	Oregon Department of Fish and Wildlife	Fund in part at reduced level. Incorporate internal hatchery monitoring into routine operations. Establish termination dates for some procedures	\$650,000	\$721,588
9000501	Umatilla River Basin Natural Production Monitoring And Evaluation	Confederated Tribes of the Umatilla Indian Reservation	Fund in part at a reduced level. Improve the focus. Review next year.	\$480,000	\$609,191
9004400	Implement Fisheries Enhancement Opportunities: Coeur D'alene Reservation	Coeur d'Alene Tribe	Fund in part. Objectives 1,2, and 4 are OK for multi-year funding, review in FY2003 for reporting of results. Do not fund objective 3 (24% of budget), the put and take trout pond objectives, until they are better justified and subjected to environmental review for potential impacts to native biota.	\$685,254	\$685,254
9005500	Steelhead Supplementation Studies in Idaho Rivers	Idaho Department of Fish and Game	Fund in part, but do not fund the new tasks related to the genetics subcontract due to lack of adequate review information. The proposal needs a better description of who the genetics subcontractor is and what they are going to do. The reviewers are not provided adequate description of the methods the subcontractor will use, let alone the subcontractor's qualifications. The proposal should be included in the programmatic review of supplementation.	\$407,744	\$560,744

9101901	Flathead Lake Monitoring And Habitat Enhancement	Confederated Salish and Kootenai Tribes	Fund in part, for one year. The objective to quantify the trophic level (University of Montana) is not sufficiently described to justify funding at \$35K. The set of Flathead proposals needs a comprehensive review by independent scientists, via a visiting committee. The ISRP suggests that funding for the trophic-level objective be deferred until the suggested comprehensive review can be conducted, and that interim funding continue at the current level. The project would be a likely candidate for multi-year funding if the proposal included a better description of habitat to be recovered, and biologically measurable objectives.	\$95,000	\$95,000
9101904	Hungry Horse Mitigation - Nonnative Fish Removal / Hatchery Production	U.S. Fish and Wildlife Service	Fund in part. Do not fund objective 3, non-native stocking.	\$428,950	\$428,950
9102900	Life History And Survival Of Fall Chinook Salmon In Columbia River Basin	U.S. Geological Survey, Biological Resources Division	Fund in part, do not expand into objectives 6 and 7 until they have reported on previous results from Snake River basin research. Objective 6 and 7 should be developed as independent proposals with specific rationale, hypotheses, and study design.	\$743,558	\$799,525
9402600	Pacific Lamprey Research And Restoration	Confederated Tribes of the Umatilla Indian Reservation	Fund in part at reduced level (10%) to assess results and develop a long-term strategy, along the lines of objective 2 (10% of the budget). This project has been ongoing for approximately 5 years, project scientists need to show and assess the results to date and develop a long-term strategy.	\$381,190	\$381,190
9404900	Improve The Kootenai River Ecosystem	Kootenai Tribe of Idaho	Fund in part for one year; do not fund objective 4, evaluation of artificial fertilization. Subsequent funding must be contingent on: demonstration of integration in the umbrella; clear and compelling scientific justification of their work; completion of a comprehensive scientific review, via a visiting committee.	\$270,000	\$300,000
9500100	Kalispel Tribe Resident Fish	Kalispel Tribe of Indians	Fund in part. Fund objectives related to habitat restoration and monitoring of naturally producing bass. Do not fund bass supplementation objectives (40%) considering its general abandonment as ineffective in most other parts of the country, and the potential effectiveness of creating over-winter habitat for natural production.	\$297,000	\$297,000
9500600	Shoshone-Bannock/Shoshone Paiute Joint Culture Facility	Shoshone-Bannock Tribes	Fund in part. The ISRP recommends funding for Objectives 1-4 only. These first four objectives are slated for completion in June of 2001. These objectives provide valuable survey work on native fishes and the habitats that support them. These objectives could be folded into 9200100, which contains related habitat restoration efforts; the name of project 9200100 also better describes this work. Objectives (5 – 8) should not be funded without a more scientifically sound approach to establishing the need for and feasibility of a hatchery component. The ISRP does not support the hatchery development and fish-stocking portions of the proposal. If a hatchery is supported at all, it should focus on the possibility of using Yellowstone cutthroat or other native species. Nevertheless, the hatchery effort is premature.	\$282,621	\$282,621
9604000	Evaluate The Feasibility And Risks Of Coho Reintroduction In Mid-Columbia	Yakama Indian Nation	Fund in part. Recommend full funding for objectives 6-10; partial funding for objectives 11-15 based on costs related to implementation of objectives 6-10 in the Methow. Do not fund objectives 1-5 until coho reintroduction in the Methow has shown success in terms of naturally reproducing fish.	\$100,000	\$1,418,000

9700100	Captive Rearing Initiative for Salmon River Chinook Salmon	Idaho Department of Fish and Game	Fund in part, at a base level, to meet production objectives; do not fund research component of proposal because of technical inadequacies. There should be quality research associated with this project, designed with suitable methods and testable hypotheses to address recognized uncertainties associated with captive brood technology.	\$546,385	\$546,385
9700900	Evaluate Rebuilding The White Sturgeon Population In The Lower Snake Basin	Nez Perce Tribal Fisheries/Watershed Program	Fund in part at reduced level, subsequent funding contingent on submission of a more coherent and scientifically defensible proposal.	\$409,494	\$419,494
9702400	Avian Predation on Juvenile Salmonids in the Lower Columbia River	Oregon State University/Columbia River Inter-Tribal Fish Commission	Fund in part at FY99 level pending full review of results to date, expansion of the project is not sufficiently supported in the proposal. They should focus the research on managed and unmanaged Caspian Tern populations. (more definition on what should be cut)	\$642,600	\$642,600
9703800	Preserve Listed Salmonid Stocks Gametes	Nez Perce Tribal Fisheries/Watershed Program	Fund in part. Do not fund the portion to cryopreserve female genetic material, as this part of the proposal is too uncertain and experimental. While the objective appears worthwhile, other funding sources such as USDA or NSF may be more appropriate to support basic research and technology development.	\$185,122	\$185,122
9801003	Spawning distribution of Snake River fall chinook salmon	U.S. Fish and Wildlife Service	Fund in part for one year, at previous year's level. Future potential for multi-year funding, but better description/interpretation of significance of past results, and long-term future strategy, would be required.	\$177,666	\$182,666
9801400	Ocean Survival Of Juvenile Salmonids In The Columbia River Plume	National Marine Fisheries Service, Northwest Fisheries Science Center	Fund in part for one year (or a limited period) supporting objectives 1,2, and 5; future submittal and consideration of longer term funding should address ISRP comments about objectives 3 and 4.	(Tier 1)	\$826,000
9801900	Wind River Watershed Restoration	Underwood Conservation District (contact agency), USFS, USGS, WDFW	Fund in part. Objectives 1, 3, and 5 should be supported, followed by objective 2. Objective 4 should follow completion of objective 3. Unless the prioritized plan (objective 3) is completed funding should not exceed FY99 funding level. Complete the watershed assessment before funding any implementation.	\$553,717	\$1,146,412
9802400	Monitor Watershed Conditions On The Warm Springs Reservation	The Confederated Tribes of the Warm Springs Reservation of Oregon	Fund in part to cover culvert inventory and fish habitat survey; Do not fund macroinvertebrate and sediment components of the proposal until detailed methods are provided.	\$35,402	\$160,917
9803400	Reestablish Safe Access Into Tributaries Of The Yakima Subbasin.	Yakama Indian Nation - Fisheries	Fund in part to finish objectives 1-4, development of a watershed assessment and an implementation plan. Upon completion of the plan, resubmit a proposal with specific activities fully justified by the information gained from objectives 1-4.	\$771,918	\$771,918
9900300	Evaluate Spawning Of Salmon Below The Four Lowermost Columbia River Dams	WDFW, ODFW, USFWS, Pacific Northwest National Laboratory	Fund in part at a reduced level until feasibility of the juvenile work and possible application of the hydraulic work can be established. Review progress after the first year's work to determine next steps.	\$355,838	\$385,788

20054	Evaluate Effects Of Hydraulic Turbulence On The Survival Of Migratory Fish	Oak Ridge National Laboratory	Fund in part, objectives 1 and 2a. (completion of literature review and design of the equipment) (innovative). Subsequent funding should be based on review of results of the first phase. Subsequent funding should also require a study of fish behavior in response to turbulent flow and associated characteristics (e.g. noise). (medium priority)	(Tier 3)	\$341,000
20063	Evaluate Effects Of Catch And Release Angling On White Sturgeon	U.S. Geological Survey, Idaho Dept of Fish and Game	Fund in part (catch and release portion only). Do not fund the laboratory components (Category 1b).	(Tier 3)	\$271,486
20122	Test guidance flows and strobe lights at a SBC to increase smolt FCE & FGE	Washington Depart. of Fish and Wildlife	Fund in part with emphasis on testing guidance flow.	(Tier 3)	\$295,300
20145	Evaluate Little Walla Walla Screening Facility	Oregon Department of Fish and Wildlife	Fund in part for one year at reduced level.	(Tier 2)	\$242,677

4. ISRP Recommendations of Do Not Fund, CBFWA Rank of Tier 1 or 2

The ISRP and Peer Review Groups recommend that 57 proposals ranked as Tier 1 (36) or Tier 2 (21) not be funded. Twenty of the Tier 2 proposals did not have any funding recommended by CBFWA; thus, CBFWA recommended that 37 of these proposals receive funding in FY2000. The primary problem with the majority of the proposals in this group is that there was inadequate evidence that the proposal was either based on sound science principles (23 proposals) or of benefit to fish and wildlife (21 proposals, Table 7). Seven of the proposals in support of the PATH process are not recommended for continued funding, with justification summarized elsewhere in this report. Detailed comments on the proposals are contained in Volume II.

Table 7. Number of Tier 1 and 2 proposals recommended for no funding summarized by primary inadequacy.

The proposal is not based on sound science principles.	23
Inadequate benefit to fish and wildlife.	21
Inadequate objectives and provisions for monitoring and evaluation of results.	4
Tasks should be funded as part of another project	1
Proposal is for work already published.	1
PATH (see summary section for PATH proposals)	7

The ISRP recommends that the 50 Tier 1 and Tier 2 proposals contained in Table 8 not be funded for FY2000.

The most striking feature of our review of this group of proposals is that the comments in the CBFWA evaluations usually agreed with those of the Peer Review Groups, yet the proposals were placed in either the Tier 1 or 2 categories by CBFWA. For example, among the CBFWA evaluations of these Tier 1 and 2 proposals, comments along the following lines are not unusual:

“There are no milestones listed.”,

“When is this project going to end?”,

“Good concept but the proposal lacks enough detail to adequately review the project. ...

Sections 3 and 4 are incomplete. ... Proposal should include implementation activities and an effective monitoring plan.”,

“...does not describe biological objectives or milestones. ... Monitoring plan is inadequate.”,

“Proposal is vague and does not provide a complete project description.”,

“...this proposal has outlived its usefulness as a research activity.”, and

“...There is considerable concern about the high cost and uncertain biological effectiveness.

Project proposes a major structural solution without addressing ongoing land management activities”.

Comments or objections of this nature and magnitude within the ISRP / PRG reviews often led to an ISRP recommendation of “Do Not Fund”.

Table 8. ISRP Recommendations of Do Not Fund, CBFWA Rank of Tier 1 or 2

ProjectID	Title	Sponsor	CBFWA Tier	FY00 CBFWA Rec.	FY00 Sponsor Request
9600600	Facilitation, Technical Assistance And Peer Review Of Path	ESSA Technologies Ltd.	1	\$450,000	\$450,000
9600800	Stufa Participation In A Plan For Analyzing And Testing Hypotheses (Path)	Oregon Department of Fish and Wildlife	1	\$745,131	\$745,131
9600801	Technical Support For Path	National Marine Fisheries Service	1	\$75,000	\$75,000
9601700	Provide Technical Support For Path	BioAnalysts, Inc.	1	\$27,221	\$109,000
9800100	Analytical Support-Path And Esa Biological Assessments	Hinrichsen Environmental Services	1	\$119,900	\$125,000
9303701	Stochastic Life Cycle Model Technical Assistance	Paulsen Environmental Research Ltd	1	\$70,000	\$180,000
9700200	Path - Uw Technical Support	University of Washington	1	\$182,389	\$301,081
8335000	Nez Perce Tribal Hatchery	Nez Perce Tribe	1	\$14,590,000	\$20,188,949
8335003	Nez Perce Tribal Hatchery Monitoring And Evaluation	Nez Perce Tribe	1	\$992,847	\$992,847
8805302	Plan, Site, Design And Construct Neoh Hatchery - Umatilla/Walla Walla Compo	Confederated Tribes of the Umatilla Indian Reservation	1	\$2,800,000	\$6,400,000
20138	Design And Construct Neoh Walla Walla Hatchery	Confederated Tribes of the Umatilla Indian Reservation	1	\$250,000	\$1,380,000
20022	NE Oregon Hatchery Planning & Coordination - WDFW	Washington Department of Fish and Wildlife	1	\$10,000	\$12,942
8805301	Northeast Oregon Hatchery Master Plan	Nez Perce Tribe	1	\$1,217,017	\$1,217,017
8805305	Northeast Oregon Hatcheries Planning And Implementation - Odfw	Oregon Department of Fish and Wildlife	1	\$226,000	\$660,422
9705700	Salmon River Production Program	Shoshone-Bannock Tribes	1	\$931,376	\$931,376
8503800	Colville Tribal Fish Hatchery	Colville Confederated Tribes	1	\$360,973	\$360,973
9501100	Chief Joseph Kokanee Enhancement Project	Colville Confederated Tribes	1	\$396,753	\$596,753
9501300	Nez Perce Tribe Resident Fish Substitution Program	Nez Perce Tribe	1	\$750,000	\$850,000

9501500	Lake Billy Shaw Operations and Maintenance and Evaluation (O&M, M&E)	Shoshone-Paiute Tribes of the Duck Valley Indian Reservation	1	\$221,550	\$221,550
20135	Consumptive Sturgeon Fishery-Hells Canyon And Oxbow Reservoirs	Nez Perce Tribe	1	\$250,000	\$250,000
20017	Restore Habitat Within Dredge Tailings On The Yankee Fork Salmon River	Shoshone-Bannock Tribes, Idaho Department of Fish and Game, U.S. Forest Service	1	\$65,000	\$207,260
20025	Deschutes River Stray Summer Steelhead Assessment	Oregon Department of Fish and Wildlife	1	\$65,337	\$65,337
20049	Evaluate Sediment Transport In Spawning Habitat, Kootenai R., Idaho	U.S. Geological Survey	1	\$96,550	\$96,550
20079	Assessing Adult Steelhead Escapement & Genetics In The South Fork Salmon	Nez Perce Tribe	1	\$175,000	\$278,481
20080	Evaluate a Modified Feeding Strategy to Reduce Residualism ...	Idaho Fishery Resource Office, U.S. Fish and Wildlife Service	1	\$146,800	\$168,050
8331900	New Fish tagging System	National Marine Fisheries Service	1	\$1,388,800	\$1,388,800
9001800	Evaluate Rainbow Trout/Habitat Improvements Of Tribs. To Lake Roosevelt	Colville Confederated Tribes	1	\$189,636	\$189,636
9007800	Evaluate Predator Removal: Large-Scale Patterns	U.S. Geological Survey	1	\$117,880	\$117,880
9106700	Idaho Water Rental: Resident Fish And Wildlife Impacts - Phase III	Idaho Department of Fish and Game	1	\$119,465	\$119,465
9204800	Hellsgate Big Game Winter Range Operation And Maintenance Project	Colville Confederated Tribes, Fish & Wildlife Department	1	\$350,000	\$383,225
9303501	Enhance Fish, Riparian, And Wildlife Habitat Within The Red River Watershed	Idaho County Soil and Water Conservation District	1	\$450,000	\$550,000
9401001	Mitigation For Excessive Drawdowns At Libby Reservoir	Montana Fish, Wildlife and Parks and the Confederated Salish and Kootenai Tribes	1	\$377,971	\$377,971
9501600	Genetic Inventory Of Westslope Cutthroat Trout In The N F Clearwater Basin	Nez Perce Tribe	1	\$180,000	\$200,000
9506700	Colville Tribes Performance Contract For Continuing Acquisition	Colville Confederated Tribes, Fish & Wildlife Department	1	\$400,000	\$1,500,000
9802800	Trout Creek Watershed Improvement Project Multi Year Funding Proposal	Jefferson County Soil & Water Conservation District	1	\$231,126	\$483,795
9901900	Restore the Salmon River, in the Challis, ID area, to a healthy condition	Custer County Watershed Group	1	\$50,000	\$50,000
20036	Evaluate bull trout movements in the Tucannon and Lower Snake rivers.	U.S. Fish and Wildlife Service - Idaho Fishery Resource Office	2	\$107,164	\$111,164
20009	Fertilization Of Kootenay Lake And Arrow Reservoir	B.C. Ministry of Environment, Lands and Parks	2		\$175,000

20011	Evaluate Whole System Effects On Migration And Survival Of Juvenile Salmon	Oregon Cooperative Fish and Wildlife Research Unit	2		\$400,698
20016	Snake River Steelhead Hooking Mortality Study	Washington Department of Fish and Wildlife	2		\$117,240
20018	Tucannon River and Asotin Creek Riparian Enhancement	Washington Department of Fish and Wildlife	2		\$134,051
20021	Estimate natural steelhead production in two tributaries of the Walla Walla	Washington Department of Fish and Wildlife	2		\$332,850
20026	Evaluate Status Of Coastal Cutthroat Trout Above Bonneville Dam	Oregon Department of Fish and Wildlife	2		\$255,053
20030	Impact Of Nutrients On Salmon Production In The Columbia River Basin	University of British Columbia	2		\$185,640
20038	Assess Habitat And Passage For Anadromous Fish Upriver Of Chief Joseph Dam	Colville Confederated Tribes	2		\$274,284
20061	Influence Of Marine-Derived Nutrients On Juvenile Salmonid Production	U.S. Geological Survey, Biological Resources Division	2		\$309,859
20075	Engineered Anadromous Salmonid Habitat	University of Idaho	2		\$60,502
20081	STOI Wildlife Land Acquisition And Enhancements.	Spokane Tribe of Indians	2		\$2,032,750
20098	Develop And Evaluate Selective Commercial Fishing Gear: Tangle Nets	Washington Department of Fish and Wildlife	2		\$184,673
20100	Characterize Historic Channel Morphology Of The Columbia River: McNary Pool	Pacific Northwest National Laboratory	2		\$119,751
20104	Sources Of Myxobacterial Pathogens In Propagated Salmonids	Abernathy Salmon Culture Technology Center/U.S. Fish & Wildlife Service	2		\$90,100
20111	Preserve Cryogenically the Gametes of Selected Mid-Columbia Salmonid Stocks	Columbia River Inter-Tribal Fish Commission	2		\$89,573
20132	Yakima River Basin Water Temperature Monitoring And Modeling Project	Yakima Basin Joint Board	2		\$84,700
20144	Create Stream Reference Condition Data Set For The Upper Flathead R Basin	Flathead National Forest	2		\$26,000
20147	Evaluate Bull Trout Population Status/N.F. Clearwater R. - Npt	Nez Perce Tribe	2		\$188,100
20148	Evaluate Bull Trout Population Status/N.F. Clearwater R - Idfg	Idaho Department of Fish and Game and Nez Perce Tribe--Subproposal	2		\$154,920
9902400	Bull Trout Population Assessment in the Columbia River Gorge, WA	Washington Department of Fish and Wildlife	2		\$200,000

IV. Subbasin or Topical Reviews

Ocean and Estuary

Four proposals were submitted for funding (Table 7). Each proposal addressed the early marine survival of salmon in the Columbia estuary and coastal areas but they considered a variety of causal relations (e.g. fish health or quality versus predation rates, potential effects of fish diseases, predation by marine fishes, and early marine environmental conditions). Admittedly studies such as these are complex and costly, involving extensive sampling, numerous variables, and expensive platforms. However, researchers working in this environment must be capable of addressing these issues and preparing a scientifically sound proposal. While these proposals were extensive and informative, the reviewers identify a number of technical concerns for each. For example, sampling was frequently considered to be too limited to test the stated hypotheses, sampling duration was too limited to cover various life history types, or program objectives were simply too broad. Further, there was limited evidence of interactions between these proposals or with other programs developing in the coastal zone of the Pacific. These collaborations must be encouraged to maximize information collected, ensure linkages between programs, and optimize costs. The ISRP continues to strongly support the development of such studies, but recommends greater specificity in the mechanism being investigated, the applicability of methods proposed, and co-ordination between proposals, laboratories, and equipment. Detailed recommendations and comments are in Volume II.

Systemwide and Mainstem

This topical review included proposals with systemwide implications, smolt monitoring, data management, survival studies with tagged fish, projects related to the modeling effort PATH, systemwide coordination and implementation, and information services. The systemwide implications occur because these projects are mainly focused on the mainstem Columbia and Snake rivers, which serve as the migration corridor for salmon and steelhead emigrating from the tributary subbasins.

Mainstem projects concentrate on resolving problems in the Columbia and Snake rivers largely associated with dams and the manipulation of seasonal flow patterns. Management focuses on salmon (spring, summer and fall chinook, coho, chum, sockeye), winter and summer steelhead, Pacific lamprey, and white sturgeon. Many mainstem fishery-related activities are funded by the U. S. Army Corps of Engineers. Review of these projects was not included in this report.

Our most serious concerns with the mainstem proposals had to do with a failure of coordination and a failure to reflect the priorities of the Fish and Wildlife Program. These programmatic level inadequacies were quite separate from the clarity of the proposal writing or the formality of whether the proposal made a convincing case that the project could accomplish its objectives. These shortcomings were so severe that we recommended against funding a considerable number of proposals. We also recommended that many proposals be funded for one year only, pending an in depth programmatic review.

The proposals could have been improved if specific programmatic recommendations made in the FY1999 review had been addressed. Especially for smolt monitoring, the lack of coordination and poor integration with programmatic priorities in the FY2000 proposals are exactly those that were identified in the FY1999 proposals. In 1999 we recommended a programmatic review to address these deficiencies. These deficiencies should be corrected by the time of the FY2001 review. The proposals were generally more readable and informative than last year, though overall many still did not meet a standard appropriate for funding projects as directed under the 1996 Amendment to the Power Act.

Smolt Monitoring

The following discussion refers to 20 proposals that belong in the broad smolt monitoring category. In Table 9, they include those labeled Smolt Monitoring, Dissolved Gas, PIT Tag and Telemetry Technology, and Coded Wire Tag. They relate to monitoring of smolt survival, condition, travel time and passage through the mainstem, acquisition and deployment of tags, conduct of specific experiments tracking tagged fish, routine collection and distribution of tag recovery data, longer term data management, data analysis, and communication of data summaries. As a group, this set of proposals suffered from lack of coordination and integration. We have organized our comments into three sections in the discussion that follows 1) the need for an effective overall design for monitoring, which needs to go arm-in-arm with 2) the need for development and use of effective analytical methods, and 3) the need for effective data management.

1) Smolt Monitoring Design

The reviewers had many questions about project design, whether the analysis was to be based on recovery of marked fish or otherwise. Most notably there was a question in several (8332300, 8712700, 8401400) as to whether the sample sizes of marked fish were large enough to generate enough recoveries to address management questions with sufficient precision for practical application. In this regard, we also wondered whether certain samples of marked fish might provide information to several projects.

We note an especially problematic design issue with respect to determining smolt to adult return ratios (SARs), a parameter of special significance in evaluating the trends in abundance of populations. At the present low ocean survival rates, the sample size of PIT tagged fish seems too small to support reliable SAR estimates with the possible exception of the 'Comparative Survival Rate Study (CSS) Of Hatchery Pit Tagged Chinook' (8712702). This problem is badly exacerbated by the lack of attention to adult passage PIT tag detection facilities. The only ongoing, systematic, large scale effort at adult PIT tag monitoring is at Lower Granite Dam, where the monitoring is by hand-held wands used at the adult fish trap.

The Seber-Jolly statistical methodology is the preferred approach for dealing with variable, and generally unknown, detection efficiency at locations where large numbers of fish are passing. A minimum of three detection stations is required for use of this methodology. Recent studies with small numbers of radio-tagged adults have revealed a surprising complexity of the upstream migration pattern (lots of "wandering," a little "straying," and significant fallback) and also the potential for substantial adult mortality during the upstream passage (ISAB 99-1).

These factors are important enough to warrant a serious effort at adult monitoring by reach, using fixed PIT tag detector stations in the adult passage ways. This approach would be a stark contrast to the present adult monitoring approach. Additional adult detection facilities should be provided in the lower river. The need is urgent.

Four proposals for funding involved the application of coded-wire tags (in Washington, Oregon, and for USFWS) and recovery of tags in the Basin (Table 9), plus an umbrella proposal was prepared to encompass these four proposals. Coded-wire tagging is fundamental to assessing stock-specific exploitation patterns and rates (within the ocean and the Basin) and variation in brood survival rates. The merit of this tool is not questioned and the support provided through the Program is reasonable. However, these proposals failed to address two essential components of a scientific basis: the statistical basis of the numbers of tags applied and the adequacy of sampling to recover tags; and the representativeness of these stocks to be tagged, within the context of the tagging in the Basin. Is the overall program addressing the critical questions or stocks, and is it statistically informative? The ISRP recognizes that these questions have broader implications than just the projects funded under the Fish and Wildlife Program, but our endorsement of these proposals implicitly assumes acceptance of these issues. We are not aware of any review of these issues. This review may best be addressed within the context of a comprehensive programmatic review of the smolt monitoring programs. Future proposals should also make more effective use of the umbrella proposal (greatly reduce redundancy), and the proposals could be reduced to one for tag application (over all programs) and one for recovery and catch monitoring.

The coded wire tag sample sizes are roughly 20 times larger than the PIT tag sample size, but coded wire tags can be read only when the fish is dead, and the limited number of codes precludes unique identification for each individual. At the present time, with literally millions of coded wire tags going out to sea each year, the primary solid use of the data they generate is to prove that fish from certain hatcheries show up in certain harvests. This does not scratch the surface of the use that the coded wire tag returns could legitimately be put to if there was statistically valid estimation of recovery effort (sampling fraction). Also, the coded wire tag program needs to provide better information on which particular lots of fish, from which hatcheries, get tagged in any given year. The coded wire tag effort is of critical importance in assessing hatchery contributions that include ocean fisheries. We recommended funding these proposals with future funding contingent on increased coordination and inclusion in a programmatic review of the smolt monitoring program.

To summarize the present situation, the PIT tag program seems well placed for estimating downstream passage mortality rates as far as Bonneville, by reach and by route of passage, for fish groups (mostly hatchery fish) that are fitted with tags. But sample sizes look small and detection facilities are inadequate for addressing the very important questions of SARs and delayed mortality effects attributed to route of passage. Using conventional designs, the coded wire tag program does not lend itself to addressing the delayed mortality and SAR by route of passage questions, and the apparent absence of a design to quantify and report sampling effort casts some doubt on the statistical value of SAR estimates based on coded wire tag returns. CBFWA placed all but three of these 20 proposals in Tier 1. Of those three (20067, 9105100,

and 20012), the ISRP recommended 20067 and 20012 for funding and 9105100 for one-year funding.

The ISRP repeats its recommendation of the FY1999 review that these projects should be combined and subjected to a comprehensive programmatic review that gives special consideration to the complex interactions between the projects. At a minimum, these projects should be incorporated under a larger umbrella proposal that integrates the various components into a comprehensive program.

2) Data Analysis

The monitoring data that are accumulating are noisy, and are greatly affected by confounding environmental factors and inconsistent or inadequate design. The questions that managers need to answer with these data will require fairly sophisticated methods of analysis. Most of the proposals for analytical support, or methods development, fell under the PATH umbrella, which is discussed below. The projects dealing with statistical analysis and modeling of smolt monitoring data need also to be integrated into the design process for the smolt monitoring program. A data collection design cannot be assessed without a detailed specification of how those data will be analyzed. Otherwise, properties of the design, such as anticipated statistical power, cannot be evaluated.

3) Data Management and Data Summaries

Smolt monitoring results are contained in multiple databases. These include PTAGIS, Fish Passage Center, the UW Data Center, and to some extent StreamNet. As was the case last year, we cannot discern, based on the materials presented, a compelling reason for funding multiple databases of smolt monitoring results. The proposals provide little justification for how an individual data system is distinct from others in its scope or in the services it provides. Attempts are made to explain the distinction, but there is considerable potential for duplication of services and personnel. Included in this group is a proposal for a second-tier database to mitigate for problems in the primary database (9601900, Table 9). The primary database appears to be competitive rather than coordinated with other database systems. In addition, it is important to have backup of the data, but there is a potential for different versions of the “same” data, which could lead to confusion. To the extent that the databases are not duplicative, data users are not well served. Opportunities for mistakes abound if it is necessary to patch together data from different data centers in order to carry out an analysis. We recommended in the FY1999 review that the relationships between database projects be better documented. This has not been done. A review of the effectiveness of these data centers in quality control and in providing data access to researchers needs to be done. We recommend an independent review of the data management efforts before funding is continued beyond FY2000.

The ISRP recommends an independent review of the data management efforts that are supported by the direct funded program before funding is continued beyond FY2000.

Monitoring in Relation to Wild Spawning Stocks

The ISRP commented in its FY1999 review on the apparent inadequacy of monitoring attention to the more successful of the remaining wild spawning populations, including populations using mainstem spawning and rearing habitat. The monitoring efforts on wild stocks still seem not to be receiving the needed priority. Reviewers noted that one of the best means to ensure long term existence of salmonids in the Columbia River Basin is protection and enhancement of the few remaining successful wild spawning populations, and learning how to duplicate these successes with other stocks and other habitats.

The ISRP recommends that monitoring of the remaining wild spawning populations be targeted as a priority project for FY2001 and a request for proposals be issued.

Monitoring for Gas Bubble Disease

There were 3 proposals that focused on monitoring for signs of gas bubble disease (9602100, 20067, and 20143; Table 9). The first of these provides support for monitoring of gas bubble disease within the Fish Passage Center Project (9403300) by providing training of personnel and maintenance of equipment. The other two focus on gas bubble disease in adult salmonids. Proposal 20067 to determine effects of supersaturated gas on reproductive success of salmonids has the potential of providing much needed information. We recommend funding. We recommend the other two proposals for one year funding, during which time they should be included in a programmatic review of smolt monitoring projects aimed at developing a Columbia Basin-wide design capable of delivering sufficient data of the right kinds to be useful in implementing the management measures that are designed to reduce the effects of gas supersaturation on salmonids.

CBFWA placed the project we recommended for funding (20067) in Tier 3 and the two we recommended for one year funding in Tier 1.

Conclusions on the Smolt Monitoring Program

Smolt monitoring, if effectively designed and implemented, would be extremely important to management. Smolt monitoring and associated data management and data analysis play a pivotal role but reviewers have many serious questions about the effectiveness and efficiency of this program. The design, coordination, and integration questions in connection with smolt monitoring are unlikely to be resolved, and progress is very difficult to evaluate, if the smolt monitoring program is scattered and fragmented, and if the review is confined to review of individual, relatively isolated, proposals. For these reasons, we recommend that most of these projects be funded for FY2000 only. The ISRP repeats its recommendation of the FY1999 review that these projects should be combined and subjected to a comprehensive programmatic review that gives special consideration to the complex interactions between the projects. The review should include documentation of the intended data uses (including modeling projects), required levels of data precision, integrated designs to efficiently meet those requirements, the design of a unified data management and retrieval system and integration with statistical support facilities.

At a minimum, these projects should be incorporated under a larger umbrella proposal that integrates the various components into a comprehensive program and clearly justify the various

elements and define their relationship to each other. The management questions that could be answered with the results of an effective smolt monitoring program are extremely important. The large size of the program means that it will be expensive, so searches for efficiency are also important. If the monitoring program is successful in developing a proposal that meets all the concerns identified in a comprehensive review, the program might reasonably be moved to a multi-year funding basis. Multi-year funding is consistent with the long-term nature of the monitoring enterprise.

PATH

Overview of PATH

PATH is a multi-agency program that serves as a forum on specific technical matters of statistics and modeling. The scope of the program includes the effects of hydrosystem operation and transportation on downstream passage mortality and resulting adult returns and SARs for Snake River stocks. The FY1999 ISRP review expressed concern that individual proposals - with the exception of the coordinator's proposal - often did not define PATH, its function, the role of individual proposals, or project results and their contribution to the overall PATH program. In addition, the proposals did not identify active participants and distinguish them from those simply attending meetings. These shortcomings have largely been rectified in the FY2000 PATH proposals (Table 9).

In many respects PATH may now be viewed as an exemplary success because it has reached a conclusion on the central question it was intended to address. The purpose of PATH is to use available data to reconcile or decide between two competing models for the population dynamics of the listed Snake River stocks. In 1999 both PATH reports and the SRP reviews of PATH have concluded that the available data cannot resolve the differences between the two main competing models. Accordingly, PATH carried out some predictive analyses of hydrosystem management alternatives, giving approximately equal weight to the competing models and competing hypotheses about uncertain parameter values. In addition, the SRP concluded that the competing models are too complicated to be diagnosed very effectively with the available data.

Programmatic Perspective on PATH

Given that PATH has reached a conclusion on its core task, it is time to consider the programmatic implications of that conclusion, and to consider PATH's next task.

The key programmatic implication stems from the conclusion that available data are insufficient and inadequate to resolve crucial management questions about effects of various hydrosystem operation alternatives on the survival rates of listed Snake River stocks. The logical response to this is to examine the relevant ongoing data collection activities and re-design them so that they can, in the foreseeable future, deliver the types, quantity and quality of data that are required for decision making. Thus, PATH conclusions about data adequacy and data needs should be taken into account in the comprehensive review of the smolt monitoring program that we recommend for FY 2001.

It is not clear that continued efforts at modeling with existing data should be accorded a high priority. It has already been concluded that existing data are inadequate for the modeling needs, and that the models are over elaborate relative to the data. What would be gained by further

flogging of the data, or by further development of a system of models that is already too complicated?

The ISRP concludes that PATH should be congratulated for a job well done and recommends that it be honorably retired. PATH in its present form should be phased out. A simpler process could be created to meet the continuing need for evaluation of the limited data now available to address management questions relative to the hydro biological opinion. Future cooperative modeling ventures will be needed, based on new data or new visions of modeling needs, and at that time a successor to PATH might usefully be organized for the new mission. This more ambitious and comprehensive scientific consensus process could be developed somewhat along the lines of PATH. Primary tasks of this new process would be to address data collection design issues for the basin, identify data needs that are critical to the actual management questions, and ensure that data needs are met in a coordinated and efficient manner.

PATH has made a substantial contribution to the process by bringing responsible parties together for mutual analysis of disparate views; consequently, the new program might learn from the PATH experience in developing a strategy to achieve consensus on appropriate analytical approaches.

CBFWA placed seven of the PATH proposals in Tier 1 for funding and three in Tier 3.

Table 9. Comparison of ISRP and CBFWA rankings of Systemwide and Mainstem proposals for the ocean/estuary, smolt monitoring, PATH.

ProjectID	Title	Sponsor	ISRP Recommend	CBFWA Tier	ISRP Comparison to CBFWA	FY2000 CBFWA Rec.	FY2000 Sponsor Request
Systemwide and Mainstem							
Ocean and Estuary							
20011	Evaluate Whole System Effects On Migration And Survival Of Juvenile Salmon	Oregon Cooperative Fish and Wildlife Research Unit	DNF	2	Disagree-DNF		\$400,698
20052	Strategies To Limit Disease Effects On Estuarine Survival	Oregon State University, NMFS	Fund in Part	2	Disagree-fund in part		\$334,178
9702600	Ecology Of Marine Predatory Fishes: Influence On Salmonid Ocean Survival	National Marine Fisheries Service	Delay Funding	1	Disagree-until corrected	\$0	\$200,000
9801400	Ocean Survival Of Juvenile Salmonids In The Columbia River Plume	NMFS	Fund in Part	1	Partially agree-fund in part	\$0	\$826,000
Systemwide and Mainstem Umbrella Proposals							
20537	Bonneville Power Administration Non-Discretionary Projects Umbrella	Bonneville Power Administration	na	na	Umbrella Proposal		\$0
20515	Mainstem Columbia River Umbrella Proposal	Oregon Department of Fish and Wildlife (ODFW)	na	na	Umbrella Proposal		\$0
Smolt Monitoring							
20552	Smolt Monitoring Program Umbrella	PSMFC, IDFG, NPT, USGS	na	na	Umbrella Proposal		\$0
9403300	The Fish Passage Center (Fpc)	Pacific States Marine Fisheries Commission (PSMFC)	Fund for 1 YR	1	Agree-fund	\$1,079,363	\$1,079,363
20542	Biological Monitoring Of Columbia River Basin Salmonids	Multi-agency	na	na	Umbrella Proposal		\$0
8712700	Smolt Monitoring by Federal and Non-Federal Agencies	PSMFC	Fund for 1 YR	1	Agree-fund	\$1,870,449	\$1,870,449

8332300	Smolt Monitoring At The Head Of Lwr. Granite Reservoir & Lwr. Granite Dam	Idaho Department of Fish and Game	Fund for 1 YR	1	Agree-fund	\$396,700	\$396,700
8401400	Smolt Monitoring Program Marking	U.S. Fish and Wildlife Service	Fund for 1 YR	1	Agree-fund	\$121,038	\$121,038
8712702	Comparative Survival Rate Study (Csr) Of Hatchery Pit Tagged Chinook	PSMFC	Fund for 1 YR	1	Agree-fund	\$936,201	\$936,201
8740100	Assessment Of Smolt Condition: Biological And Environmental Interactions	U.S. Geological Survey, BRD	Delay Funding	1	Disagree-until corrected	\$199,046	\$199,046
Dissolved Gas							
9602100	Gas bubble disease research and monitoring of juvenile salmonids	U.S. Geological Survey, BRD	Fund for 1 YR	1	Agree-fund	\$43,711	\$43,711
20067	Effects Of Supersaturated Water On Reproductive Success Of Adult Salmonids	U.S. Geological Survey, BRD	Fund	3	Disagree-fund, but not high priority		\$839,893
20143	Monitor Symptoms Of Gas Bubble Trauma In Adult Salmonids	Columbia River Inter-Tribal Fish Commission	Fund for 1 YR	1	Agree-fund	\$112,755	\$112,755
PIT Tag and Telemetry Technology							
9105100	Monitoring And Evaluation Statistical Support	University of Washington	Fund for 1 YR	3	Disagree-fund; strongly recommend		\$340,357
9008000	Columbia River Basin Pit Tag Information System	PSMFC	Fund for 1 YR	1	Agree-fund	\$1,364,976	\$1,364,976
9701000	P.I.T. Tag System Transition	U.S. Army Corps of Engineers; PSMFC; Destron-Fearing; NMFS	Fund	1	Agree-fund	\$853,313	\$853,313
9808001	PIT Tag Purchase And Distribution	PSMFC	Fund for 1 YR		na		\$0
8331900	New Fish tagging System	NMFS	DNF	1	Disagree-DNF	\$1,388,800	\$1,388,800
20012	Develop New Technology For Telemetry And Remote Sensing Of Fish Quality	Oregon Cooperative Fish and Wildlife Research Unit	Fund	3	Disagree-fund, but not high priority		\$323,690
Coded Wire Tag							
20543	Coded Wire Tag Program	WDFW, ODFW, USFWS, PSMFC	na	na	Umbrella Proposal		\$0
8201300	Coded-Wire Tag Recovery	PSMFC	Fund for 1 YR	1	Agree-fund	\$1,923,498	\$1,923,498
8906900	Annual Stock Assessment - Cwt (Odfw)	ODFW	Fund for 1 YR	1	Agree-fund	\$215,800	\$215,800

			YR				
8906500	Annual Stock Assessment - Cwt (Usfws)	U.S. Fish and Wildlife Service	Fund for 1 YR	1	Agree-fund	\$110,586	\$110,586
8906600	Annual Stock Assessment- Coded Wire Tag Program (Wdfw)	Washington Department of Fish and Wildlife	Fund for 1 YR	1	Agree-fund	\$373,852	\$373,852
<i>PATH and PATH related</i>							
9600600	Facilitation, Technical Assistance And Peer Review Of Path	ESSA Technologies Ltd.	DNF	1	Disagree-DNF	\$450,000	\$450,000
9600800	Stufa Participation In A Plan For Analyzing And Testing Hypotheses (Path)	ODFW	DNF	1	Disagree-DNF	\$745,131	\$745,131
9600801	Technical Support For Path	NMFS	DNF	1	Disagree-DNF	\$75,000	\$75,000
9601700	Provide Technical Support For Path	BioAnalysts, Inc.	DNF	1	Disagree-DNF	\$27,221	\$109,000
9800100	Analytical Support-Path And Esa Biological Assessments	Hinrichsen Environmental Services	DNF	1	Disagree-DNF	\$119,900	\$125,000
9303701	Stochastic Life Cycle Model Technical Assistance	Paulsen Environmental Research Ltd	DNF	1	Disagree-DNF	\$70,000	\$180,000
8910800	Monitor And Evaluate Modeling Support	University of Washington	DNF	3	Agree-DNF		\$411,300
9700200	Path - Uw Technical Support	University of Washington	DNF	1	Disagree-DNF	\$182,389	\$301,081
9800600	Path Technical Support – James J. Anderson	James J. Anderson Consulting	DNF	3	Agree-DNF		\$50,000
8910700	Statistical Support For Salmonid Survival Studies	University of Washington	DNF	3	Agree-DNF		\$184,930

Innovative Bypass Proposals and Related research

Six bypass or flow related proposals addressed a wide variation in topics from complex numerical modeling to innovative re-design of overflows and bypass systems (Table 10), and included the large scale radio tracking program for up-stream migrating salmon, steelhead, and lamprey (proposal #9204101). Most of these proposals would benefit from consultations with biologists familiar with Pacific salmon data within the Basin, or with scientists to assist with proposals and experimental design (particularly the innovative proposals and ideas in proposals #20054, 20068, and 20110). Three proposals addressed the interaction of salmon with turbulent flow: one experimental approach, one computer modeling, and one facility design proposal. While the reviewers were supportive of this research topic, the technical presentation of these proposals detracted from their potential merits. The modeling proposal #20068 was difficult to evaluate and the reviewers were particularly concerned about the spatial/temporal resolution of the data needed versus the reality of the data available. They were supportive of the experimental approach (#20054) but the presentation of methods was weak, and the time-line for reporting seemed unrealistic. They did, however, support some work in the experimental approach, as opposed to developing a major experimental facility within the Basin (proposal #20060). The latter would clearly require years before any results would be useful. The strongest scientific program in this group was the Lower Columbia River adult study (#9204101). This project is a large scale study of up-stream movement of adults, but one that BPA provides only limited support to (\$200K, 13% of total). The ISAB's recent report on Adult Passage (ISAB 99-2) clearly indicates that this research is essential and the expense justified. Given the substantial COE funding, it seems appropriate to continue funding but the proposal and its associated report should be improved. The lack of reporting to-date resulted in a recommendation for one-year funding. Future support should be contingent upon progress in reporting past results.

Four generally strong proposals addressed the topics of Predators and Competitors; including the Northern Pikeminnow Management proposal (#9007700, budget request \$3.3 million). The reviewers were supportive of each proposal and particularly complimentary of the latter. "Great job on what must be a continuing controversial sell, they convinced us of the technical merits of this program." However, this program was evaluated under the "Implementation and Management" criteria and two important rating criteria were not addressed in the proposal (see Appendix II comments). The reviewers were also technically supportive of a closely related proposal (#9007800) and strongly encourage integration of these two proposals (full implementation of 9007800 would require 3.5% of the 9007700 budget). The outstanding issue for the Basin concerning Pikeminnow management would seem to be whether the task can be accomplished in other more cost-effective means. A new proposal concerning potential competition between American Shad and fall chinook salmon was also supported, particularly given the expansion of Shad in the mainstem reservoirs. However, the reviewers felt the presentation of the proposal requires clarification. The fourth proposal was a continuation of the avian predation program (proposal #9702400). The proposal was well written and thorough, but reporting of past results is inadequate and may not warrant expansion of an already large program. For example, how accurately can the population size and productivity of a colony be measured? This aspect of the study is not described but would clearly effect the ability to assess management actions. Having said that, however, the need for this work is well described and supported and early results appear encouraging. The need for the proposed expansion of the

research to additional bird colonies is less convincing. The reviewers strongly supported the evaluation of management actions taken to control Caspian Tern predation, but recommended more in-depth review of this research before further expansion.

Five proposals were grouped as System-wide Life History Studies (Table 10). Four of these five were large multifaceted proposals and the fifth involved development of a basin-wide research priorities plan for fall chinook salmon. While the merits of the latter were recognized, the reviewers did not support the process suggested. Two of the proposals (#9302900 and 9009300) were exceptionally well presented and have strong and timely publication records. These were recommended for multi-year funding. The remaining proposals (#9102900 and 9005200) were proposals for continuing very large-scale programs, the scope of which detracted from the methods outlined for each objective, and for which evaluation was difficult due to limited reporting of past results. These were determined to be important programs to continue, but ones that managers are strongly encouraged to re-examine their focus, program management, and to improve the reporting of past investigations. Just maintaining the many activities in these programs may be limiting the investigators' ability to report results. A better balance of field work, analysis, and reporting would likely result in a more focused and informative science program.

Systemwide Implementation

Four proposals related to various systemwide aspects of implementing the FWP (Table 10). One proposal seeks support for the continued CBFWA activities of fish and wildlife agencies and tribes. The ISRP made no funding recommendation on this proposal because the administrative functions presented in the proposal were not reviewable using scientific criteria. As to the technical content, the ISRP found that although the proposal contained more detail than previous versions, it still lacks detail as to how implementation work plans are developed and implemented. In contrast, the proposal to implement the CRITFC watershed assessment and restoration plan (9803100) presents excellent detail on rationale and methods, although it still lacks detail about subcontractor activities and implementation of the outreach activities described. The ISRP concurs with CBFWA that this proposal should be funded.

The ISRP recommended against funding proposal 9800800 to provide facilitation services for the regional forum. The ISRP concluded as it did in FY1999, that the proposal fails to document the need and justification for these facilitation services. The ISRP recommended against funding the proposal. While agreeing that facilitation services can be valuable in resolving difficult issues, the ISRP disagrees that they should be funded on an ongoing "retainer" basis. We recommend instead that these services be budgeted into specific projects if needed.

The fourth proposal in the "implementation" category is a proposal to fund enhanced enforcement for CRITFC (9202400). The proposal argues that the needs of weak stocks present extra enforcement problems and justify the support for enhanced enforcement activities. The arguments were scientifically convincing, the approach was reasonable, and the proposal contains specific provisions to monitor results. The ISRP recommended funding for one year with more information on the magnitude of the illegal harvest problem to be provided in future proposals.

Information Services

Four proposals related to the provisions of information services (Table 10). Of these, we recommended that two be funded, one be funded only after more detail on objectives, methods and evaluation is provided), and one not be funded. Three of the four proposals were judged by the ISRP to describe information services that are valuable or potentially valuable to the FWP participants and to the larger scientific and policy community in the Columbia River Basin. The proposal 9800401, the electronic fish and wildlife newsletter, is to continue work that has existed for one year. Although the proposal itself lacks thorough documentation of need and methods, there is supporting information that the newsletter is widely circulated and used. During 1999 the newsletter has proven to be a valuable communication tool for those working in the Basin. Two related proposals for new electronic newsletters – a watershed newsletter (20027) and a research report (20029) – also suffered from lack of detail and lacked a track record that could demonstrate their value. The ISRP recommends that the watershed newsletter be funded only after the appropriate details on need, methods, and evaluation be provided. For the newsletter reporting research results, the reviewers believe the need for research information dissemination is so strong that it justifies funding the newsletter for one year as an experiment. CBFWA placed both in Tier 3.

Independent Scientific Review

Two proposals for support of the Independent Scientific Advisory Board were included in this group (Table 10), but were not reviewed by the ISRP. CBFWA placed both in Tier 1.

Mainstem Habitat

The ISRP noted increased interest in work on the protection and enhancement of mainstem spawning populations of salmonids. In addition to one project to assess spawning below lower Columbia dams, there were three proposals for work on the Hanford Reach (Table 10). The ISRP recommended two for funding and encouraged resubmission of the third. While there were six proposals in the systemwide habitat and natural production group (two strongly recommended for funding), there were 16 proposals related to systemwide artificial production and disease (six recommended for funding).

The ISRP continues to recommend that the Council place more emphasis on protection and enhancement of habitat of naturally reproducing salmon populations in the mainstem of the Columbia River.

Systemwide Artificial Production

The proposals for research related to Systemwide Artificial Production were broadly related to three issues: improving the quality of smolts and reducing their negative interactions with wild fish by making smolts more 'wild-like'; understanding the genetic consequences of domestication and inbreeding in all kinds of culture systems including captive broodstock systems; and improving the physiological technology available for preserving the germ lines of endangered and threatened stocks (Table 10). Several of the latter proposals were technically excellent but were not recommended by ISRP for funding because the proposers did not demonstrate a programmatic need for the research. Of the twelve proposals in this group ISRP

disagreed with CBFWA in its recommendations in three instances, strongly recommending funding for one project that CBFWA assigned to Tier 3.

Fish Disease

Four proposals for research on fish diseases were reviewed (Table 10) included two relating to IHN virus, one to genetic consequences of prophylaxis, and one to the emerging bacterial cold water disease. We concluded that two proposals were inadequate for funding because they did not show a clear programmatic need for the research. CBFWA placed these in Tier 3 and 2 respectively. The two recommended for funding by the ISRP (20106 and 20056) were placed in Tier 2 and 3 respectively by CBFWA.

White Sturgeon

The ISRP reviewed three proposals related to systemwide problems associated with white sturgeon restoration (Table 10). We recommend funding for all three. In FY1999, the ISRP recommended that all the white sturgeon studies in the basin be coordinated, subjected to independent review and placed on a multi-year funding track. The ISRP continues to recommend such coordination and development of an umbrella proposal for work on white sturgeon. Three proposals related to problems associated with white sturgeon restoration in specific subbasins (mainstem above Grand Coulee, lower Snake River) also were reviewed. The ISRP recommended funding or partial funding for each. We disagreed with CBFWA in its recommendation putting one proposal (20062) in Tier 3, a proposal ISRP strongly favored for funding.

Pacific Lamprey

The ISRP reviewed five proposals for study of Pacific lamprey (Table 10). Two proposals related to the biology and systemwide management of Pacific lamprey. One was recommended for funding; the second, having been in progress for several years with little evidence of scientific progress, was recommended for only partial funding until such evidence is forthcoming. Three additional proposals relating to lamprey in specific subbasins (Lewis River, John Day River, Clearwater River) were recommended by ISRP for funding.

Table 10. Comparison of ISRP and CBFWA rankings of Systemwide and Mainstem proposals related to artificial production, fish disease, white sturgeon, pacific lamprey, systemwide coordination and information systems.

ProjectID	Title	Sponsor	ISRP Recommend	CBFWA Tier	ISRP Comparison to CBFWA	FY2000 CBFWA Rec.	FY2000 Sponsor Request
Systemwide and Mainstem							
<i>Innovative Bypass Proposals and Related Research</i>							
20054	Evaluate Effects Of Hydraulic Turbulence On The Survival Of Migratory Fish	Oak Ridge National Laboratory	Fund in Part	3	Disagree-fund in part		\$341,000
20060	Juvenile Anadromous Fish Prototype-Scale Evaluation Facility	Northwest Hydraulic Consultants, Inc.	DNF	3	Agree-DNF		\$127,700
20068	Numerical Study Of Flow-Field Structure On Salmonid Migration	University of Michigan	DNF	3	Agree-DNF		\$94,640
20099	System For Salmon Migrating Through Dams	Krick Salmon Survival Systems	DNF	3	Agree-DNF		\$145,000
20110	Develop Wheels, Pools and Falls Approach for Fish Passage at Dams.	Sun Mountain Reflections	DNF	3	Agree-DNF		\$198,570
9204101	Lower Columbia River Adult Study	U.S. Army Corps of Engineers	Fund for 1 YR	1	Agree-fund	\$0	\$200,000
<i>Predators and Competitors</i>							
9007700	Northern Pikeminnow Management Program	Pacific States Marine Fisheries Commission	Fund	1	Agree-fund	\$2,506,000	\$3,306,000
9007800	Evaluate Predator Removal: Large-Scale Patterns	U.S. Geological Survey	DNF	1	Disagree-DNF	\$117,880	\$117,880
9702400	Avian Predation on Juvenile Salmonids in the Lower Columbia River	Oregon State University/Columbia River Inter-Tribal Fish Commission	Fund in Part	1	Partially agree-fund in part	\$642,600	\$642,600
20095	Evaluate Interactions Of American Shad With Salmon In The Columbia River	U.S. Geological Survey, BRD	Fund	2	Agree		\$152,314
<i>Systemwide Life History Studies</i>							
9102900	Life History And Survival Of Fall Chinook Salmon In Columbia River Basin	U.S. Geological Survey, BRD	Fund in Part	1	Partially agree-fund in part	\$743,558	\$799,525

9302900	Survival Estimates for the Passage of Juvenile Salmonids Through Dams and R	National Marine Fisheries Service	Fund	1	Agree-fund	\$1,198,950	\$1,198,950
20149	Develop Research Priorities For Fall Chinook In The Columbia River Basin	Pacific Northwest National Laboratory	DNF	3	Agree-DNF		\$70,080
9005200	Performance/Stock Productivity Impacts of Hatchery Supplementation.	U.S. Geological Survey, BRD	Fund for 1 YR	1	Agree-fund	\$460,000	\$495,232
9009300	Genetic Analysis Of Oncorhynchus Nerka (Modified To Include Chinook Salmon	University of Idaho	Fund	1	Agree-fund	\$139,434	\$144,859
Systemwide Artificial Production Related Proposals							
9202200	Physiological Assessment of wild and hatchery juvenile salmonids.	National Marine Fisheries Service	Fund for 1 YR	1	Agree-fund	\$349,589	\$358,064
9105500	N A T U R E S [Formerly Supplemental Fish Quality (Yakima)]	National Marine Fisheries Service	Fund	1	Agree-fund	\$500,000	\$500,000
20075	Engineered Anadromous Salmonid Habitat	University of Idaho	DNF	2	Disagree-DNF		\$60,502
20059	Infrastructure To Complete FDA Registration Of Erythromycin	University of Idaho	Fund	1	Agree-fund	\$71,022	\$71,022
20105	Develop New Feeds For Fish Used In Recovery And Restoration Efforts	Abernathy Salmon Culture Technology Center	DNF	3	Agree-DNF		\$99,761
9305600	Assessment of Captive Broodstock Technology	National Marine Fisheries Service	Fund for 1 YR	1	Agree-fund	\$1,236,923	\$1,310,300
20111	Preserve Cryogenically the Gametes of Selected Mid-Columbia Salmonid Stocks	Columbia River Inter-Tribal Fish Commission	DNF	2	Disagree-DNF		\$89,573
20043	Intracytoplasmic Sperm Injection: Genetic Retrieval From Single Sperm	University of Idaho	DNF	3	Agree-DNF		\$223,765
20044	Endocrine Control Of Ovarian Development In Salmonids	University of Idaho	DNF	3	Agree-DNF		\$222,150
20045	Analyzing Genetic And Behavioral Changes During Salmonid Domestication	Washington State University	Fund	3	Disagree-fund; strongly recommend		\$209,720
20046	Induction of Precocious Sexual Maturity and Enhanced Egg Production in Fish	University of Idaho	DNF	3	Agree-DNF		\$196,812
20047	Enhancement of salmonid gamete quality by manipulation of intracellular ATP	University of Idaho	DNF	3	Agree-DNF		\$182,915

Disease							
20048	Viral Vaccines And Effects On Reproductive Status	Washington State University	DNF	3	Agree-DNF		\$204,887
20106	Heritability of Disease Resistance and Immune Function in Chinook Salmon	U.S. Fish and Wildlife Service	Fund	2	Disagree-fund; strongly recommend		\$398,596
20056	Elucidate Traffic Patterns Of IHN Virus In The Columbia River Basin	USGS-BRD, Western Fisheries Research Center	Fund	3	Disagree-fund; strongly recommend		\$75,207
20104	Sources Of Myxobacterial Pathogens In Propagated Salmonids	Abernathy Salmon Culture Technology Center/U.S.F.W.S.	DNF	2	Disagree-DNF		\$90,100
Systemwide Habitat and Natural Production							
20030	Impact Of Nutrients On Salmon Production In The Columbia River Basin	University of British Columbia	DNF	2	Disagree-DNF		\$185,640
20050	Remove Excess Heat From Streams And Store It For Future Application	Parker's Inc	DNF	3	Agree-DNF		\$29,160
20061	Influence Of Marine-Derived Nutrients On Juvenile Salmonid Production	U.S. Geological Survey, BRD	DNF	2	Disagree-DNF		\$309,859
20101	Connectivity And Productivity Of Mainstem Alluvial Reaches	Pacific Northwest National Laboratory	DNF	3	Agree-DNF		\$166,905
20103	Indexing Salmon Carrying Capacity to Habitat, Population, & Physical Fitness	Oregon State University	Fund	3	Disagree-fund; strongly recommend		\$363,392
20057	Strategies For Riparian Recovery: Plant Succession & Salmon	Oregon State University	Fund	3	Disagree-fund; strongly recommend		\$429,463
Systemwide and Mainstem Resident Fish							
20066	Inventory Resident Fish Populations in the Bonneville, The Dalles, and John	U.S. Geological Survey, BRD	DNF	3	Agree-DNF		\$267,340
White Sturgeon							
8605000	White Sturgeon Mitigation And Restoration In The Columbia And Snake Rivers	Oregon Department of Fish and Wildlife	Fund	1	Agree-fund	\$1,919,161	\$1,919,161
20062	Adaptive Management Of White Sturgeons	U.S. Geological Survey, BRD	Fund	3	Disagree-fund; strongly recommend		\$184,674

9902200	Assessing Genetic Variation Among Columbia Basin White Sturgeon Populations	University of Idaho	Fund	1	Agree-fund	\$146,938	\$146,938
Pacific Lamprey							
20065	Identification of larval Pacific lampreys (<i>Lampetra tridentata</i>), river lamp	U.S. Geological Survey, BRD	Fund	1	Agree-fund	\$78,700	\$78,700
9402600	Pacific Lamprey Research And Restoration	Confederated Tribes of the Umatilla Indian Reservation	Fund in Part	1	Partially agree-fund in part	\$381,190	\$381,190
Systemwide Wildlife Proposals							
9705900	Securing Wildlife Mitigation Sites – Oregon	ODFW for the Oregon Wildlife Coalition (OWC)	Fund	1	Agree	\$3,900,000	\$5,000,000
9609400	WDFW Habitat Unit Acquisition	Washington Department of Fish and Wildlife	Fund for 1 YR	1	Agree	\$1,912,335	\$1,912,335
20014	Evaluate Songbird Use Of Riparian Areas During Fall Migration	University of Idaho	Fund	3	Disagree-fund		\$32,760
Systemwide Coordination, Information Services, and Independent Scientific Peer Review							
8906200	Fish And Wildlife Program Implementation	Columbia Basin Fish and Wildlife Authority	na	1	na	\$2,042,041	\$2,180,531
9803100	Implement Wy-Kan-Ush-Mi Wa-Kish-Wit Watershed Assessment & Restoration Plan	Columbia River Intertribal Fish Commission	Fund	1	Agree-fund	\$267,471	\$355,325
9800800	Regional Forum Facilitation Services	DS Consulting	DNF	1	na	\$75,000	\$183,500
9202400	Protect Anadromous Salmonids In The Mainstem Corridor	Columbia River Inter-Tribal Fish Commission	Fund for 1 YR		na		\$388,427
8810804	Streamnet: The Northwest Aquatic Information System	Pacific States Marine Fisheries Commission	Fund for 1 YR	1	Agree-fund	\$1,936,453	\$1,936,453
9601900	Second Tier Database Support For Ecosystem Focus	Bonneville Power Administration	Fund for 1 YR	3	Disagree-fund		\$180,000
20069	Innovation Proposal Fund: Construct fuzzy logic decision support system fo	E&S Environmental Chemistry, Inc.	DNF	3	Agree-DNF		\$100,000
20027	Electronic Columbia Basin Watershed Newsletter	Intermountain Communications	Delay Funding	3	Disagree-if deficiencies corrected		\$56,600

20029	Electronic Columbia Basin Fish & Wildlife Research Report	Intermountain Communications	Fund	3	Disagree-fund, but not high priority		\$56,600
9800401	Electronic Fish And Wildlife Newsletter	Intermountain Communications	Fund	1	Agree-fund	\$150,450	\$150,450
8907201	Independent Scientific Advisory Board Support	DOE/Oak Ridge National Laboratory	na	1	na	\$49,959	\$99,918
9600500	Independent Scientific Advisory Board	Columbia Basin Fish and Wildlife Foundation	na	1	na	\$341,790	\$683,580

Lower Columbia

The Lower Columbia Subregion is defined as the Columbia River and its tributaries from the mouth of the Columbia to Bonneville Dam. The 23 proposals reviewed in this section are for work in the following subbasins: Lower Columbia Mainstem, Grays, Elochoman, Cowlitz, Kalama, Lewis, Willamette, Washougal, and Sandy. However, not all subbasins were represented in the proposals (Table 11). Some of the proposals do not meet a standard appropriate for funding as directed under the 1996 Amendment to the Power Act. Some contained references to information contained in other documents but did not provide information in the proposal itself.

Lower Columbia Mainstem

Two projects were recommended for funding by the ISRP based on commendable cost-sharing arrangements and their strong potential benefit to anadromous fish. Both are modest proposals with potentially big benefits. The ISRP and CBFWA disagreed on these recommendations. The projects are “Restore Unobstructed Fish Passage to Duncan Creek” (20013) and “Reconnect the Westport Slough to the Clatskanie River” (20107). Detailed evaluations are contained in Volume II.

Wildlife

The ISRP’s review of wildlife proposals was in general agreement with the CBFWA’s Tier 1 ranking of the seven proposals (Table 11). Some of the proposals described monitoring of target species in the purchased tracts. This was a significant improvement over last year’s proposals. The ISRP recommends this year’s as models for future proposal preparation.

Cowlitz Subbasin

One proposal was received for the Cowlitz subbasin to test guidance flows and strobe lights at a dam on the Cowlitz River for passage of juvenile anadromous fish (Table 11). The reviewers believed that the part of the proposal dealing with testing of guidance flows is of great potential benefit to passage of juvenile fish and that the proposal should be funded in part. It is also possible that the tests of strobe lights could also be included at little cost, but should not be the emphasis of the study. This proposal was ranked Tier 3 by CBFWA even though the CBFWA technical evaluation referred to the proposal as “new & innovative research.” Further justification for the ISRP recommendation is included in Volume II.

Lewis Subbasin

Two proposals were received for work in the Lewis subbasin (Table 11). The ISRP agreed with CBFWA on the importance of funding the study on population dynamics of lampreys in Cedar Creek and also judged the Cedar Creek natural production and watershed monitoring project (20109) to be worthy of funding. The ISRP strongly recommends funding this proposal. The proposal is excellent, comprehensive and persuasive, and a logical candidate for long-term funding. There is evidence of good

cooperation with local landowners and significant financial support from sources other than BPA. CBFWA disagreed, ranking the proposal Tier 3. Further details on the evaluation of the proposal are contained in Volume II.

Willamette Subbasin

There was 100% agreement between the ISRP and CBFWA recommendations for proposals from the Willamette subbasin (Table 11). Of the eight candidates for funding, the ISRP recommends funding for six, funding for one year for one, and no funding for one.

Sandy Subbasin

The ISRP recommends funding two wildlife proposals in the Sandy Subbasin, one for one year (Table 11). We also recommend not funding the one proposal to restore riparian and anadromous fish habitat in the subbasin (20125). The ISRP judged it technically inadequate. The ISRP and CBFWA agreed on both these recommendations.

Table 11. Comparison of ISRP and CBFWA rankings of projects proposed for the Lower Columbia Subbasin.

ProjectID	Title	Sponsor	ISRP Recommend	CBFWA Tier	ISRP Comparison to CBFWA	FY2000 CBFWA Rec.	FY2000 Sponsor Request
Lower Columbia							
9306000	Select Area Fishery Evaluation Project	ODFW, WDFW, Clatsop County	Fund for 1 YR	1	Agree-fund	\$1,400,000	\$1,500,000
20013	Restore Unobstructed Fish Passage To Duncan Creek	Skamania Landing Owners Association	Fund	3	Disagree-fund; strongly recommend		\$190,000
20098	Develop And Evaluate Selective Commercial Fishing Gear: Tangle Nets	Washington Department of Fish and Wildlife (WDFW)	DNF	2	Disagree-DNF		\$184,673
20107	Reconnect The Westport Slough To The Clatskanie River	Lower Columbia River Watershed Council	Fund	3	Disagree-fund; strongly recommend		\$29,850
20108	Recruit, Train, Organize & Support River Stewards	Oregon Trout	DNF	3	Agree-DNF		\$75,750
20120	Evaluate Factors Limiting Columbia River Gorge Chum Salmon Populations	U.S. Fish and Wildlife Service	Fund	1	Agree-fund	\$189,853	\$189,853
20140	Tualatin River National Wildlife Refuge Additions	U.S. Fish and Wildlife Service	Fund for 1 YR	1	Agree-fund	\$250,000	\$1,250,000
9205900	Amazon Basin/Eugene Wetlands Phase Two	The Nature Conservancy	Fund	1	Agree-fund	\$50,000	\$2,376,020
Cowlitz							
20122	Test guidance flows and strobe lights at a SBC to increase smolt FCE & FGE	WDFW	Fund in Part	3	Disagree-fund in part		\$295,300
Lewis							
20109	Cedar Creek Natural Production and Watershed Monitoring Project	WDFW	Fund	3	Disagree-fund; strongly recommend		\$225,899
20121	Evaluate Habitat Use And Population Dynamics Of Lampreys In Cedar Creek	U.S. Fish and Wildlife Service	Fund	1	Agree-fund	\$134,790	\$138,790
Willamette							

20550	Willamette Basin Mitigation Program Umbrella	Oregon Department of Fish and Wildlife	na	na	Umbrella Proposal		\$0
8816000	Willamette Hatchery Oxygen Supplementation	ODFW	Fund	1	Agree-fund	\$33,310	\$33,310
9405300	Bull Trout Assessment – Willamette/Mckenzie	ODFW	Fund	1	Agree-fund	\$59,240	\$59,240
9107800	Burlington Bottoms Wildlife Mitigation Project	ODFW	Fund	1	Agree-fund	\$116,822	\$116,822
9206800	Implement Willamette Basin Mitigation Program	ODFW	Fund	1	Agree-fund	\$230,000	\$230,000
9607000	Mckenzie River Focus Watershed Coordination	McKenzie Watershed Council	Fund	1	Agree-fund	\$105,000	\$105,000
20088	Assess Mckenzie Watershed Habitat And Prioritize Projects	McKenzie River Focus Watershed Council	Fund for 1 YR	1	Agree-fund	\$183,000	\$183,000
20089	Increase Instream Water Rights For Crabtree Creek	South Santiam Watershed Council	DNF	3	Agree-DNF		\$1,402,816
20128	Riparian Restoration And Enhancement Planning For Multnomah Channel	Metropolitan Service District of Oregon	Fund	1	Agree-fund	\$30,000	\$65,000
Sandy							
9902500	Lower Columbia River Wetlands Restoration And Evaluation Program	USFS, Columbia River Gorge National Scenic Area	Fund for 1 YR	1	Agree-fund	\$125,000	\$125,000
9902600	Sandy River Delta Riparian Reforestation	USFS, Columbia River Gorge National Scenic Area	Fund	1	Agree-fund	\$24,000	\$24,000
20125	Restore Riparian And Anadromous Fish Habitat In The Upper Sandy Basin	USFS, Zigzag Ranger District	DNF	3	Agree-DNF		\$97,750

Lower Mid-Columbia Subbasins:

This subbasin includes the mainstem Columbia River and its tributaries from above Bonneville Dam to the confluence of the Snake and includes the Yakima Subbasin and Hanford Reach.

Lower Mid-Columbia Mainstem and Multi-Subbasins

The ISRP noted increased interest in work on the protection and enhancement of mainstem spawning populations of salmonids (Table 12). In addition to one project to assess spawning below lower Columbia dams (9900300), there were two proposals for work on the Hanford Reach (20023, 9701400). The ISRP recommended one for funding (9701400) and encouraged resubmission of the other two. Of the other three mainstem proposals, the ISRP rated one “do not fund” (2010), and recommended two for full funding (94006900, and 20076). The “do not fund” proposal (20100) was placed in Tier 3 by CBFWA. The ISRP reviewed two proposals related to the Yakama Tribe, (9901300, 9603201), and recommended both for funding. They were also recommended for funding by CBFWA, although 9603201 (the sturgeon project) was placed in Tier 2, while the other was Tier 1.

The ISRP reviewed five proposals for wildlife mitigation (20115, 20116, 20074, 20082, and 9009200) all of which we recommended for funding. Three of the proposals are for acquisition of lands and three are for operation and maintenance of existing holdings. CBFWA recommended against funding 20116, the Horne Butte Project, but in favor of funding the rest, except 20074, the Eagle Lakes Ranch Acquisition, which was recommended for reduced funding.

Population Studies and Inventories

Included in Table 12, which summarizes ISRP reviews in this subbasin, are three salmonid inventories or population studies (9405400, 9802600, and 9902400). All have to do with study of native trout populations. The Fish and Wildlife Program specifies protection and enhancement of native fish populations as one of its objectives. Much remains to be learned about native fish populations in the basin and their interactions with the hydroelectric system and with exotic species that have been favored by the construction and operation of the system. Considering the limited amount of work being conducted on native species, it is especially important that studies be well designed and executed. One study (9405400) met the criteria and was recommended for funding. However, one (9802600) was judged to need further review after startup and was recommended for one year of funding, while the third (9902400) was judged to be technically inadequate and was not recommended for funding.

Table 12. Comparison of ISRP and CBFWA rankings of projects proposed for the Lower Mid-Columbia Mainstem and Multi-Basin proposals.

ProjectID	Title	Sponsor	ISRP Recommend	CBFWA Tier	ISRP Comparison to CBFWA	FY2000 CBFWA Rec.	FY2000 Sponsor Request
Lower Mid-Columbia							
Lower Mid-Columbia Mainstem and Multi-subbasin							
9900300	Evaluate Spawning Of Salmon Below The Four Lowermost Columbia River Dams	WDFW, ODFW, USFWS, PNNL	Fund in Part	1	Partially agree-fund in part	\$355,838	\$385,788
20023	Hanford Reach Steelhead Stock Investigation	Washington Department of Fish and Wildlife	Fund in Part	1	Partially agree-fund in part	\$91,546	\$98,820
9701400	Evaluation of Juvenile Fall Chinook Stranding on The Hanford Reach	Washington Department of Fish and Wildlife	Fund	1	Agree-fund	\$217,000	\$217,000
20100	Characterize Historic Channel Morphology Of The Columbia River: McNary Pool	Pacific Northwest National Laboratory	DNF	2	Disagree-DNF		\$119,751
9406900	A Spawning Habitat Model To Aid Recovery Plans For Snake River Fall Chinook	Pacific Northwest National Laboratory	Fund	1	Agree-fund	\$149,907	\$333,127
20076	Diet, Distribution & Life History of Neomysis Mercedis in John Day Pool	University of Montana	Fund	3	Disagree-fund		\$176,158
9901300	Ahtanum Creek Watershed Assessment	Yakama Indian Nation	Fund for 1 YR	1	Agree-fund	\$240,191	\$240,191
9603201	Begin Implementation Of Year 1 Of The K Pool Master Plan Program	Yakama Indian Nation	Fund	2	Agree		\$428,073
20115	Securing Wildlife Mitigation Sites - Oregon, Irrigon Wma Additions	Oregon Department of Fish and Wildlife	Fund for 1 YR	1	Agree-fund	\$25,394	\$25,394
20116	Securing Wildlife Mitigation Sites - Oregon, Horn Butte	Oregon Department of Fish and Wildlife	Fund for 1 YR	1	Agree-fund	\$42,302	\$442,302
20074	Eagle Lakes Ranch Acquisition And Restoration	U.S. Fish and Wildlife Service, Columbia National Wildlife Refuge	Delay Funding	1	Disagree-until corrected	\$287,134	\$853,500

20082	Rainwater Wildlife Area Operations & Maintenance	Confederated Tribes of the Umatilla Indian Reservation	Delay Funding	1	Disagree-until corrected	\$274,966	\$274,966
9009200	Wanaket Wildlife Mitigation Project Operations & Maintenance	Confederated Tribes of the Umatilla Indian Reservation	Fund for 1 YR	1	Agree-fund	\$200,000	\$200,000
20035	Water Right Acquisition Program (Multi-Year Fy 2000-2002)	Oregon Water Trust	Fund	1	Agree-fund	\$130,000	\$130,000
20126	Habitat Enhancement Within Transmission Corridors	USDA Forest Service, Zigzag Ranger District, Mt. Hood National Forest	DNF	3	Agree-DNF		\$308,500
9405400	Bull Trout Genetics, Habitat Needs, L.H., Etc. In Central And N.E. Oregon	Oregon Department of Fish and Wildlife	Fund	1	Agree-fund	\$380,000	\$424,608
9802600	Document Native Trout Populations	Washington Trout	Fund for 1 YR	2	Agree		\$60,701
9902400	Bull Trout Population Assessment in the Columbia River Gorge, WA	Washington Department of Fish and Wildlife	DNF	2	Disagree-DNF		\$200,000
9801900	Wind River Watershed Restoration	Underwood Conservation District	Fund in Part	1	Partially agree-fund in part	\$553,717	\$1,146,412

Hood, Fifteenmile Creek and Deschutes Subbasins

Of the 23 projects proposed for the Hood, Deschutes and Fifteenmile Creek subbasin for FY2000, the ISRP recommended that nine be funded, two be funded for one year, one be funded in part, and five not be funded (Table 13). Detailed comments on all the proposals are provided in Volume II.

Supplementation

In FY1999, the Hood River supplementation proposals were among the better proposals prepared on that subject. The same is true for the FY2000 proposals. Although our comments in Volume II suggest ways to improve the supplementation proposals, the overall quality was sufficient for the ISRP to recommend all the Hood River production proposals for funding. CBFWA placed all of them in Tier 1.

Habitat

In this subbasin, 13 of 23 projects were habitat or watershed restoration projects in Fifteenmile Creek, Deschutes, Wind, White Salmon and Hood rivers. The quality of the habitat proposals varied widely. The ISRP recommended that three of the habitat proposals be funded and four not be funded. Two projects were recommended for partial funding, two were recommended for funding for one year and one was recommended for funding only after deficiencies are corrected.

Table 13. Comparison of ISRP and CBFWA rankings of projects proposed for the lower mid-Columbia subbasins Hood, Fifteenmile Creek, Deschutes

ProjectID	Title	Sponsor	ISRP Recommend	CBFWA Tier	ISRP Comparison to CBFWA	FY2000 CBFWA Rec.	FY2000 Sponsor Request
<i>Hood, Fifteenmile and Deschutes</i>							
20513	Hood River / Fifteenmile Creek Umbrella	ODFW / CTWSRO	na	na	Umbrella Proposal		\$0
20519	Multi-Year Hood River Anadromous Fish Plan	Columbia Basin Fish & Wildlife Authority	na	na	Umbrella Proposal		\$0
20026	Evaluate Status Of Coastal Cutthroat Trout Above Bonneville Dam	Oregon Department of Fish and Wildlife (ODFW)	DNF	2	Disagree-DNF		\$255,053
8805303	Hood River Production Program - M&E	Confederated Tribes of the Warm Springs Reservation of Oregon (CTWSRO)	Fund	1	Agree-fund	\$499,888	\$499,888
8805304	Hood River Production Program - Odfw M&E	ODFW	Fund	1	Agree-fund	\$424,000	\$424,000
8902900	Hood River Production Program-Pelton Ladder-Hatchery	ODFW	Fund	1	Agree-fund	\$115,029	\$115,029
9301900	Powerdale, Parkdale, and Oak Springs O&M	ODFW / CTWSRO	Fund	1	Agree-fund	\$486,805	\$486,805
9500700	Hood River Production Program - Pge: O&M	Portland General Electric	Fund	1	Agree-fund	\$50,010	\$50,010
9802100	Hood River Fish Habitat Project	CTWSRO	Fund	1	Agree-fund	\$227,934	\$227,934
20004	White Salmon River Watershed Enhancement Project	White Salmon River Watershed Management Committee	DNF	3	Agree-DNF	\$0	\$205,527
20520	Multi-Year Plan Fifteen Mile Anadromous Fish Plan	Columbia Basin Fish & Wildlife Authority	na	na	Umbrella Proposal		\$0
9304001	Fifteenmile Creek Wild Steelhead Smolt Production	ODFW	Fund	1	Agree-fund	\$27,180	\$27,180
9304000	Fifteenmile Creek Habitat Restoration Project (Request Multi-Year Funding)	ODFW	Fund for 1 YR	1	Agree-fund	\$246,856	\$246,856
20521	Multi-Year Plan Deschutes Anadromous Fish Plan	Columbia Basin Fish & Wildlife Authority	na	na	Umbrella Proposal		\$0

20511	Deschutes River Umbrella Proposal	ODFW / CTWSR	na	na	Umbrella Proposal		\$0
20025	Deschutes River Stray Summer Steelhead Assessment	ODFW	DNF	1	Disagree-DNF	\$65,337	\$65,337
9404200	Trout Creek Habitat Restoration Project Multi Year Funding Proposal	ODFW	Fund	1	Agree-fund	\$358,847	\$380,697
20070	Water Conservation And Stream Enhancement Project	Tumalo Irrigation District	DNF	3	Agree-DNF		\$18,382,000
9802400	Monitor Watershed Conditions On The Warm Springs Reservation	CTWSRO	Fund in Part	1	Partially agree-fund in part	\$35,402	\$160,917
9802800	Trout Creek Watershed Improvement Project Multi Year Funding Proposal	Jefferson County Soil & Water Conservation District	DNF	1	Disagree-DNF	\$231,126	\$483,795
9900600	Restoration Of Riparian Habitat In Bakeoven / Deep Creeks	Wasco County Soil and Water Conservation District	Fund for 1 YR	1	Agree-fund	\$80,000	\$80,000
20113	Securing Wildlife Mitigation Sites - Oregon, South Fork Crooked River	ODFW	Fund	3	Disagree-fund		\$13,877

John Day Subbasin

The John Day River is the longest free-flowing river that contains only naturally producing salmon and steelhead in the Columbia Basin. No hatchery fish are planted. The CBFWA evaluates the subbasin as having the following problems: serious riparian habitat degradation from overgrazing and excessive withdrawal of water for irrigation, unscreened diversions, reduced spawning success from water quantity, water quality and sediment, and reduced range of rearing habitat.

Of the 15 proposals for projects in the John Day Basin (Table 14), the ISRP recommended funding for three, funding for one year for two with continued funding contingent upon correction of deficiencies in the proposal, to delay funding for 7 until deficiencies are corrected (specified in Volume II), and no funding for two. The 7 proposals for which we recommend delayed funding were ranked Tier 1 by CBFWA and one proposal that we recommend for funding was placed in Tier 2. Detailed comments on the individual proposals are provided in Volume II.

The overall quality of the proposals from the John Day Basin was poor, which is of special concern because this is the last large basin without dams and with naturally producing salmon and steelhead stocks. The ISRP agreed with CBFWA on the importance of all eleven Tier 1 projects, but recommended that funding be delayed until the proposals deficiencies are corrected.

Wildlife

We recommended funding to acquire the Oxbow Ranch (20134), However we recommend that future funding be contingent on the adequacy of baseline and monitoring plans. The ISRP recommends that funding be delayed for operations and maintenance, monitoring and evaluation of Pine Creek Ranch (9802200) until the land is purchased. One other wildlife project, Characterize and Assess The John Day Watershed Using Landsat TM Imagery (20115), was very different than most of the other wildlife proposals. The ISRP and CBFWA concurred in their recommendation not to fund this proposal.

Fish Habitat and Diversion Screens

The proposals for improvement of fish habitat and placement of diversion screens are potentially very important for improvement for naturally producing salmon and steelhead. However, the quality of the proposals did not match the potential importance of the measures. The ISRP recommended that funding be delayed for five projects until the deficiencies are corrected. In general, the proposals on which we recommend delay of funding are deficient in monitoring and evaluation plans, established priorities, and engineering plans.

Two proposals in this group deal almost exclusively with fencing of cattle from riparian habitat. Other projects include fencing as part of larger projects. The reviewers supported these proposals based on importance of the projects' overall habitat goals, but again noted the lack of adequate detail for long-term evaluation of project effectiveness. The

reviewers recommend funding for one of these proposals (8402100) for one year, with subsequent funding contingent on demonstration of biologically measurable results and on monitoring plans for effectiveness of improvement of habitat and fish abundance. The reviewers recommend delay of funding for the second fencing project (9303800) until evidence is provided that the project is succeeding and that monitoring plans are developed for habitat improvements and fish abundance.

Monitoring and Evaluation

One of the proposals in the John Day Basin was for monitoring natural escapement and productivity of John Day Basin spring chinook (9801600, *Monitor Natural Escapement & Productivity Of John Day Basin Spring Chinook*). Much of the proposal is excellent, however the statement that “Extensive surveys will cover all areas where spawning is believed to occur” indicates a disregard for a statistically valid sampling design. We recommend delay of funding for this absolutely necessary project until a valid sampling procedure is developed to sample all habitat, not only where the fish are believed to be next year but also areas into which they may move in the future. This is a necessary requirement of a valid monitoring program. With cooperation and sharing of funds to expand the sampling coverage, this monitoring project could satisfy many of the criticisms made by the reviewers. The lack of monitoring is a major problem in almost all of the John Day proposals. Few if any authors mentioned the existence of the proposed monitoring project, which could potentially, provide useful information in support of their projects.

Table 14. Comparison of CBFWA and ISRP rankings of projects proposed for the John Day Basin.

ProjectID	Title	Sponsor	ISRP Recommend	CBFWA Tier	ISRP Comparison to CBFWA	FY2000 CBFWA Rec.	FY2000 Sponsor Request
John Day							
20522	Multi-Year John Day Anadromous Fish Plan	Columbia Basin Fish & Wildlife Authority	na	na	Umbrella Proposal		\$0
20514	John Day River Umbrella	ODFW	na	na	Umbrella Proposal		\$0
9306600	Oregon Fish Screening Project - Fy'00 Proposal	ODFW	Delay Funding	1	Disagree-until corrected	\$641,621	\$641,621
9801600	Monitor Natural Escapement & Productivity Of John Day Basin Spring Chinook	ODFW	Delay Funding	1	Disagree-until corrected	\$159,800	\$179,800
8402100	Protect And Enhance Anadromous Fish Habitat In The John Day Subbasin	ODFW	Fund for 1 YR	1	Agree-fund	\$426,046	\$426,046
9303800	North Fork John Day Area Riparian Fencing	US Forest Service	Delay Funding	2	Disagree-until corrected		\$68,000
9605300	Upper Clear Creek Dredge Tailings Restoration	USDA Forest Service; Confederated Tribes of the Umatilla Indian Reservation	Delay Funding	1	Disagree-until corrected	\$85,000	\$85,000
9703400	Monitor Fine Sediment And Sedimentation In John Day And Grande Ronde Rivers	Columbia River Inter-Tribal Fish Commission	Fund	1	Agree-fund	\$32,145	\$32,145
9901000	Mitigate Effects Of Runoff & Erosion On Salmonid Habitat In Pine Hollow	Pine Hollow Watershed Council	Fund	1	Agree-fund	\$33,937	\$33,937
20134	Acquire Oxbow Ranch -- Middle Fork John Day River	Confederated Tribes of the Warm Springs Reservation of Oregon (CTWSRO)	Fund for 1 YR	1	Agree-fund	\$1,300,000	\$2,628,064
20015	Characterize And Assess The John Day Watershed Using Landsat Tm Imagery	Northwest Habitat Institute	DNF	3	Agree-DNF		\$215,380
20077	Inventory and Assessment of Irrigation Diversion Alternatives to Push-up Da	U.S. Bureau of Reclamation	DNF	3	Agree-DNF		\$187,500
20131	Enhance North Fork John Day River Subbasin Anadromous Fish Habitat	Confederated Tribes of the Umatilla Indian Reservation	Delay Funding	1	Disagree-until corrected	\$205,544	\$205,544

9801700	Eliminate Gravel Push-Up Dams On Lower North Fork John Day	North Fork John Day Watershed Council	Delay Funding	1	Disagree-until corrected	\$90,250	\$90,250
9801800	John Day Watershed Restoration	CTWSRO	Delay Funding	1	Disagree-until corrected	\$424,575	\$459,918
20064	Upstream migration of Pacific lampreys in the John Day R: behavior, timing	U.S. Geological Survey, BRD	Fund	2	Disagree-fund		\$298,700
9802200	Pine Creek Ranch Acquisition	CTWSRO	Delay Funding	1	Disagree-until corrected	\$94,600	\$98,336

Lower Mid-Columbia Subbasin: Umatilla, Walla Walla, Rock Creek

Rock Creek and Squaw Creek Watershed Projects.

The ISRP recommended funding the proposal for watershed assessment and restoration work in the Rock Creek watershed (20119) and the proposal to protect and enhance wildlife habitat in the Squaw Creek watershed (9506001). CBFWA placed both in Tier 1.

Umatilla River Subbasin Fisheries Projects.

The Umatilla Subbasin Umbrella lists eleven related fisheries projects in the subbasin (Table 15). The Multi-year Anadromous Fish Plan lists 19 related fisheries projects.

The umbrella states “It is intended that this document provide a clear picture of how projects within the Umatilla Subbasin are carefully planned and implemented to function as a unified set of actions to accomplish restoration objectives.” The umbrella identifies objectives that include return to the Umatilla Subbasin of 11,000 adult spring chinook, 21,000 adult upriver bright fall chinook, 6,000 adult coho, and 9,700 adult summer steelhead. It specifies six strategies to accomplish these objectives; 1) improving Umatilla River flow; 2) improving passage at Umatilla River irrigation diversions; 3) improving riparian communities and instream habitat; 4) reestablishing salmon production through hatchery releases; 5) supplementing steelhead populations using endemic stock; and; 6) monitoring and evaluation.

Each of the proposals we reviewed probably fits into one of the six strategies. However, we found that several proposals lacked any indication that the authors understood which strategy they were pursuing or what the related subbasin objective was. For example, the Power Repay Umatilla Basin Project (8902700), identifies the objective as “These pumping plants provide water for irrigation usage in exchange for instream natural Umatilla River flows and storage water designated for fish passage use. This is the key component of the Umatilla Subbasin instream flow enhancement effort.” Nevertheless, the proposal is not couched in terms of water or fish passage. The proposal does not reference the amount of water that has been or is proposed to be pumped, nor, is there any mention of the amount of water thus left in the Umatilla River for fish passage or the results in terms of improved fish passage in the Umatilla River. Instead, the proposal identifies the number of dollars spent to operate the pumps as though money spent were the objective.

Further to the point, the proposal states “It is assumed that the Umatilla Basin Project will provide more adequate flow conditions in the Umatilla River which will increase the survival of migrating juvenile and adult salmon and steelhead. This should, in turn, assist in the overall restoration effort in the basin by ensuring that flow conditions are not a limiting factor.” (Proposal, p. 8). This might have been an appropriate assumption to make at the outset of the project, but it is an easily tested assumption once the pumps begin operating. It could have been tested simply by calculating the volume of water pumped and measuring the results in terms of stream flow in the Umatilla River

downstream of the irrigation takeoff. We conclude that the proposal is not based on a sound scientific principle and has no clearly defined benefit to fish or wildlife. These are criteria that are spelled out in the amendment to the Northwest Power Planning and Conservation Act at (4)(g)(4)(iv) to be used by the ISRP in recommendations for funding. We recommend do not fund.

The Umatilla Hatchery Operation and Maintenance (Project 8903500) represents one of the six strategies identified for restoration of salmon and steelhead in the subbasin. Unfortunately, the water supply for the hatchery proved out at only 5,000 gpm compared to the anticipated 15,000 gpm. As a result, initial plans for numbers of smolts to be released have been revised downward. The number for summer steelhead has been revised downward from 210,000 smolts to 150,000, plans for release of 2.23M smolts of spring chinook reduced to 360,000, for 7.0M fall chinook reduced to 2.68M, and for release of 1.0M coho reduced (to zero?). Adult returns are not sufficient to supply the necessary eggs. Spring chinook brood stock is collected at Threemile Dam (on the Umatilla River), Little White Salmon Hatchery and Ringold Hatchery. Fall chinook come from Threemile Dam, Priest Rapids Hatchery and Bonneville Hatchery. Steelhead broodstock is collected at Threemile Dam. Project proposal 8343500 mentions that smolts of some species are also received from Bonneville Hatchery and Cascade Hatchery. Prior to release a portion of the juveniles are transferred to acclimation ponds upstream. This project is not a stand-alone project. Several factors lead the ISRP to recommend that there needs to be a full-scale peer review of this project and the assembly of projects that make up the strategies for the subbasin. There is a shortage of water for the hatchery. The ocean fishing rates observed are high (80% for fall chinook). There is a failure to demonstrate that flow and fish passage conditions in the Umatilla River have improved to the point where this program can be expected to make meaningful contributions to restoration of salmon and steelhead.

We have similar comments on the proposals for operation and maintenance of fish passage facilities (8343600), (8343500), and for the “Trap and Haul” operation (8802200). These projects do not stand alone, in and of themselves, but must be evaluated in the larger context of the subbasin objectives, i.e. in answer to the question “What progress is being achieved in accomplishing the objectives in terms of the specified numbers of returning adult chinook, coho, and steelhead?” Otherwise, they would end up being evaluated in terms of how many smolts are released, or how well the screens at irrigation takeoffs fit some standard set of criteria, or how many fish are held in satellite facilities, or how many fish are trapped and hauled. These evaluation terms are not useful except in a larger context that evaluates progress in the restoration of adult salmon and steelhead to the Umatilla Basin. While the umbrella proposal provides a general context for addressing the question, and a general statement about accomplishments in terms of numbers of returning adults, what is lacking is an analysis of how each of the individual projects actually has contributed or will contribute to restoration and how the projects interact with one another.

We believe that some of the proposers recognize this. For example, the Umatilla Passage Facilities O and M (8343600) proposal states “It is assumed that properly maintained

passage facilities will increase survival for adult and juvenile migrants.” (Proposal p. 7). This is probably a reasonable assumption. On the other hand, as we mentioned above with respect to the Power Repay Proposal, it is an assumption that can be tested with proper monitoring and evaluation. The proposal states “Since the project is operational in nature rather than research oriented, specific data related to success of the project is limited.” (Proposal at p. 9). Again, this demonstrates that in order to be based on sound scientific principles, this project needs to be integrated into or closely coordinated with several projects that propose to gather information on survival of salmonids under various conditions of flow (and we trust) passage operations (8902401, 9000501). Several specific points remained unexplained in the proposal. The role of the satellite facilities and thus their need is not clear. From the high rates of straying observed among returning adults, we questioned whether the satellite facilities were accomplishing their objectives. We concluded that, as written, the proposal is not based on sound scientific principles and the project can not be shown to benefit fish.

We recommended do not fund on the basis of the proposals reviewed. However, we recognize that these projects are underway and not readily discontinued. Therefore, we recommend that funding be delayed until a full-scale peer review is completed of the assemblage of projects involved in the Umatilla Subbasin restoration program.

The ISRP recommended funding at levels below those requested for a set of proposals including: Evaluate Juvenile Salmonid Outmigration and Survival in the Lower Umatilla (8902401), Umatilla Hatchery Monitoring and Evaluation (9000500), and Umatilla River Basin Natural Production Monitoring and Evaluation (9000501). While the proposals were based on sound scientific principles, all of them needed to improve their focus and clarify their methods. We were skeptical that some of the proposed methods were feasible.

We recommended that two proposals for improvement of stream habitat (871001 and 8710002) be funded. We advised that they be reviewed again in the FY 2001 round to check on progress, particularly with respect to how the proposed response variables are shown to correspond with the objectives. In both cases there is a need for close coordination and cooperation with the Natural Production Monitoring and Evaluation Project (9000501).

Our review is similar to the FY1999 review. The ISRP concluded in last year’s review that “Overall, there was insufficient technical justification in the hatchery proposals for an adequate scientific assessment of the hatchery and supplementation projects. For example, the proposed comparison of Michigan vs. Oregon rearing systems did not acknowledge the research that has been done on this subject in Willamette River hatcheries. Some proposals acknowledged the shortage of suitable water, but failed to provide a clear indication of how the hatchery system could improve production without sufficient high quality water – yet projections for future run sizes were contingent on the hatcheries operating at levels near maximum capacity, clearly an impossibility given the shortage of adult recruits and insufficient water. Two exceptions however, were the monitoring and evaluation project (9000500) and the outmigration and survival project

(890241), which were generally well presented and justified. Although each project was evaluated individually, as a whole the ISRP did not find the Umatilla hatchery proposals scientifically adequate, based on the level of information in many of them.” (ISRP, 1998). These comments from the FY1999 ISRP review closely match those of this year’s reviewers even though the reviewers were different.

The ISRP and CBFWA recommendations in the Umatilla Subbasin are in substantial disagreement. All of these Umatilla Subbasin projects were recommended for funding by CBFWA, and were placed in Tier 1.

While we sympathize with the objectives of the Umatilla River Subbasin program, most of the proposals we reviewed (8903500, 9000500, 8343500, 8802200, 8343600, and 902700) failed to demonstrate that they are based on sound scientific principles, show a relationship to objectives set for the subbasin, or establish a relationship to monitoring and evaluation efforts in the subbasin.

The separate Umatilla Subbasin projects should be organized under a single umbrella proposal. A single report should identify the progress of each project, its role and its contribution to the subbasin objectives.

Walla Walla River Subbasin Projects.

We reviewed 10 proposals for work within the Walla Walla River Subbasin, including one multi-year proposal with no request for funding (Table 15). On the basis of the proposals, we recommended six of these for funding (9601100, 9604601, 20145, 9901100, 20021, and 20127), on the condition that they be coordinated and funded at reduced levels to reflect overlap of objectives and methods. Our recommendation agreed with CBFWA’s recommendation for the first five named, which they placed in Tier 1, while 20127 was placed in Tier 2 by CBFWA.

The ISRP recommended against funding three proposals related to construction of the NEOH Hatchery on the Walla Walla River, i.e. Plan, Site, Design and Construct NEOH Hatchery (8805302), Design and Construct NEOH Walla Walla Hatchery (20138), and NE Oregon Hatchery Planning and Coordination – WDFW (20022), until the review of artificial propagation is completed, and full-scale peer reviews of the Umatilla and Walla Walla Subbasins are conducted.

The ISRP review for FY1999 recommended that the watershed assessment (9604601) be completed before the other work in the Walla Walla subbasin is implemented. Watershed assessment should guide the selection and prioritization of habitat restoration projects. CBFWA placed all six of the Walla Walla proposals in Tier 1.

We recommend that these projects be organized under a single umbrella responsible for developing an encompassing report that identifies limiting factors in the watershed, and identifies the role of each project in accomplishing specified objectives and strategies for dealing with those factors. This should be available for FY 2001 review.

We also recommend a full-scale peer review of the Walla Walla Subbasin Plan, including the proposed NEOH Hatchery, prior to funding the design or construction phases.

Table 15. Comparison of ISRP and CBFWA rankings of projects proposed for the Lower Mid-Columbia Mainstem and the Umatilla and Walla Walla Subbasins.

ProjectID	Title	Sponsor	ISRP Recommend	CBFWA Tier	ISRP Comparison to CBFWA	FY2000 CBFWA Rec.	FY2000 Sponsor Request
<i>Umatilla, Walla Walla, and Rock Creek</i>							
20119	Rock Creek Watershed Assessment and Restoration Project	Yakama Indian Nation - Fisheries	Fund	1	Agree-fund	\$156,206	\$240,317
9506001	Protect & Enhance Wildlife Habitats In The Squaw Creek Watershed.	Confederated Tribes of the Umatilla Indian Reservation (CTUIR)	Fund for 1 YR	1	Agree-fund	\$200,589	\$200,589
20523	Multi-Year Plan Umatilla Subbasin Anadromous Fish Plan	Columbia Basin Fish & Wildlife Authority	na	na	Umbrella Proposal		\$0
20516	Umatilla Subbasin Umbrella	ODFW	na	na	Umbrella Proposal		\$0
8903500	Umatilla Hatchery Operation and Maintenance	ODFW	Delay Funding	1	Disagree-until corrected	\$850,000	\$895,346
9000500	Umatilla Hatchery Monitoring And Evaluation	ODFW	Fund in Part	1	Partially agree-fund in part	\$650,000	\$721,588
8343500	Operate And Maintain Umatilla Hatchery Satellite Facilities	CTUIR	Delay Funding	1	Disagree-until corrected	\$775,000	\$822,161
8805302	Plan, Site, Design And Construct Neoh Hatchery - Umatilla/Walla Walla	CTUIR	DNF	1	Disagree-DNF	\$2,800,000	\$6,400,000
20138	Design And Construct Neoh Walla Walla Hatchery	CTUIR	DNF	1	Disagree-DNF	\$250,000	\$1,380,000
20022	NE Oregon Hatchery Planning & Coordination - WDFW	Washington Department of Fish and Wildlife	DNF	1	Disagree-DNF	\$10,000	\$12,942
8802200	Umatilla River Fish Passage Operations	CTUIR	Delay Funding	1	Disagree-until corrected	\$360,000	\$379,000
8343600	Umatilla Passage Facilities O & M	Westland Irrigation District	Delay Funding	1	Disagree-until corrected	\$502,000	\$703,106
8902700	Power Repay Umatilla Basin Project	Bonneville Power Administration	Delay Funding	1	Disagree-until corrected	\$550,000	\$650,000
20139	Walla Walla River Fish Passage Operations	CTUIR	Delay Funding	1	Disagree-until corrected	\$73,000	\$83,400

8902401	Evaluate Juvenile Salmonid Outmigration And Survival In The Lower Umatilla	ODFW	Fund for 1 YR	1	Agree-fund	\$250,785	\$300,499
9000501	Umatilla River Basin Natural Production Monitoring And Evaluation	CTUIR	Fund in Part	1	Partially agree-fund in part	\$480,000	\$609,191
8710001	Enhance Umatilla River Basin Anadromous Fish Habitat	CTUIR	Fund in Part	1	Partially agree-fund in part	\$260,000	\$305,000
8710002	Protect And Enhance Anadromous Fish Habitat In The Umatilla River Subbasin	ODFW	Fund	1	Agree-fund	\$353,000	\$465,158
20524	Multi-Year Plan Walla Walla Anadromous Fish Plan	Columbia Basin Fish & Wildlife Authority	na	na	Umbrella Proposal		\$0
9601100	Walla Walla River Juvenile And Adult Passage Improvements	CTUIR	Fund for 1 YR	1	Agree-fund	\$2,840,000	\$2,840,000
9604601	Walla Walla Basin Fish Habitat Enhancement	CTUIR	Fund	1	Agree-fund	\$240,000	\$275,000
20145	Evaluate Little Walla Walla Screening Facility	ODFW	Fund in Part	2	Agree		\$242,677
9901100	Assess Fish Habitat & Salmonids in the Walla Walla Watershed in Washington	Washington State Department of Fish and Wildlife	Delay Funding	1	Disagree-until corrected	\$169,723	\$184,723
20021	Estimate natural steelhead production in two tributaries of the Walla Walla	Washington Department of Fish and Wildlife	DNF	2	Disagree-DNF		\$332,850
20127	Walla Walla River Basin Monitoring and Evaluation Project	CTUIR	Delay Funding	1	Disagree-until corrected	\$134,000	\$156,931

Yakima/Klickitat Subbasin

Of the 39 proposals for work in the Yakima Subbasin (Table 16), the ISRP recommended that eight be funded, nine have funding delayed until deficiencies were corrected, five be funded for one year, one be funded in part, and eleven not be funded. CBFWA ranked 21 as Tier 1, two as Tier 2 and twelve as Tier 3. The ISRP concurred with six of the 21 Tier 1 rankings, recommending that the Council partially fund one project, fund five projects for one year with future funding contingent on correcting deficiencies in the proposals, and not fund nine projects until the proposals are adequately corrected. For the two projects ranked in Tier 2, the ISRP recommended one not be funded and the other funded for one year. The ISRP concurred with ten of the twelve projects in Tier 3, but recommended that one be funded and the other funded for one year. Detailed comments on the individual proposals are provided in Volume II.

The technical quality of most of the proposals was substandard, although a great deal of existing high quality research and monitoring in the Yakima basin could have been used to prepare stronger proposals. Background reports may provide usable information but they don't always specifically justify proposed activities. This must be done in the proposal. While background reports may provide the original rationale for a project, once a project is underway new information may negate or strengthen the original rationale or it may suggest other approaches to the problem.

Supplementation

The supplementation work has two principal objectives: 1) To test the hypothesis that new supplementation techniques can increase natural production and improve harvest opportunities; 2) to acquire knowledge about supplementation that can be used throughout the Columbia Basin.

Umbrella proposal 20510 describes the supplementation program in the Yakima subbasin. In FY1999, the Yakima supplementation proposals were generally considered inadequate. The quality of the proposals improved in FY2000, but problems remain that require correction before the ISRP can recommend funding. The proposals generally emphasize administrative processes or functions – design and construction, management and oversight, policy, and operations and maintenance – rather than emphasizing how the two objectives will be met by scientific or technical activities. This hindered the scientific review of the proposed work. There is no doubt that construction (8811525), management (8812025 and 9506425) and operations and maintenance (9701325) are necessary parts of the program, but they do not lead directly to the achievement of the stated objectives. The set of supplementation proposals under umbrella 20510 should be reorganized to emphasize the technical and scientific basis for activities that lead directly to the achievement of the program's two objectives.

The monitoring and evaluation proposal (9506325) did present a technical basis for activities relevant to the two stated objectives. However, the authors combined so many

projects into a single proposal that none was described in enough detail to allow scientific evaluation.

The five proposals included under the umbrella proposal include two that are primarily for project management. The two projects combined requested about \$1 million. The reviewers questioned why the activities included in these proposals are funded directly and separately, rather than through indirect costs charged to the supplementation program and collected by the agencies. Also, there appear to be errors in the budgeting for administrative costs. For example, of the two staff identified in one of the management proposals, one is budgeted in other projects for a total of 24 months in one year and the other is budgeted for a total of 36 months in one year.

Fish Screens

Six proposals involved the construction, installation, and evaluation of fish screens (Table 16). The proposals varied in quality, but, in general, clearly described the work to be accomplished and the needs and benefits of such work. The reviewers concluded that the screening projects should be funded and they do not need to be reviewed by the ISRP again until FY2003.

Habitat

The Roza-Sunnyside Board of Joint Control submitted a set of six proposals that addressed the need to alleviate the negative effects of agricultural practices on salmon habitat in the Yakima Basin (Table 16). While the goal of this set of proposals appears to be consistent with the needs of the basin, the ISRP recommended against funding. This group of proposals needs an umbrella document that should include maps showing the location of the proposed projects in relation to the distribution of salmonids in the basin. Planning should be separated from implementation in the proposals. First, the planning should be completed. Then an implementation proposal should be submitted when it can be shown (based on the planning) that the proposed activities and locations are justified. The board's staff needs to coordinate with fishery biologists in the basin and explicitly show how their projects are going to benefit fish or fish habitat. Several other weaknesses in the proposals were identified and presented in Volume II.

Other proposals for habitat work in the Yakima and Klickitat rivers varied in technical quality. Consequently, the ISRP's recommendations ranged from fund for multiple years for project 9705300, to do not fund for projects 20003, 20010, and 20072. Other projects were recommended for partial funding (9803400), funding for one year (9705600, 20118, 9603501, 20117, 9705000, and 9206200) and funding only after the proposal is revised (9705100 and 9803300).

The reviewers identified several general deficiencies in the habitat proposals. Frequently, the implementation of habitat projects was proposed before the watershed assessments and planning were completed. In some cases both the planning and implementation were included in the same proposal. This could explain the general lack of rationale for the

specific restoration activities, the lack of clear explanation of the limiting factors, and a discussion of alternatives. Although it was stated that habitat improvement is an important part of the supplementation program, the relationship between supplementation and the proposed habitat projects was either weak or nonexistent. In general the reporting of past results was inadequate. Finally, relevant, measurable performance measures were generally lacking and monitoring was poorly described.

Miscellaneous Projects

Several projects did not fit into the categories of supplementation, fish screens, and habitat. They include coordination of watershed planning (9901200), environmental education (9405900), temperature modeling (20132), developing an index of biotic integrity (20006), reconditioning wild steelhead kelts (20141), and a comparative population study (20039). ISRP recommendations for these projects are in Table 16 and the review comments in Volume II.

Table 16. Comparison of ISRP and CBFWA rankings of projects proposed for the Yakima and Klickitat Subbasins.

ProjectID	Title	Sponsor	ISRP Recommend	CBFWA Tier	ISRP Comparison to CBFWA	FY2000 CBFWA Rec.	FY2000 Sponsor Request
<i>Yakima and Klickitat</i>							
20510	Yakima/Klickitat Fisheries Project -- Umbrella	Yakama Indian Nation	na	na	Umbrella Proposal		\$0
8811525	Yakima/Klickitat Fisheries Project Design And Construction	Yakama Indian Nation	Delay Funding	1	Disagree-until corrected	\$1,565,000	\$1,565,000
8812025	Ykfp Management, Data And Habitat	Yakama Indian Nation	Delay Funding	1	Disagree-until corrected	\$750,000	\$750,000
9506325	Yakima/Klickitat Fisheries Project Monitoring And Evaluation	Yakama Indian Nation	Delay Funding	1	Disagree-until corrected	\$4,309,934	\$4,639,934
9506425	Ykfp - Wdfw Policy And Technical Involvement In The Ykfp	Washington Department of Fish and Wildlife (WDFW)	Delay Funding	1	Disagree-until corrected	\$275,000	\$275,000
9701325	Yakima/Klickitat Fisheries Project Operations And Maintenance	Yakama Indian Nation	Delay Funding	1	Disagree-until corrected	\$2,260,160	\$2,260,160
20525	Multi-Year Plan Klickitat Anadromous Fish Plan	Columbia Basin Fish & Wildlife Authority	na	na	Umbrella Proposal		\$0
9705600	Lower Klickitat River Riparian & In-Channel Habitat Enhancement Project	Yakama Indian Nation - Fisheries	Fund for 1 YR	1	Agree-fund	\$269,666	\$300,000
20118	Klickitat River Sub-Basin Assessment	Yakama Indian Nation	Fund for 1 YR	1	Agree-fund	\$141,035	\$235,059
20526	Multi-Year Plan Yakima Anadromous Fish Plan	Columbia Basin Fish & Wildlife Authority	na	na	Umbrella Proposal		\$0
8506200	Passage Improvement Evaluation	Pacific Northwest National Laboratory	Fund	1	Agree-fund	\$100,000	\$100,000
9105700	Yakima Phase 2 [Fish] Screen Fabrication	WDFW, Yakima Screen Shop	Fund	1	Agree-fund	\$293,113	\$293,113
9107500	Yakima Phase II Screens - Construction	U.S. Bureau of Reclamation	Fund	1	Agree-fund	\$1,000,000	\$1,000,000
9200900	Yakima [Fish] Screens - Phase 2 - O&M	WDFW, Yakima Screen Shop	Fund	1	Agree-fund	\$133,591	\$133,591
9503300	O&M Of Yakima Phase II Fish Facilities	U.S. Bureau of Reclamation	Fund	1	Agree-fund	\$99,520	\$99,520

9405900	Yakima Basin Environmental Education	Educational Service District 105	Fund for 1 YR	1	Agree-fund	\$125,186	\$125,186
20150	Evaluate Return Flow Recovery	Roza-Sunnyside Board of Joint Control	DNF	3	Agree-DNF		\$35,000
20151	Landowner Communication Program	Roza-Sunnyside	DNF	3	Agree-DNF		\$11,500
20152	Improve Yakima River Water Quality By Incorporating Buffer Strips	Roza-Sunnyside	DNF	3	Agree-DNF		\$161,000
20153	Construct Sediment Settling Basins	Roza-Sunnyside	DNF	3	Agree-DNF		\$264,500
20154	Improve Water Quality Monitoring Program	Roza-Sunnyside	DNF	3	Agree-DNF		\$161,000
20155	Inventory On-Farm Irrigation Practices	Roza-Sunnyside	DNF	3	Agree-DNF		\$9,600
9901200	Coordinate/Facilitate Watershed Project Planning/Implementation	Kittitas-Yakima Resource Conservation and Development District	Delay Funding	1	Disagree-until corrected	\$70,496	\$70,496
20547	Yakima Subbasin Habitat/Watershed Project Umbrella	Yakama Indian Nation	na	na	Umbrella Proposal		\$0
9603501	Satus Watershed Restoration	Yakama Indian Nation	Fund for 1 YR	1	Agree-fund	\$472,252	\$502,396
9705100	Yakima Basin Side Channels	Yakama Indian Nation - Fisheries	Delay Funding	1	Disagree-until corrected	\$601,673	\$801,673
20117	Yakima River Subbasin Assessment	Yakama Indian Nation	Delay Funding	3	Agree-DNF		\$235,059
9705000	Little Naches River Riparian & In-channel Enhancement Project	Yakama Indian Nation – Fisheries	Fund for 1 YR	2	Agree		\$96,142
9705300	Toppenish-Simcoe Instream Flow Restoration And Assessment	Yakama Indian Nation	Fund	1	Agree-fund	\$163,544	\$231,978
9803300	Restore Upper Toppenish Creek Watershed	Yakama Indian Nation	Delay Funding	1	Disagree-until corrected	\$194,583	\$207,003
9803400	Reestablish Safe Access Into Tributaries Of The Yakima Subbasin.	Yakama Indian Nation – Fisheries	Fund in Part	1	Partially agree-fund in part	\$771,918	\$771,918
9206200	Yakama Nation - Riparian/Wetlands Restoration	Yakama Indian Nation	Fund for 1 YR	1	Agree-fund	\$1,550,000	\$1,750,000
20003	Enhance Fish Habitat By Improving Water Quality	South Yakima Conservation District	DNF	3	Agree-DNF	\$0	\$200,000
20006	Yakima Basin Benthic Index Of Biotic Integrity (B-Ibi)	Washington Trout	Fund	3	Disagree-fund		\$48,072
20010	Improve Fish Habitat By Reducing Farm Sediment Runoff	Benton Conservation District	DNF	3	Agree-DNF		\$1,500,000
20072	Restoring Perennial Instream Flows At Ahtanum Creek	Dames and Moore	DNF	3	Agree-DNF		\$184,900

20132	Yakima River Basin Water Temperature Monitoring And Modeling Project	Yakima Basin Joint Board	DNF	2	Disagree-DNF		\$84,700
20141	Recondition Wild Steelhead Kelts	Columbia River Inter-Tribal Fish Commission	Fund for 1 YR	1	Agree-fund	\$72,752	\$80,252
20039	Comparative Population Study: Naneum, Coleman, Cooke Creeks	Washington Trout	DNF	3	Agree-DNF		\$52,218

Upper Mid-Columbia

Of the 17 proposals in the Upper mid-Columbia subbasin, the ISRP recommended that seven be funded, two be funded for one year with review prior to continuation, one be funded in part, two have funding delayed until deficiencies in the proposal are supplied, and five not be funded (Table 17).

Four types of proposals were included in this subbasin. Eleven were related to habitat issues (20031, 20042, 20002, 20071, 20083, 20001, 9803500, 9604200, 20033, 20037, and 20073), four to reintroductions of salmon (20038, 960400, 20123, and 20124), one to a hatchery (20058) and one to restoration of a recreational fishery (9502800).

Habitat

The mid-Columbia subbasin is characterized by habitat fragmentation brought about by dams, irrigation removals, and other human activities that have led to blocking through dewatering or production of high temperatures in the lower reaches of tributaries. To be effective, measures proposed for habitat improvement should result from an assessment of the particular watershed in which they are located that identifies the critical factors that need to be addressed. The ISRP recommended watershed assessments last year, and most of the proposals this year do refer to such an assessment. Two of these proposals did not refer to a watershed assessment (20071, 20033). The ISRP recommended that more effort be allotted to watershed assessment and the integration of remedial measures by all agencies and institutions.

Three of the five proposals that we recommended not be funded were for habitat work (20031, 20002, and 20073). All three failed to establish a clear benefit to fish and/or wildlife. All were ranked Tier 3 by CBFWA (Table 17).

Reintroduction of Salmon

There is a clear programmatic need for reintroduction of salmon into areas where they have been blocked. Such measures deserve high priority. The proposal for reintroduction of sockeye into Skaha Lake (20124) is an excellent proposal and a good example of a well-conceived reintroduction study.

Of the four proposals for reintroduction of salmon, the ISRP recommended that one be funded (20124), one be partially funded (9604000), one have funding delayed pending clarification of several issues in the proposal (20123), and one not be funded (20038). The first two of these were ranked Tier 1 by CBFWA (9604000 and 20124), while the other two (20123 and 20038) were ranked Tier 2.

Hatchery

The one hatchery proposal reviewed (20058) for the Upper Mid-Columbia was for additional funds to supplement funds already received. Objectives of the proposal are not

clearly specified. The need for repair of the facilities is mentioned, along with a desire to evaluate the hatchery program. But no cost breakdown is provided among the two general aims of the proposal. No description is given of the procedure to be followed to carry out the evaluation. The proposal does not provide enough information to allow a scientific judgement on its merits (i.e. it is not scientifically sound). On the basis of the information in the proposal, we conclude that it is unlikely that the evaluation phase of the proposal can achieve its objectives. In addition, the repair and maintenance portions are not specified in sufficient detail to determine their cost effectiveness. The ISRP recommended that this proposal not be funded. CBFWA ranked the proposal Tier 3.

Restoration of Moses Lake Fishery – Resident Fish

The ISRP recommended that funding for this proposal (9502800) be delayed. The proposal should be revised to include testable hypotheses in a suitable study design prior to being funded. The proposal dwelt too much on synthesis of existing information and ongoing collection of data without identifying specific problems or possible solutions. Without hypotheses about the causes of declines in the fishery, it is unlikely that further undirected collection of additional data will lead to identification of the reasons for or correction of the problem.

The proposal did not adequately address the ISRP's FY1999 comments, which noted that an experimental design was not clearly presented or justified, nor did it adequately describe methods to be used for some complicated actions. Effects of fishing on fish stocks were not well described. It was not evident that the proposers have sufficient understanding of the reasons for decline of the fisheries in Moses Lake, and further undirected collection of data is unlikely to reveal a possible solution.

CBFWA ranked this proposal Tier 1.

Table 17. Comparison of ISRP and CBFWA rankings of projects proposed in the Upper Mid-Columbia Basin.

ProjectID	Title	Sponsor	ISRP Recommend	CBFWA Tier	ISRP Comparison to CBFWA	FY2000 CBFWA Rec.	FY2000 Sponsor Request
Upper Mid-Columbia							
20031	Community Ecology And Food Web Studies In The Columbia River Basin	United States Forest Service	DNF	3	Agree-DNF		\$65,500
20038	Assess Habitat And Passage For Anadromous Fish Upriver Of Chief Joseph Dam	Colville Confederated Tribes	DNF	2	Disagree-DNF		\$274,284
20042	Integrating Okanogan And Methow Watershed Data For Salmonid Restoration	Okanogan Conservation District	Fund	3	Disagree-fund; strongly recommend		\$269,285
20058	Leavenworth Hatchery Complex	Bureau of Reclamation	DNF	3	Agree-DNF		\$630,000
Crab Subbasin							
20002	Hydrologic Study Of Stangland, Tyler And Clear Lake Area	Stangland-Tyler Aquifer Study	DNF	3	Agree-DNF	\$0	\$171,211
20071	Restore Crab Lake And Adjacent Reaches Of Crab Creek.	Ducks Unlimited, Inc.	Fund for 1 YR	3	Disagree-fund, but not high priority		\$365,000
20083	Evaluate, restore and enhance 14 miles of instream and riparian habitat on	U.S. Fish and Wildlife Service	Fund	3	Disagree-fund; strongly recommend		\$102,706
9502800	Restore Moses Lake Recreational Fishery	Washington Department of Fish and Wildlife	Delay Funding	1	Disagree-until corrected	\$234,890	\$234,890
Wenatchee and Methow							
20001	Remove 23 migrational barriers and restore instream and riparian habitat on	U.S. Fish and Wildlife Service	Fund	1	Agree-fund	\$160,000	\$305,000
20527	Multi-Year Plan Wenatchee River Anadromous Fish Plan	Columbia Basin Fish & Wildlife Authority	na	na	Umbrella Proposal		\$0
20528	Multi-Year Plan Methow Anadromous Fish Plan	Columbia Basin Fish & Wildlife Authority	na	na	Umbrella Proposal		\$0
9604000	Evaluate The Feasibility And Risks Of Coho Reintroduction In Mid-Columbia	Yakama Indian Nation	Fund in Part	1	Partially agree-fund in part	\$100,000	\$1,418,000

9803500	Watershed Scale Response Of Stream Habitat To Abandoned Mine Waste	University of Washington	Fund	3	Disagree-fund		\$53,820
Okanogan							
20529	Multi-Year Plan Okanogan Anadromous Fish Plan	Columbia Basin Fish & Wildlife Authority	na	na	Umbrella Proposal		\$0
9604200	Restore And Enhance Anadromous Fish Populations & Habitat In Salmon Creek	Colville Confederated Tribes	Fund	1	Agree-fund	\$577,983	\$2,427,983
20123	Restoration Of Sockeye Salmon Into Palmer Lake	Salmonsoft	Delay Funding	2	Disagree-until corrected		\$101,460
20124	Evaluate An Experimental Re-Introduction Of Sockeye Salmon Into Skaha Lake	Colville Confederated Tribes	Fund	1	Agree-fund	\$171,171	\$219,450
20033	Rehabilitate instream and riparian habitat on the Similkameen and Okanogan	U.S. Fish and Wildlife Service	Fund	3	Disagree-fund, but not high priority		\$484,902
20037	Improvement Of Anadromous Fish Habitat And Passage In Omak Creek	Colville Confederated Tribes	Fund	1	Agree-fund	\$349,661	\$349,661
20073	Evaluate Relationship Between Land Use, Water Quality, And Fish Health	U.G. Geological Survey	DNF	3	Agree-DNF		\$261,100

Upper Columbia Subregion

The Upper Columbia Subbasin is the blocked area above Chief Joseph Dam (initially above Grand Coulee Dam), which includes Lake Roosevelt and its tributaries, lakes Pend Oreille and Coeur d'Alene, and the watersheds of the Flathead and Kootenai rivers. Major hydropower facilities with environmental effects to be mitigated through the Fish and Wildlife Program are Grand Coulee, Hungry Horse, and Libby dams. They are three of the four principal storage reservoirs of the FCRPS (Federal Columbia River Power System) in the USA. The ISRP reviewed 48 proposals from this subbasin, three of which were unrated umbrella proposals (Table 16; Volume II). Twelve proposals (excluding umbrellas) were for new projects and 33 were for continuation of existing projects (Table 18).

The ISRP found 23 of these proposals to meet acceptable standards of technical quality and recommended that they be funded for FY2000. Five of these were new proposals. Seventeen were ranked Tier 1 by CBFWA (five were Tier 2; 2 were Tier 3). Three new projects ranked Tier 2 or 3 by CBFWA were judged by the ISRP to be of especially high merit and deserving of funding despite the lower CBFWA ratings (Projects 2007, 20028, and 20034; discussed further below and in Volume II).

The ISRP found technical problems with eleven subbasin proposals that led to recommendations to either delay funding until problems were resolved or partially fund the technically adequate portions of the proposals. Ten of these proposals were ranked Tier 1 by CBFWA. The other was ranked Tier 2.

The ISRP found eleven other subbasin proposals to not meet the standards of technical adequacy. Of these, seven were ranked Tier 1 by CBFWA, two as Tier 2, and one as Tier 3. The Tier 1 disagreements are discussed further below.

The ISRP agreed with half of the high priority (Tier 1) rankings by CBFWA. The CBFWA AIWP prioritization ranked 34 of the subbasin projects as Tier 1 (high priority). Of these, the ISRP found 17 to meet sound scientific standards and recommended that they be funded, recommended that eight be funded in part, two be funded only after technical problems were resolved, and recommended that seven not be funded because they did not meet acceptable scientific standards.

Three new proposals for the subbasin were strongly recommended by the ISRP, but were assigned Tier 2 or 3 by CBFWA. The reasons for the ISRP ranking are summarized here and explained more fully in Volume II. A proposal to acquire and conserve priority bull trout habitat in Trestle Creek watershed (20007) was judged high priority by the ISRP because it was a scientifically well justified proposal and it presented a persuasive argument for the critical nature of the bull trout habitat to be protected. CBFWA ranked this as Tier 2 but recommended that it be funded for \$50,000 of the requested \$276,370. Another proposal recommended for funding by the ISRP was to purchase a conservation easement from Plum Creek Timber Company along the Fisher River (20028). It would

preserve a large tract of land including both fish and wildlife habitat for a small sum of matching funds from BPA (most funding would come from the state of Montana and private arrangements). CBFWA ranked this Tier 2 but recommended that it be funded for \$250,000 of the requested \$500,000. A third proposal addressed a specific request by the ISRP for ecosystem-level projects, looking at impacts of flow regulation on riparian cottonwood ecosystems (20034). The proposal was exceptionally well written and justified scientifically, and integrated both biology and hydrology. Although we recommended that this proposal be funded, it is unclear if the project will be feasible in FY2000. They proposed to do mapping using IKONOS, a new commercial satellite, but it appears that communication was lost with the satellite after it was launched.

Seven proposals were not recommended for funding by the ISRP, but ranked Tier 1 by CBFWA. There were several reasons for the difference in rankings. The Colville Tribal Fish Hatchery (8503800) was rated low by the ISRP because its use of non-native fish conflicts with regional goals to enhance and protect native biota. The project to evaluate rainbow trout and habitat improvements of tributaries to Lake Roosevelt (9001800) was scientifically unsound because it did not provide an analysis of results of the project since its inception in 1990. The Chief Joseph Kokanee Enhancement Project (9501100) is important for the region and a key element of the Grand Coulee Dam mitigation, but it was a scientifically unjustified and unsound proposal based on nearly all other project-evaluation criteria. The Hells Gate Big Game Winter Range O&M project (9204800) was a scientifically unsound proposal. The proposal was vague and not a stand-alone document. The Colville Tribes Performance Contract for Continuing Acquisition (9506700) was also a technically incomplete proposal without a specific plan, specific properties to protect, specific benefits to fish and wildlife, or criteria to prioritize potential acquisitions. The project to mitigate for excessive drawdowns at Libby Reservoir (9401001) is indistinguishable from project 8346700, it failed to relate the work to reservoir operations as the title implies, and aspects of the work were judged scientifically unsound. The proposed new project to evaluate sediment transport in spawning habitat of the Kootenai River (20049) was poorly justified biologically and better funded as part of related studies in the same area (e.g., 8346700) after consideration of the ISRP's comments.

Several subbasins reviewed in the Upper Columbia could benefit from umbrella proposals. The Lake Roosevelt set associated with Grand Coulee mitigation needs an umbrella proposal (9104600, 9104700, 9404300, 9500900, 20096, 20097, 20146, 8503800, 9001800, 9501100, 9502700, 9700400). This umbrella should explain the problem of entrainment of fish through the dam and the need to compensate for this loss by fish stocking in the reservoir. It should also explain the problem of effects of water level drawdown on fish spawning and the added effect of this reduced recruitment on reservoir populations (aggravating the effects of losses through entrainment). The projects need to be tied together with clear biological objectives. Wildlife proposals for Grand Coulee Dam mitigation also would benefit from a coordinating umbrella proposal (20081, 9800300, 9106100, 9204800, 9506700). The Coeur d'Alene and Pend Oreille area fishery and wildlife proposals might also be served well by umbrella proposals. Both the Flathead (Hungry Horse mitigation) and Kootenai (Libby mitigation) subbasins

need umbrellas for all proposals, not just a select few as done this year. These should lay out the rationale for coordinated, multi-agency work at mitigation, with a long-range plan and implementation schedule. If the existing plan is still appropriate, the umbrella should summarize it. The inadequate coordination between proposals may be due to aggregation of proposals under umbrellas being left to the voluntary actions of the proposers instead of taking a more systematic approach.

Table 18. Comparison of ISRP and CBFWA rankings of projects proposed for the Upper Columbia Subregion.

ProjectID	Title	Sponsor	ISRP Recommend	CBFWA Tier	ISRP Comparison to CBFWA	FY2000 CBFWA Rec.	FY2000 Sponsor Request
Mainstem, Lake Roosevelt, Lake Pend Oreille and Coeur d'Alene							
9104600	Spokane Tribal (Galbraith Springs) Hatchery Operation & Maintenance	Spokane Tribe of Indians	Fund for 1 YR	1	Agree-fund	\$521,934	\$521,934
9104700	Sherman Creek Hatchery O&M.	Washington Department of Fish and Wildlife (WDFW)	Fund for 1 YR	1	Agree-fund	\$201,397	\$201,397
9404300	Monitor, Evaluate, And Research The Lake Roosevelt Fishery	Spokane Tribe of Indians	Fund for 1 YR	1	Agree-fund	\$1,500,000	\$1,500,000
9500900	Rainbow Trout Net Pen Rearing Project	Lake Roosevelt Development Association	Fund	1	Agree-fund	\$100,000	\$100,000
20096	Ford Hatchery Improvement, Operation and Maintenance	WDFW	Fund	2	Agree		\$333,105
20097	Phalon Lake Wild Rainbow Trap Improvements and O&M	WDFW	Delay Funding	2	Disagree-until corrected	\$25,000	\$25,000
20146	Lake Roosevelt Kokanee Net Pens	WDFW, Sherman Creek Hatchery	Fund for 1 YR	1	Agree-fund	\$185,825	\$185,825
8503800	Colville Tribal Fish Hatchery	Colville Confederated Tribes (CCT)	DNF	1	Disagree-DNF	\$360,973	\$360,973
9001800	Evaluate Rainbow Trout/Habitat Improvements Of Tribs. To Lake Roosevelt	CCT	DNF	1	Disagree-DNF	\$189,636	\$189,636
9501100	Chief Joseph Kokanee Enhancement Project	CCT	DNF	1	Disagree-DNF	\$396,753	\$596,753
9502700	Collect Data On White Sturgeon Above Grand Coulee Dam	Spokane Tribe of Indians	Fund for 1 YR	2	Agree	\$75,000	\$342,086
9700400	Resident Fish Stock Status Above Chief Joseph And Grand Coulee Dams	Kalispel Tribe of Indians	Fund	1	Agree-fund	\$421,000	\$421,000
20081	STOI Wildlife Land Acquisition And Enhancements.	Spokane Tribe of Indians	DNF	2	Disagree-DNF		\$2,032,750
9800300	O&M Funding Of Wildlife Habitat On Stoi Reservation For Grand Coulee Dam	Spokane Tribe of Indians	Delay Funding	1	Disagree-until corrected	\$97,187	\$97,187
9106100	Swanson Lakes Wildlife Area	WDFW	Delay Funding	1	Disagree-until corrected	\$247,500	\$247,500

20509	Hellsgate Big Game Winter Range Umbrella Project	CCT	na	na	Umbrella Proposal		\$0
9204800	Hellsgate Big Game Winter Range Operation And Maintenance Project	CCT	DNF	1	Disagree-DNF	\$350,000	\$383,225
9506700	Colville Tribes Performance Contract For Continuing Acquisition	CCT	DNF	1	Disagree-DNF	\$400,000	\$1,500,000
9004401	Lake Creek Land Acquisition And Enhancement	Coeur d'Alene Tribe	Fund	1	Agree-fund	\$140,423	\$140,423
9004402	Coeur D' Alene Tribe Trout Production Facility	Coeur d' Alene Tribe	Fund	1	Agree-fund	\$1,500,000	\$1,553,244
9004400	Implement Fisheries Enhancement Opportunities: Coeur D'alene Reservation	Coeur d'Alene Tribe	Fund in Part	1	Partially agree-fund in part	\$685,254	\$685,254
Pend Oreille							
9500100	Kalispel Tribe Resident Fish	Kalispel Tribe of Indians	Fund in Part	1	Partially agree-fund in part	\$297,000	\$297,000
20007	Acquire And Conserve Priority Bull Trout Habitat In Trestle Creek Watershed	River Network	Fund	2	Agree-fund (Tier 1?)	\$50,000	\$276,370
9404700	Lake Pend Oreille Fishery Recovery Project	Idaho Department of Fish and Game	Fund	1	Agree-fund	\$379,000	\$379,000
9700300	Box Canyon Watershed Project	Kalispel Tribe of Indians	Fund for 1 YR	3	Disagree-fund, but not high priority		\$70,256
9206100	Albeni Falls Wildlife Mitigation	Albeni Falls Interagency Work Group	Fund for 1 YR	1	Agree-fund	\$2,195,237	\$4,417,686
9106000	Pend Oreille Wetlands Wildlife Mitigation Project - Kalispel	Kalispel Tribe of Indians	Fund for 1 YR	1	Agree-fund	\$153,917	\$153,917
Flathead							
20554	Hungry Horse Fisheries Mitigation Umbrella	Montana Department of Fish, Wildlife and Parks (MDFWP)	na	3	Umbrella Proposal		\$0
9101901	Flathead Lake Monitoring And Habitat Enhancement	Confederated Salish and Kootenai Tribes	Fund in Part	1	Partially agree-fund in part	\$95,000	\$95,000
9101903	Hungry Horse Mitigation - Watershed Restoration & Monitoring (MFWP Umbrell	MDFWP	Fund	1	Agree-fund	\$498,026	\$498,026
9101904	Hungry Horse Mitigation - Nonnative Fish Removal / Hatchery Production	U.S. Fish and Wildlife Service	Fund in Part	1	Partially agree-fund in part	\$428,950	\$428,950
9401002	Flathead River Native Species Project (MFWP Sub-proposal)	MDFWP	Fund	1	Agree-fund	\$267,049	\$267,049

9502500	Flathead River Instream Flow Project (Mfwp Umbrella Subproposal)	MDFWP	Fund	1	Agree-fund	\$100,000	\$100,000
20144	Create Stream Reference Condition Data Set For The Upper Flathead R Basin	Flathead National Forest	DNF	2	Disagree-DNF		\$26,000
9608701	Focus Watershed Coordination-Flathead River Watershed	Confederated Salish and Kootenai Tribes	Fund for 1 YR	1	Agree-fund	\$103,000	\$103,000
20034	Impact Of Flow Regulation On Riparian Cottonwood Ecosystems	BioQuest International Consulting Ltd.	Fund	3	Disagree-fund; strongly recommend		\$148,034
Kootenai							
20517	Libby Fisheries Mitigation	MDFWP	na	3	Umbrella Proposal		\$0
20028	Purchase Conservation Easement from Plum Creek Timber Company along Fisher	MDFWP	Fund	2	Agree-fund (Tier 1?)	\$250,000	\$500,000
8346700	Mitigation For The Construction And Operation Of Libby Dam	MDFWP	Fund in Part	1	Partially agree-fund in part	\$500,000	\$500,000
9401001	Mitigation For Excessive Drawdowns At Libby Reservoir	MDFWP and the Confederated Salish and Kootenai Tribes	DNF	1	Disagree-DNF	\$377,971	\$377,971
20005	West Fisher Watershed Restoration	USDA Forest Service	DNF	3	Agree-DNF	\$0	\$288,112
20008	Monitor And Protect Wigwam River Bull Trout For Kooconusa Reservoir	British Columbia Ministry of Environment, Lands and Parks	Fund for 1 YR	1	Agree-fund	\$60,000	\$60,000
20009	Fertilization Of Kootenay Lake And Arrow Reservoir	B.C. Ministry of Environment, Lands and Parks	DNF	2	Disagree-DNF		\$175,000
20049	Evaluate Sediment Transport In Spawning Habitat, Kootenai R., Idaho	U.S. Geological Survey	DNF	1	Disagree-DNF	\$96,550	\$96,550
9404900	Improve The Kootenai River Ecosystem	Kootenai Tribe of Idaho	Fund in Part	1	Partially agree-fund in part	\$270,000	\$300,000
9608720	Focus Watershed Coordination-Kootenai River Watershed	MDFWP and the Confederated Salish and Kootenai Tribes	Fund for 1 YR	1	Agree-fund	\$99,919	\$99,919
8806400	Kootenai River White Sturgeon Studies And Conservation Aquaculture	Kootenai Tribe of Idaho	Fund in Part	1	Partially agree-fund in part	\$1,150,202	\$2,750,202
8806500	Kootenai River Fisheries Recovery Investigations	Idaho Department of Fish and Game	Fund in Part	1	Partially agree-fund in part	\$616,596	\$616,596

Lower Snake Subregion

Lower Snake Mainstem

The Lower Snake mainstem subbasin extends from Hells Canyon Dam about 250 miles to the confluence with the Columbia River. The uppermost portion of the subbasin lies within the Hells Canyon National Recreation Area. The primary limiting factors for salmonid production in the Lower Snake mainstem subbasin are loss of spawning and rearing habitat related to reservoir development, passage losses of both juveniles and adults at the four mainstem dams, and an altered hydrograph (including elevated temperature effects) below Hells Canyon Dam.

Species targeted for management in the subbasin include fall, spring, and summer chinook salmon and summer steelhead. Snake basin coho salmon went extinct in 1986, however, reintroductions have recently been initiated. White sturgeon is a species of special concern. Pacific lamprey have also garnered recent concern. Management actions in the subbasin include a broad range of artificial production activities, such as supplementation of fall chinook, juvenile acclimation release facilities, and development of captive broodstock programs. Many of these are supported through the Lower Snake River Compensation Program administered by the U. S. Fish and Wildlife Service. Passage improvements at the four federal mainstem dams, such as the prototype surface collector at Lower Granite, are being administered by the U. S. Army Corps of Engineers.

In the Lower Snake subbasin, 23 projects, including three umbrella proposals, were submitted for funding review (Table 19). They represented a broad mix of project types including four projects focused on inventories or assessments of natural populations, seven projects related to habitat restoration (sediment and temperature control, riparian enhancement, watershed projects, and irrigation diversion screens), and two sturgeon projects. Of the 20 projects requesting funding, the ISRP and CBFWA agreed on funding recommendations on 14 projects. We disagreed on six proposals.

The ISRP recommended funding for Project 20102, which CBFWA placed in Tier 2. This is an outstanding proposal, with a strong scientific basis, which should be given the highest priority for funding. This is a new proposal by an interdisciplinary group at Oregon State University and the University of Oregon to explore new habitat restoration protocols. The principal investigators are well qualified to take on the work, and it is certainly true that restoration activities have not been well focused in that past. The panel was especially impressed that the proposal is based on a pilot project (unfunded, at least by BPA). This proposal is also notable because it examines (actually measures) the responses of streams, fish, and other biota to restoration. Most restoration efforts measure inputs (miles of fence etc.) rather than consequences.

The ISRP recommended partial funding for Project 20063, which would evaluate the effects of catch and release angling on the stress physiology, reproductive physiology, and mortality of white sturgeon in laboratory and field studies. The panel viewed the catch and release portion of the project favorably – so long as it were conducted at an alternative location (e.g., below Bonneville) where there are more fish. The information acquired from such a study could be

highly useful in the regulatory environment, and in particular, for determining the extent to which controls on the recreational fishery are desirable or necessary.

The ISRP recommended delaying funding for Project 20024 until deficiencies are corrected. Objectives 2, 3, and 6 might be technically and programmatically justified, and a revised proposal that addressed only these elements might be fundable. This is a proposal for new work to assess sedimentation of fall chinook redds and estimate outmigration of subyearlings.

Finally, the ISRP recommended against funding for three projects (20036, 20016, and 20018) that CBFWA placed in Tier 2. The ISRP found the first two to be scientifically inadequate and the latter proposal to lack clearly defined objectives.

Idaho Supplementation Studies

The Idaho supplementation studies umbrella proposal described the various supplementation projects and their linkages (Table 19). Few results to date were presented in either the umbrella or the individual projects, in spite of the long funding duration of some projects. A significant contribution of the umbrella could have been a discussion of the strengths, weaknesses, and uncertainties of the supplementation program in terms of the progress made thus far.

Of the 12 projects requesting funding, the ISRP and CBFWA agreed on funding recommendations on nine projects (Table 19). The ISRP recommended that funding be delayed on Project 9107300 until the project is subjected to a comprehensive independent peer review. The project is large and multi-faceted and would benefit from a clearer description of its major components, including better alignment of tasks with objectives. The ISRP recommended against funding projects 20079 and 20080, which were both technically inadequate.

Table 19. Comparison of ISRP and CBFWA rankings of projects proposed for the Lower Snake Mainstem.

ProjectID	Title	Sponsor	ISRP Recommend	CBFWA Tier	ISRP Comparison to CBFWA	FY2000 CBFWA Rec.	FY2000 Sponsor Request
Lower Snake Mainstem and Multi-subbasin							
20533	Multi-Year Lower Snake River Mainstem Anadromous Fish Plan	Columbia Basin Fish & Wildlife Authority	na	na	Umbrella Proposal		\$0
20541	Snake River Fall Chinook Salmon Studies (Umbrella Proposal)	Nez Perce Tribe, USFWS, USGS, NMFS	na	na	Umbrella Proposal		\$0
9403400	Assessing Summer And Fall Chinook Restoration In The Snake River Basin	Nez Perce Tribe	Fund for 1 YR	1	Agree-fund	\$316,822	\$316,822
9801003	Spawning distribution of Snake River fall chinook salmon	U.S. Fish and Wildlife Service	Fund in Part	1	Partially agree-fund in part	\$177,666	\$182,666
9801004	M&E Of Yearling Snake R. Fall Chinook Released Upstream Of Lower Granite	Nez Perce Tribe	Fund for 1 YR	1	Agree-fund	\$272,798	\$272,798
9801005	Pittsburg Landing,Capt. John Rapids, Big Canyon Acclimation Facilities	Nez Perce Tribe	Fund for 1 YR	1	Agree-fund	\$654,400	\$686,000
20036	Evaluate bull trout movements in the Tucannon and Lower Snake rivers.	U.S. Fish and Wildlife Service	DNF	2	Disagree-DNF	\$107,164	\$111,164
20142	Snake River Temperature Control Project, Phase III	Columbia River Inter-Tribal Fish Commission, University of Idaho, Oregon Graduate Institute	DNF	3	Agree-DNF		\$564,491
9700900	Evaluate Rebuilding The White Sturgeon Population In The Lower Snake Basin	Nez Perce Tribe	Fund in Part	1	Partially agree-fund in part	\$409,494	\$419,494
9202409	Enhance Conser. Enforcement For Fish & Wildlife,Watersheds Of The Nez Perce	Nez Perce Tribe	Fund for 1 YR	1	Agree-fund		\$425,236
20051	Decrease Sedimentation And Temp. In Streams, Educate Resource Managers	Oregon State University	DNF	3	Agree-DNF		\$882,877
20053	Anadromous Salmonid Transit System	Morrison-Knudsen Corp	DNF	3	Agree-DNF		\$698,523
20085	Analyze And Improve Fish Screens	Nez Perce Tribe	DNF	3	Agree-DNF		\$129,141
20102	Research/Evaluate Restoration Of Ne Ore Streams And Develop Mgmt Guidelines	Oregon State University and University of Oregon	Fund	2	Disagree-fund; strongly recommend		\$309,936

20016	Snake River Steelhead Hooking Mortality Study	Washington Department of Fish and Wildlife	DNF	2	Disagree-DNF		\$117,240
20063	Evaluate Effects Of Catch And Release Angling On White Sturgeon	USGS, Idaho Department of Fish and Game	Fund in Part	3	Disagree-fund in part		\$271,486
20530	Multi-Year Tucannon Anadromous Fish Plan	Columbia Basin Fish & Wildlife Authority	na	na	Umbrella Proposal		\$0
20020	Tucannon River Spring Chinook Captive Broodstock Program	Washington Department of Fish and Wildlife	Fund for 1 YR	1	Agree-fund	\$134,049	\$283,538
20024	Evaluate Fall Chinook Natural Production and Spawning Habitat Conditions in	Washington Department of Fish and Wildlife	Delay Funding	2	Disagree-until corrected		\$120,687
9401805	Continued Implementation Of Asotin Creek Watershed Projects	Asotin County Conservation District	Fund for 1 YR	1	Agree-fund	\$235,000	\$239,000
9401806	Implement Tucannon River Watershed Plan To Restore Salmonid Habitat	Columbia Conservation District	Fund for 1 YR	1	Agree-fund	\$253,000	\$330,000
9401807	Continue With Implementation Of Pataha Creek Model Watershed Projects	Pomeroy Conservation District	Fund for 1 YR	1	Agree-fund	\$120,000	\$212,995
20018	Tucannon River and Asotin Creek Riparian Enhancement	Washington Department of Fish and Wildlife	DNF	2	Disagree-DNF		\$134,051
Idaho Supplementation Studies and Related Proposals							
20545	Idaho Supplementation Studies - Umbrella Proposal	Idaho Department of Fish and Game	na	na	Umbrella Proposal		\$0
8909800	Idaho Supplementation Studies	Idaho Department of Fish and Game	Fund for 1 YR	1	Agree-fund	\$974,229	\$974,229
8909801	Evaluate Salmon Supplementation in Idaho Rivers (ISS)	U.S. Fish and Wildlife Service	Fund for 1 YR	1	Agree-fund	\$129,965	\$129,965
8909802	Evaluate Salmon Supplementation Studies In Idaho Rivers	Nez Perce Tribe	Fund for 1 YR	1	Agree-fund	\$377,455	\$377,455
8909803	Evaluate Salmon Supplementation Studies In Idaho Rivers	Shoshone-Bannock Tribes	Fund for 1 YR	1	Agree-fund	\$228,438	\$228,438
20080	Evaluate a Modified Feeding Strategy to Reduce Residualism and Promote Smol	U.S. Fish and Wildlife Service	DNF	1	Disagree-DNF	\$146,800	\$168,050
8909600	Monitor and evaluate genetic characteristics of supplemented salmon and ste	National Marine Fisheries Service	Fund	1	Agree-fund	\$175,000	\$249,300
9005500	Steelhead Supplementation Studies in Idaho Rivers	Idaho Department of Fish and Game	Fund in Part	1	Partially agree-fund in part	\$407,744	\$560,744
9107300	Idaho Natural Production Monitoring And Evaluation	Idaho Department of Fish and Game	Delay Funding	1	Disagree-until corrected	\$767,512	\$767,512

20079	Assessing Adult Steelhead Escapement & Genetics In The South Fork Salmon	Nez Perce Tribal Fisheries/Watershed Program	DNF	1	Disagree-DNF	\$175,000	\$278,481
9901800	Characterize and quantify residual steelhead in the Clearwater River, Idaho	U.S. Fish and Wildlife Service	Fund	1	Agree-fund	\$84,365	\$84,365
Lower Snake Captive Broodstock Proposals							
9606700	Manchester Spring Chinook Broodstock Project	National Marine Fisheries Service	Fund	1	Agree-fund	\$450,000	\$500,000
9703800	Preserve Listed Salmonid Stocks Gametes	Nez Perce Tribe	Fund in Part	1	Partially agree-fund in part	\$185,122	\$185,122

Clearwater Subbasin

The Clearwater subbasin in north-central Idaho covers 9,645 square miles and is the source of approximately one-third of the flow of the Snake River at its mouth. The flow of the river is controlled by Dworshak Dam, which blocks anadromous fish access to the North Fork of the Clearwater River. Most (85%) of the subbasin is coniferous forest, while the remainder is rolling high prairie. The federal government owns almost 2/3 of the basin, most of which is administered by the USFS. Salmonid production in the Clearwater subbasin has been affected both by dam construction (Dworshak being most significant) and by land use that has degraded habitat. The most significant land use activities that have caused habitat degradation are logging, mining, and livestock grazing. These activities have resulted in effects such as sedimentation, lack of large woody debris, a decrease in the number and size of pools, and elevated summertime temperatures to a greater or lesser extent throughout the basin. In total, the result has been habitat fragmentation, and degradation of water quality which have reduced adult pre-spawning survival and over-winter survival.

The 23 proposals submitted for FY2000 support fall into four broad groups (Table 20): Hatchery/substitution (3 proposals), watershed restoration (13 proposals), surveys and population studies (5 proposals), dam impacts assessment (2 proposals). By dollar amount requested, the largest category is Hatchery/substitution (\$22.01M), of which \$20.19M is for the Nez Perce Tribal Hatchery. The largest category by number of proposals was watershed restoration, with 13 proposals requesting a total of \$2.65M.

ISRP recommended outright funding for only three proposals, with “do not fund” recommendations for seven proposals, and “delay funding” for the remaining 13 proposals. CBFWA, on the other hand, recommended Tier 1 funding for all but four of the 23 proposals. The main reason for ISRP’s much more negative reviews was failure of the proposals to indicate how they related to watershed-level programs, and to demonstrate utility at the watershed level. Furthermore, especially in the case of the watershed restoration projects, performance was generally indicated in terms of measurables like miles of fence, number of trees, miles of road retired, and so on, without evidence of thought being given to how the projects would improve fish habitat. Although the project teams may be convinced of the desirability of the specific tasks within the proposals, little or no effort was made to convince reviewers of the rationale being followed. This resulted in review comments like “there is a danger of the work becoming fragmented and including activities not directly related to restoration goals ...”; “the proposal makes the project appear [to be] just a rote application of supposed BMPs without knowing or understanding their effect.”; “Although elements of the proposals may be meritorious ... projects that do not appear to be integrated on a system-wide basis”, and so on. Another concern in the case of the watershed restoration studies was whether a previous watershed assessment had been carried out. In most cases, neither the specific proposals nor the umbrella proposal made this clear, even although the ISRP was able to determine in some cases that watershed assessments had in fact been conducted. However, given the absence of comments in the proposals about

how the projects related to priorities established in the watershed assessments, the coordination function of the watershed assessments appears to still be missing.

In the case of the watershed restoration (and some of the other, e.g., monitoring) proposals for which funding delays were recommended, the contingency in general was review of all component projects within the watershed by a visiting committee. The ISRP and its review panels did not find sufficient information in the proposals to assure adequate oversight and coordination. The proposals left the impression, in most cases, of fragmented efforts ongoing throughout the basin; coordination is needed to achieve and measure basin-level habitat improvements. Therefore, consistent with one of the major ISRP programmatic recommendations, none of the projects for which the recommendation was “delay funding” should be continued until a visiting committee can be constituted to conduct an on-site review. Such a review could be carried out over a 2-3 day period at a central location within the basin, and would include presentations by each of the project teams designed to address a set of questions to be formulated in advance by the visiting committee, and subsequent discussions with project leaders. Following these exchanges, the committee would issue a report recommending which, if any, projects should go forward, and on what conditions.

In the case of the Nez Perce Tribal Hatchery, the ISRP was concerned that the project is scientifically outdated, and would follow in the pathway of a technology that has largely failed the region. This would be a huge, and expensive, hatchery, and arguments that “innovative” approaches would improve the survival of released fish appear not to have been demonstrated scientifically. The many (50-some) Columbia River system hatcheries have failed to offset destruction of the basin’s fishery resources. Moreover, while the proposers claim that the hatchery would not impact populations of wild fish by keeping within natural “carrying capacities”, the reviewers commented that it would be difficult if not impossible to measure carrying capacity, and they were unconvinced that damage would not result to wild fish runs. Scientific reviews suggest that the days of large hatchery projects are past, and that this project does not merit the expenditure of public funds requested. Unless and until the project is better justified, and it can be demonstrated that wild stocks will not be negatively affected, this project should not go forward.

Of the proposals for surveys and population studies, two were recommended for funding by ISRP, and three were recommended not to be funded. Among the proposals for which funding was not recommended, two were ongoing projects that appeared to have lost sight of overall objectives. The fact that projects have been funded for many years is not in itself justification for continuation. In such cases, it appears that a new perspective or approach, is needed.

Finally, the quality of umbrella proposals was generally low. The umbrella proposals are the opportunity for proposers to make the case for linkages among projects within the basin. Failure to exploit this opportunity contributed to negative review comments regarding apparent absence of coordination.

Table 20. Comparison of ISRP and CBFWA rankings of projects proposed for the Clearwater Subbasin.

ProjectID	Title	Sponsor	ISRP Recommend	CBFWA Tier	ISRP Comparison to CBFWA	FY2000 CBFWA Rec.	FY2000 Sponsor Request
Clearwater							
20534	Multi-Year Clearwater Anadromous Fish Plan	Columbia Basin Fish & Wildlife Authority	na	na	Umbrella Proposal		\$0
8335000	Nez Perce Tribal Hatchery	Nez Perce Tribe	DNF	1	Disagree-DNF	\$14,590,000	\$20,188,949
8335003	Nez Perce Tribal Hatchery Monitoring And Evaluation	Nez Perce Tribe	DNF	1	Disagree-DNF	\$992,847	\$992,847
9501300	Nez Perce Tribe Resident Fish Substitution Program	Nez Perce Tribe	DNF	1	Disagree-DNF	\$750,000	\$850,000
9608600	Clearwater Subbasin Focus Watershed Program - Iscc	Idaho Soil Conservation Commission	Delay Funding	1	Disagree-until corrected	\$89,450	\$89,450
9706000	Clearwater Subbasin Focus Watershed Program - Npt	Nez Perce Tribe	Delay Funding	1	Disagree-until corrected	\$98,737	\$98,737
9901400	Restore Anadromous Fish Habitat In The Little Canyon Creek Subwatershed	Clearwater Focus Watershed Program - Idaho Soil Conservation Commission	Delay Funding	1	Disagree-until corrected	\$196,855	\$217,855
9901500	Restore Anadromous Fish Habitat In The Nichols Canyon Subwatershed	Clearwater Focus Watershed Program	Delay Funding	1	Disagree-until corrected	\$186,237	\$211,237
20557	Evaluate Bull Trout Population Status/N.F. Clearwater R. - Npt & Idfg	Nez Perce Tribe / Idaho Department of Fish and Game	na	3	Umbrella Proposal		\$0
20147	Evaluate Bull Trout Population Status/N.F. Clearwater R. - Npt	Nez Perce Tribe	DNF	2	Disagree-DNF		\$188,100
20148	Evaluate Bull Trout Population Status/N.F. Clearwater R - Idfg	Idaho Department of Fish and Game and Nez Perce Tribe	DNF	2	Disagree-DNF		\$154,920
20019	Evaluate Status Of Pacific Lamprey In Clearwater River Drainage, Idaho	Idaho Department of Fish and Game	Fund	1	Agree-fund	\$73,000	\$119,039

9303501	Enhance Fish, Riparian, And Wildlife Habitat Within The Red River Watershed	Idaho County Soil and Water Conservation District	DNF	1	Disagree-DNF	\$450,000	\$550,000
20084	Protect And Restore The North Lochsa Face Analysis Area Watersheds	Nez Perce Tribe	Delay Funding	1	Disagree-until corrected	\$154,782	\$204,782
20086	Rehabilitate Newsome Creek - S.F. Clearwater River	Nez Perce Tribe	Delay Funding	1	Disagree-until corrected	\$301,689	\$364,725
20087	Protect And Restore Mill Creek Watershed	Nez Perce Tribe	Delay Funding	1	Disagree-until corrected	\$63,036	\$63,036
9607708	Protect And Restore The Lolo Creek Watershed	Nez Perce Tribe	Delay Funding	1	Disagree-until corrected	\$203,750	\$203,750
9607709	Protect And Restore The Squaw To Papoose Creeks Watersheds	Nez Perce Tribe	Delay Funding	1	Disagree-until corrected	\$303,607	\$353,607
9607711	Restore Mccomas Meadow/ Meadow Creek Watershed	Nez Perce Tribe	Delay Funding	1	Disagree-until corrected	\$166,622	\$166,622
9901600	Protect & Restore Big Canyon Creek Watershed	Nez Perce Tribe	Delay Funding	1	Disagree-until corrected	\$61,276	\$61,276
9901700	Protect & Restore Lapwai Creek	Nez Perce Tribe	Delay Funding	1	Disagree-until corrected	\$61,276	\$61,276
8709900	Dworshak Dam Impacts Assessment and Fisheries Investigation	Idaho Department of Fish and Game	Fund	1	Agree-fund	\$285,000	\$285,000
8740700	Dworshak Impacts/M&E And Biological/Integrated Rule Curves	Nez Perce Tribe	Delay Funding	1	Disagree-until corrected	\$199,485	\$199,485
9501600	Genetic Inventory Of Westslope Cutthroat Trout In The N F Clearwater Basin	Nez Perce Tribe	DNF	1	Disagree-DNF	\$180,000	\$200,000
20156	Identification Of Redband And Rainbow Trout In The N F Clearwater Basin	Nez Perce Tribe	Fund	3	Disagree-fund, but not high priority		\$110,925

Salmon Subbasin

The Salmon River subbasin in central Idaho covers more than 14,000 square miles and is the second largest subbasin in the Columbia River after the Snake River subbasin. Major land uses in the subbasin are forestry, recreation, wilderness, mining, agriculture, and grazing. Primary constraints on salmonid production in the Salmon subbasin are related to habitat degradation and fragmentation resulting from mining and grazing activities. Irrigation diversions in the lower mainstems of tributaries, such as the Lemhi, Pashimeroi, East Fork and Little Salmon, result in dewatered habitat and increased water temperatures. Additionally, these problems have disconnected the once productive tributaries from the mainstem Salmon River. The diversions also act as impediments to adult migration and are sources of juvenile mortality.

Species targeted for management include fall, spring, and summer chinook salmon, summer steelhead (Group A and Group B) and sockeye salmon. Reintroduction efforts are underway for the extirpated coho salmon. Management actions in the subbasin focus on improving habitat and riparian areas, improving juvenile and adult passage at irrigation diversions, and various artificial production strategies, including supplementation and captive broodstock techniques, as well as conventional hatchery releases for harvest opportunities.

In the Salmon River subbasin, 20 proposals were submitted for review and funding consideration (19 project proposals and one umbrella proposal; Table 21). Of these, approximately half dealt with habitat, water quality, watershed issues, and irrigation diversion screenings. The remaining proposals addressed captive broodstock issues for Redfish Lake sockeye, an initial Salmon River chinook broodstock project, and several population and passage assessment proposals (Table 21).

The ISRP recommended funding for eight of the projects, one-year funding for three projects, one fund-in-part project, delayed funding for three projects until deficiencies are corrected, and no funding for four projects. The umbrella proposal did not request funds.

The ISRP agreed with CBFWA on the eight proposals we recommended for funding. All were placed in Tier 1 by CBFWA. Of the four proposals we recommended against funding, we agreed with CBFWA on only one (20055). CBFWA placed it in Tier 3. We disagreed with CBFWA on the other three proposals; we recommended against funding these (9705700, 20017, and 9901900), which CBFWA placed in Tier 1. Interestingly, in spite of CBFWA's Tier 1 placement of these three proposals, CBFWA's technical review group identified major technical problems with all three proposals. Their assessment agrees with the ISRP assessment.

Project 9705700 is directed toward developing "low-tech" and "natural" methods of artificial propagation. The ISRP and the CBFWA technical review group agreed on the deficiencies of this project proposal. Description is lacking of any results of previous

funding in 1996-98. The proposal requires greater detail in its methods and clearly stated objectives with provisions for monitoring and evaluation of results before funding can be approved.

Project 20017 intends to develop a channel restoration design for a portion of the Yankee Fork, a tributary to the main Salmon River. The CBFWA technical evaluation mirrored the ISRP's and noted that the project planning was not completed and the proposal "...does not describe biological objectives or milestones. ... Monitoring plan is inadequate." Both CBFWA and ISRP reviewers consider the submittal deficient in sound scientific principle and lacking in clearly defined objectives, particularly in advancing provisions for monitoring and evaluation.

Project 9901900 proposes to alter stream banks along 12 miles of the Salmon River near Challis, Idaho. There is no documentation why this reach is critical or more critical than other areas. ISRP and CBFWA reviewers agreed the proposal falls short of establishing sound scientific principles and demonstrating clear benefits to fish and wildlife. The proposal lacks enough detail to adequately review the project. Sections 3 and 4 are incomplete and details of an effective monitoring plan are absent.

The ISRP also disagreed with CBFWA on three proposals (9604300, 9107100, and 9600700) for which we recommended delaying funding until specific deficiencies are corrected. CBFWA placed the proposals in Tier 1, although CBFWA's technical review group identified major technical problems with all three proposals. Their assessment agrees with the ISRP assessment.

Project 9604300 proposes to implement and monitor a supplementation program to recover native summer chinook salmon in Johnson Creek, a Salmon River tributary. The proposal was very well written and includes well-qualified project personnel. However, the proposal does not convince the reviewers that this is the best location for this activity relative to other locations in the Salmon River basin. It may be, but this is not described in enough detail. Consequently, the ISRP recommended delaying funding until clear scientific evidence is provided that this project is a high priority in the Salmon River drainage.

Project 9107100 proposes to implement and monitor whole-lake fertilization in Stanley Basin lakes to augment juvenile sockeye and kokanee growth. The ISRP recommended delaying funding until the project describes that a risk assessment has been done pertaining to risks associated with altering food web structure. In addition, if funded, this project needs careful annual review with better reporting on results.

Project 9600700 proposes to consolidate irrigation diversions and improve fish screens. The ISRP recommended delaying funding until they can demonstrate that the water saving will be secured for instream use, through filing of instream water rights and monitoring of those rights.

Table 21. Comparison of ISRP and CBFWA rankings of projects proposed for the Salmon Subbasin.

ProjectID	Title	Sponsor	ISRP Recommend	CBFWA Tier	ISRP Comparison to CBFWA	FY2000 CBFWA Rec.	FY2000 Sponsor Request
Salmon River Subbasin							
20535	Multi-Year Salmon Anadromous Fish Plan	Columbia Basin Fish & Wildlife Authority	na	na	Umbrella Proposal		\$0
9700100	Captive Rearing Initiative for Salmon River Chinook Salmon	Idaho Department of Fish and Game	Fund in Part	1	Partially agree-fund in part	\$546,385	\$546,385
9705700	Salmon River Production Program	Shoshone-Bannock Tribes	DNF	1	Disagree-DNF	\$931,376	\$931,376
9604300	Johnson Creek Artificial Propagation Enhancement Project	Nez Perce Tribe	Delay Funding	1	Disagree-until corrected	\$2,800,000	\$2,800,000
9102800	Monitoring Smolt Migrations of Wild Snake River Sp/Sum Chinook	National Marine Fisheries Service	Fund	1	Agree-fund	\$325,200	\$385,200
9703000	Monitor Listed Stock Adult Chinook Salmon Escapement	Nez Perce Tribal Fisheries/Watershed Program	Fund	1	Agree-fund	\$156,122	\$163,122
9902000	Analyze the Persistence and Spatial Dynamics of Snake River Chinook Salmon	U.S. Forest Service	Fund	1	Agree-fund	\$50,000	\$103,850
20055	Evaluate A Mark-Resight Survey For Estimating Numbers Of Redds	U.S. Forest Service	DNF	3	Agree-DNF		\$43,050
9107200	Redfish Lake Sockeye Salmon Captive Broodstock Program	Idaho Department of Fish and Game	Fund	1	Agree-fund	\$680,096	\$680,096
9204000	Redfish Lake Sockeye Salmon Captive Broodstock Rearing And Research	National Marine Fisheries Service	Fund	1	Agree-fund	\$475,000	\$500,000
9107100	Snake River Sockeye Salmon Habitat And Limnological Research	Shoshone-Bannock Tribes	Delay Funding	1	Disagree-until corrected	\$427,000	\$438,461
9202603	Idaho Model Watershed Administration/Implementation Support	Idaho Soil Conservation Commission	Fund for 1 YR	1	Agree-fund	\$185,400	\$185,400
9401700	Idaho Model Watershed Habitat Projects	Lemhi and Custer Soil and Water Conservation Districts	Fund for 1 YR	1	Agree-fund	\$400,000	\$400,000

9306200	Salmon River Anadromous Fish Passage Enhancement	Lemhi and Custer Soil and Water Conservation Districts	Fund for 1 YR	1	Agree-fund	\$100,000	\$100,000
9401500	Idaho Fish Screen Improvement - O&M	Idaho Department of Fish and Game	Fund	1	Agree-fund	\$1,000,000	\$1,000,000
9405000	Salmon River Habitat Enhancement M&E	Shoshone-Bannock Tribes	Fund	1	Agree-fund	\$245,000	\$245,000
20017	Restore Habitat Within Dredge Tailings On The Yankee Fork Salmon River	Shoshone-Bannock Tribes, IDFG, USFS	DNF	1	Disagree-DNF	\$65,000	\$207,260
20032	Protect Bear Valley Wild Salmon, Steelhead, Bull Trout Spawning Habitat	Shoshone Bannock-Tribes and IDFG	Fund	1	Agree-fund	\$310,000	\$310,000
9901900	Restore the Salmon River, in the Challis, ID area, to a healthy condition	Custer County Watershed Group	DNF	1	Disagree-DNF	\$50,000	\$50,000
9600700	Irrigation Diversion Consolidations & Water Conservation; Upper Salmon R	Lemhi County Soil & Water Conservation District	Delay Funding	1	Disagree-until corrected	\$293,113	\$753,816

Grande Ronde and Imnaha Subbasins

The Grande Ronde and Imnaha Rivers are tributaries of the Snake River, located in northeast Oregon, below Hells Canyon Dam, but affected by federal dams in the mainstem of the Lower Snake. The Grande Ronde subbasin includes approximately equal portions of federal (USFS) and private lands, with land use including irrigated cropland, timber, grazing, and recreation. Primary constraints on salmonid production in the Grande Ronde subbasin are caused by water quality and quantity: low flows, elevated temperatures, pollutants, and sedimentation result in poor conditions for juvenile rearing and migration and for spawning. In addition, riparian degradation and channelization have resulted in habitat fragmentation. The Imnaha subbasin is relatively remote, with 75% of the land within the Wallowa Whitman National Forest. Private land lower in the subbasin is used primarily for grazing and hay production. Water quality and quantity in the subbasin are generally considered sufficient for anadromous fish production. The subbasin has been affected by moderate levels of logging, road building, mining, farming, ranching and livestock practices, although the impacts are not thought to be major limiting factors on fish production.

Species targeted for management in the Grande Ronde and Imnaha subbasins include fall and spring chinook salmon, and summer steelhead, along with reintroduction plans for extirpated coho salmon and sockeye salmon. Management actions in the subbasins include habitat restoration, coordination of habitat enhancement efforts, and a broad range of artificial production activities, including both captive and conventional broodstock techniques.

The ISRP reviewed 19 proposals that requested funding for work in the Grande Ronde and Imnaha Subbasins (Table 22). These were accompanied by four umbrella proposals, describing the Grande Ronde and the Imnaha Multi-year Anadromous Fish Plans, the Grande Ronde Endemic Spring Chinook Program, and the Grand Ronde River Basin Program. The proposals from the Grande Ronde and Imnaha were in the general areas of anadromous fish (8), emphasizing hatchery-related work and including captive broodstock programs, habitat and watershed councils (5), and wildlife (4). One proposal was for research on how a particular irrigation practice would affect stream temperature, and one was for funding for a cultural resource survey. The ISRP recommended that 14 of the 19 proposals should be funded, but recommended nine of these 14 be funded for one year only, during which time specific problems should be addressed, and that one of the 14 be funded only after specific missing information was supplied. Additionally, the ISRP recommended that one proposal (9403900) be funded as an administrative cost of another proposal (9702500). Two proposals for the Northeast Oregon Hatchery plan (8805301 and 8805305), one proposal to establish a wildlife mitigation trust fund (20130), and the proposal for research on irrigation and stream temperature (20133) were not recommended for funding by the ISRP. The ISRP offered no recommendation about the proposal to fund a cultural resource survey (20129), which concerned an administrative funding issue rather than issues of science. CBFWA recommended 16 of the 19 proposals for funding at Tier 1 and recommended against funding three proposals.

Anadromous Fish Proposals

Four proposals were for the Grande Ronde Endemic Spring Chinook Supplementation Program (9800702, 9800703, 9801001, and 9801006), which involves a captive broodstock program (Table 22). The reviewers noted that captive brood programs should be viewed and implemented with caution, and that these efforts can be successful only over relatively short time periods and when accompanied by remediation of the root causes of low population levels (e.g., habitat, passage). However, they observed that this captive brood program is underway, includes provisions for monitoring of outcomes, and includes some baseline (presupplementation) data. Thus, it is a useful pilot study and test case. The ISRP recommended funding for all four proposals, pending provision of critical missing details on data collection and analysis, as well as budget clarification, for one. The reviewers also specified that the projects should be subject to annual review of results.

The Imnaha River Smolt Monitoring Program (8712703) was recommended for funding and found suitable for multi-year review, with the qualification that one vaguely noted element, transformation of trapping facilities into permanent facilities, should not be implemented without review of a direct proposal that explained and justified the work. A study of life history of spring chinook and summer steelhead (9202604) received high ratings for scientific quality and programmatic value, and was recommended for funding and for multi-year review.

The two Northeast Oregon Hatchery planning proposals (8805303, 8805301) were not recommended by the ISRP for funding. Reviewers found these proposals to be vague and lacking in critical detail about rationale for the work. Both seem to assume that hatcheries must be planned and built, with neither giving a strong rationale for the role and value of those hatcheries. The proposals lacked a sound scientific foundation and did not make a strong argument that they would be of benefit to fish. The two proposals together requested just under \$1.9 million for FY2000.

Habitat Proposals

The five habitat proposals (8402500, 9202601, 9608300, 9403900, 9702500) all were recommended for funding for one year (Table 22). Generally, these proposals all lacked adequate monitoring and evaluation plans and several need to give more detail on methods of habitat restoration or subproject prioritization. Subsequent proposals should address these shortcomings.

Wildlife Proposals

Four proposals were for acquisition or management of land for wildlife mitigation, with two being for alternative funding mechanisms for the same project (Table 22). The ISRP recommended three (980800, 20112, and 20114) for funding for 1 year. All of these had many positive aspects and appeared to be of value to wildlife, however, all lacked adequate monitoring and evaluation and did not give needed detail to justify methods of

land enhancement or restoration. The ISRP recommended against funding a proposal to establish a trust fund for the Northeast Oregon Wildlife Mitigation project (20130), but recommended funding for one year for that project under another mechanism (9608000); subsequent proposals for the work should include better description and justification of management and monitoring/evaluation plans.

Table 22. Comparison of ISRP and CBFWA rankings of projects proposed for the Grande Ronde and Imnaha Subbasins.

ProjectID	Title	Sponsor	ISRP Recommend	CBFWA Tier	ISRP Comparison to CBFWA	FY00 CBFWA Rec.	FY00 Sponsor Request
Grande Ronde and Imnaha							
20531	Multi-Year Grande Ronde Anadromous Fish Plan	Columbia Basin Fish & Wildlife Authority	na	na	Umbrella Proposal		\$0
20556	Grande Ronde Endemic Spring Chinook Supplementation Program Umbrella		na		Umbrella Proposal		\$0
9800702	Grande Ronde Supplementation - O&M/M&E - Nez Perce Tribe Lostine	Nez Perce Tribe	Fund	1	Agree-fund	\$384,800	\$430,929
9800703	Facility O&M And Program M&E For Grande Ronde Spring Chinook Salmon	Confederated Tribes of the Umatilla Indian Reservation	Delay Funding	1	Disagree-until corrected	\$489,000	\$597,516
9801001	Grande Ronde Basin Spring Chinook Captive Broodstock Program	Oregon Department of Fish and Wildlife	Fund	1	Agree-fund	\$616,097	\$646,097
9801006	Captive Broodstock Artificial Propagation	Nez Perce Tribal Fisheries/Watershed Program	Fund for 1 YR	1	Agree-fund	\$131,031	\$146,031
8805301	Northeast Oregon Hatchery Master Plan	Nez Perce Tribe	DNF	1	Disagree-DNF	\$1,217,017	\$1,217,017
20512	Grand Ronde River Basin Umbrella	Oregon Department of Fish and Wildlife	na	na	Umbrella Proposal		\$0
8805305	Northeast Oregon Hatcheries Planning And Implementation - Odfw	ODFW	DNF	1	Disagree-DNF	\$226,000	\$660,422
9202604	Life History Of Spring Chinook Salmon And Summer Steelhead	ODFW	Fund	1	Agree-fund	\$700,000	\$797,616
8402500	Protect And Enhance Anadromous Fish Habitat In Grande Ronde Basin Streams	ODFW	Fund for 1 YR	1	Agree-fund	\$273,000	\$366,782
9202601	Grande Ronde Model Watershed Program	Grande Ronde Model Watershed Program	Fund for 1 YR	1	Agree-fund	\$930,000	\$930,000
9608300	Ctuir Grande Ronde Basin Watershed Restoration	Confederated Tribes of the Umatilla Indian Reservation	Fund for 1 YR	1	Agree-fund	\$125,000	\$250,000

9403900	Wallowa Basin Project Planner	Nez Perce Tribe	Fund for 1 YR	1	Agree-fund, fold into other NPT projects	\$55,313	\$58,035
9702500	Implement The Wallowa County/Nez Perce Tribe Salmon Habitat Recovery Plan	Nez Perce Tribe	Fund for 1 YR	1	Agree-fund	\$20,000	\$50,000
20130	Northeast Oregon Mitigation Trust Fund	Nez Perce Tribe	DNF	3	Agree-DNF		\$4,500,000
9608000	Northeast Oregon Wildlife Mitigation Project	Nez Perce Tribe	Fund for 1 YR	1	Agree-fund	\$235,325	\$235,325
20112	Securing Wildlife Mitigation Sites - Oregon, Wenaha Wma Additions	ODFW	Fund for 1 YR	1	Agree-fund	\$42,302	\$142,302
20114	Securing Wildlife Mitigation Sites - Oregon, Ladd Marsh WMA Additions	ODFW	Fund for 1 YR	1	Agree-fund	\$144,637	\$360,637
20133	Irrigation as a Management Tool for Stream Temperature	Oregon State University	DNF	3	Agree-DNF		\$81,444
20129	Dworshak Mitigation Cultural Resource Survey Project	Nez Perce Tribe	na	3	na		\$45,000
20532	Multi-Year Imnaha Anadromous Fish Plan	Columbia Basin Fish & Wildlife Authority	na	na	Umbrella Proposal		\$0
8712703	Imnaha River Smolt Monitoring Program Project	Nez Perce Tribe	Fund	1	Agree-fund	\$188,722	\$188,722

Upper Snake Subbasins

The Upper Snake subregion includes the Snake River and its tributaries from the Hells Canyon Dam to the headwaters. The 72,300 square mile subregion includes the Palouse, Weiser, Payette, Malheur, Boise, Owyhee, and Upper Snake Mainstem subbasins. The Upper Snake is entirely above Hells Canyon Dam. Native resident fish targeted for active management include bull trout, redband trout, cutthroat trout, and white sturgeon. The primary goal of management actions is “to protect, enhance, and restore, where needed, these fish in their historic habitat.” A secondary goal is “to provide fisheries and harvest opportunities of native fisheries and also of introduced game fish where native fisheries have been irrevocably altered.” The wildlife mitigation goal is to fully mitigate for losses due to construction and operation of the hydroelectric projects in the subregion, which total 66,841 habitat units, slightly more than half of which are associated with the Palisades hydroproject. Riparian/riverine and wetlands habitat are given the highest wildlife mitigation priorities in the subregion. Management of habitat and harvest, as well as artificial production (supplementation) have been used to maintain fish production. Maintaining and enhancing native populations is said to have highest priority, but game fish such as bass, crappie, catfish, and hatchery trout have been introduced to support fisheries.

Twenty-one proposals were submitted for funding of work in the Upper Snake subregion (Table 23). The proposals were from the Upper Snake Mainstem (7), the Malheur (5), and the Owyhee (9) subbasins. The Upper Snake proposals were in the general areas of resident fish (12), wildlife (4), and habitat (2). One proposal was for work with anadromous fish. Two proposals (20136 and 20536) were for administrative positions associated with work described by one or more of the other topical proposals.

The ISRP recommended funding for 15 of the 21 proposals, but recommends that 11 of these be funded for one year only and specific shortcomings of those 11 proposals be addressed in the next submission. Additionally, the ISRP recommended that two of these proposals (20136 and 20536) be funded as administrative costs of other proposals that described the actual work to be supported. One proposal (9500600) was recommended for funding only in part by the ISRP. The ISRP recommended against funding four proposals. Of these, CBFWA recommended 13 for funding at Tier 1 and one for funding at Tier 2.

Upper Snake Mainstem proposals

This subbasin is located above Hells Canyon Dam in Idaho and covers an area from southeastern Oregon to western Wyoming that includes small portions of northern Nevada and Utah. Many dams have affected this subbasin, and the natural seasonal hydrograph has been replaced by controlled flow regimes. The physical and chemical nature of the mainstem Snake is greatly altered by dam construction, damaging populations of Yellowstone cutthroat trout, whitefish, and bull trout. Genetic introgression with nonnative fishes also has damaged native fish populations.

Management objectives include restoring spawning areas and passage, restoration of stream and riparian habitat, and reintroduction of native species to restored habitat.

Seven proposals were received for work in the Upper Snake subbasin, one for wildlife mitigation (9505700), one for a constructed wetland (20091), and five for resident fish and habitat work (Table 23). Two of these were from the Shoshone-Bannock Tribes for linked work on habitat and resident fish. One of these (9201000) received high ratings from reviewers and was recommended for funding on the quality of the proposal and of the reported results to date. The other (9500600) was recommended for funding in part. The supported objectives involved resident fish and habitat survey work and were well-justified scientifically. The proposal also included four objectives concerning development of a hatchery and fish-stocking program. These objectives were not found to be scientifically sound. In part, they could not be justified before doing the survey work addressed by the other four objectives. Further, these four objectives include many unconsidered risks. Overall, the hatchery objectives are poorly described, poorly justified, and premature. The other three resident fish proposals were for a sturgeon fishery (20135), the Idaho Water Rental project (9106700), and assessment of Snake River salmonids (9800200). The first two of these were not recommended for funding. Both of these proposals had serious scientific deficiencies, lacking adequate detail in many important areas, as detailed in the project reviews. Neither gave convincing evidence that they were of likely benefit to fish or wildlife. The Snake River salmonid survey proposal was clearly rationalized and presented, was perceived as of high value, and was recommended for funding with a multi-year review. The wildlife mitigation proposal was recommended for funding for one year, after which a detailed monitoring and evaluation plan should be included. The constructed wetland was not supported for funding, because the proposal lacked critical detail on the design and potential impacts of the wetland and because the proposal failed to give clear reason why BPA should fund this project as federal hydroproject mitigation.

Malheur proposals

Hydroprojects have eliminated anadromous fish and damaged native resident fish in the Malheur. The primary subbasin goal is protection, enhancement, and restoration of native resident fish in historic habitat, but provision of fisheries has been given a secondary priority and includes use of introduced game fish. The primary fish species targeted for management are bull and redband trout.

The five proposals from the Malheur include two for continuation of an ongoing research project on resident fish (9701900 and 9701901) and three new proposals for wildlife mitigation (20090, 20136, and 20137; Table 23). The two resident fish proposals were highly ranked by reviewers and are recommended for funding. The three wildlife proposals were also recommended for funding, but with one (20136) as an administrative cost of the others, one (20137) only after the value and cost-effectiveness of the purchase are justified, and one (20090) for one year, to allow the well-justified land purchase, after which a proposal for funding of land management requires presentation of a clear plan for monitoring and evaluation.

Owyhee proposals

Protection and enhancement of streams and rivers and of native resident fish are the management goals in this Subbasin, which includes many free-flowing and near pristine streams. The primary fish targeted for management are bull trout and redband trout. Only two projects are on-going in the Owyhee, and these involve use of hatchery-reared non-native game fish to increase harvest and trophy fisheries.

All nine proposals submitted from the Owyhee subbasin were from the Duck Valley Indian Reservation (DVIR); three were for continuation of ongoing work and six were new (Table 23). Five of the new proposals were for development of inventories of and management plans for fish and wildlife (20536, 20040, 20041, 20092, and 20094), and one (20093) was for evaluation of the feasibility of reintroducing anadromous fish into the Owyhee Basin. The ISRP found two of these proposals, 20093 and 20041, to be particularly innovative in approach, and was overall supportive of both the clear unmet need for mitigation in the Owyhee and the approach adopted in the six new proposals. These six proposals are for development of sampling and management plans to inventory and manage fish and wildlife resources, and they adopt the decision to hire consultants where outside expertise is needed to aid in development of scientifically sound plans. On this basis, the ISRP recommended funding of all six of the new proposals, but with 20536, which is for administrative support, folded into the other five proposals, as administrative costs of the actual work to be done. These proposals were recommended for funding for one year, to support project planning and development, after which more detailed and longer-term project plans should be described.

The three on-going proposals include two for fisheries (8815600 and 9501500) and one for habitat protection (9701100). A proposal for continuation of a fish stocking program (8815600) was recommended for funding for one year, largely on the basis of this being a continuing project. Reviewers were critical of the project's use of non-native stocks of fish, which they did not find to be adequately justified. Many substantial risks of the non-native stocking program were not considered in the proposal. A proposal for continued development of Lake Billy Shaw as a fishery (9501500) was not recommended for funding. The proposal was vague, lacking in detail, and overall lacking in scientific justification and scientific soundness. The proposal for habitat protection was recommended for funding for one year only, after which serious deficiencies in the proposal must be addressed for support to continue.

Table 23. Comparison of ISRP and CBFWA rankings of projects proposed for the Upper Snake Subregion.

Upper Snake							
ProjectID	Title	Sponsor	ISRP Recommend	CBFWA Tier	ISRP Comparison to CBFWA	FY00 CBFWA Rec.	FY00 Sponsor Request
20135	Consumptive Sturgeon Fishery-Hells Canyon And Oxbow Reservoirs	Nez Perce Tribe	DNF	1	Disagree-DNF	\$250,000	\$250,000
9201000	Habitat Restoration/Enhancement Fort Hall Reservation	Shoshone-Bannock Tribes	Fund	1	Agree-fund	\$132,821	\$132,821
9500600	Shoshone-Bannock/Shoshone Paiute Joint Culture Facility	Shoshone-Bannock Tribes	Fund in Part	1	Partially agree-fund in part	\$282,621	\$282,621
9505700	Southern Idaho Wildlife Mitigation	IDFG and Shoshone-Bannock Tribes	Fund for 1 YR	1	Agree-fund	\$1,153,964	\$4,334,510
9106700	Idaho Water Rental: Resident Fish And Wildlife Impacts - Phase III	Idaho Department of Fish and Game	DNF	1	Disagree-DNF	\$119,465	\$119,465
9800200	Snake River Native Salmonid Assessment	IDFG	Fund	1	Agree-fund	\$225,208	\$225,208
20091	Construct Warm Springs Wetland	Southwest Idaho Resource Conservation and Development Council, Inc.	DNF	3	Agree-DNF		\$47,200
Malheur							
20090	Logan Valley Wildlife Mitigation Project	Burns Paiute Tribe	Fund for 1 YR	1	Agree-fund		\$2,002,301
20136	Burns Paiute Mitigation Coordinator	Burns Paiute Tribe	Fund	3	Agree-DNF		\$50,494
20137	Acquisition Of Malheur Wildlife Mitigation Site.	Burns Paiute Tribe	Delay funding	1	Disagree-until corrected		\$2,030,079
9701900	Evaluate The Life History Of Native Salmonids In The Malheur Basin	Burns Paiute Tribe	Fund	1	Agree-fund	\$201,184	\$201,184
9701901	North Fork Malheur River Bull Trout And Redband Life History Study	Burns Paiute Tribe	Fund	1	Agree-fund	\$113,826	\$113,826
Owyhee							
20536	Develop Management Plan & Assess Fish & Wildlife - Owyhee Basin, D.V.I. R.	Shoshone-Paiute Tribes of the Duck Valley Indian Reservation	Fund for 1 YR	3	Agree fold into other DVIR proposals		\$133,820
20040	Develop A Fish & Wildlife Management Plan For The Owyhee Basin, D.V.I.R.	SPT -DVIR	Fund for 1 YR	3	Disagree-fund		\$22,411

20041	Develop A Fish & Wildlife Conservation Law Enforcement Plan, D.V.I.R.	SPT -DVIR	Fund for 1 YR	3	Disagree-fund		\$40,872
20092	Inventory Wildlife Species & Populations Of The Owyhee Basin, D.V.I.R.	SPT -DVIR	Fund for 1 YR	3	Disagree-fund		\$185,985
20093	Evaluate The Feasibility For Anadromous Fish Reintroduction In The Owyhee	SPT -DVIR	Fund for 1 YR	3	Disagree-fund		\$56,851
20094	Assess Resident Fish Stocks Of The Owyhee Basin, D.V.I.R.	SPT -DVIR	Fund for 1 YR	2	Agree-fund (Tier 1?)	\$200,000	\$220,799
8815600	Implement Fishery Stocking Program Consistent With Native Fish Conservation	SPT -DVIR	Fund for 1 YR	1	Agree-fund	\$119,903	\$129,903
9501500	Lake Billy Shaw Operations and Maintenance and Evaluation (O&M, M&E)	SPT -DVIR	DNF	1	Disagree-DNF	\$221,550	\$221,550
9701100	Enhance and protect habitat and riparian areas on the DVIR	SPT -DVIR	Fund for 1 YR	1	Agree-fund	\$294,722	\$294,722

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Review of the Columbia River Basin
Fish and Wildlife Program
for Fiscal Year 2000 as Directed by the
1996 Amendment of the Northwest Power Act

Report of the
Independent Scientific Review Panel
for the Northwest Power Planning Council

Volume II: Review and Recommendations
of Individual FY2000 Project Proposals

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Volume II: Review and Recommendations of Individual FY2000 Project Proposals

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Introduction

Volume II of the ISRP's review of FY2000 project proposals includes summaries of the reviews for each proposal. Each proposal review includes summaries of the Peer Review Group (PRG) comments and a consensus statement from the ISRP recommending for or against funding, based on criteria provided in the congressional language in the legislation that established the ISRP (i.e. The 1996 Power Act Amendment; see Section I.B in Volume I for amendment language).

It is the ISRP's intent that the recommendation specific to each project proposal in Volume II be viewed as equivalent to the boxed recommendations of Volume I. As such, they are formal ISRP recommendations to Council on FY2000 funding decisions.

Volume I includes a description of the process used by the ISRP to make use of the PRGs, and of the subsequent reviews by the ISRP as a whole to ensure consistency in the review process. While an overview is provided below, the reader is referred to Volume I for details.

ISRP Membership

The ISRP was appointed by the Council in December 1996 and is composed of eleven members with expertise in fisheries, ecology, genetics, statistics, wildlife, oceans, and natural resource economics. The ISRP review and the recommendations contained in Volumes I and II are the product of a consensus process. All the members agree with the descriptive text and the formal recommendations contained in the report.

Peer Review Group

This year's review made extensive use of the Peer Review Groups (PRG) as called for in the 1996 amendment. The Peer Review Groups consisted of scientists from within and outside the Columbia Basin appointed by the Council for the purpose of assisting the ISRP with proposal review. PRG members represented a broad spectrum of scientific and technical expertise from the academic and consulting communities, as well as from federal and state fisheries management agencies.

In this year's review (FY2000), we enlisted the aid of 27 Peer Review Group members, which enabled us to develop in-depth comments on each proposal. Importantly, as the review process proceeded, it became clear there was strong concordance between the reviews of independent PRG and ISRP members. Disagreements in relative ratings of proposals were rare, and similar comments were made by many reviewers. Indeed for many proposals that changed little if at all between the FY1999 and the FY2000 versions, the PRG review comments of this year were nearly identical to those of the ISRP from last year. The ISRP believes the strong concordance between results of the two review years is noteworthy. The concordance between the reviews from the two years provides support for the peer review process as a method of providing a consistent evaluative filter for proposals and projects within the region, one of the intents of the 1996 amendment to the Power Act that created the ISRP and this review process.

Review Process for FY2000 Proposals

With assistance from the PRGs, the ISRP reviewed 397 proposals requesting funding for FY2000. In addition, 37 umbrella proposals that did not request funding were added to this year's review process.

The review of individual project proposals consisted of six steps:

1. The Columbia Basin was divided into subregions (Volume I, Table 2). The order of projects in both volumes of our review is organized in increments of subregion, subbasin, relation to an umbrella proposal, and project focus (See Volume II, Index 1; Volume II, Index 2 lists proposals by project identification number).
2. Review teams (at least one ISRP member and two Peer Review Group members) were assigned to review all the proposals associated with specific geographical units (subregions and larger subbasins). Review teams were constituted to provide a full breadth of expertise, and individual review assignments were made in consideration of potential conflicts of interest. Each proposal was read and evaluated by at least three reviewers. Thus, each reviewer examined approximately 30 proposals.
3. Proposal evaluations were based on seven different sets of criteria developed in consultation with the ISAB including: a) watershed councils/model watersheds; b) information dissemination; c) operation and maintenance; d) new construction; e) research and monitoring; f) implementation and management; and g) wildlife habitat acquisitions. Generally, review criteria reflected both the standards outlined in the 1996 amendment and conventional standards for peer review. They included consistency with the FWP, demonstration of benefits to fish and wildlife, technical justification of the project, specific measurable objectives, adequate design and defensible techniques, adequate monitoring and evaluation, and coordination with similar projects. Proposals were assigned to one primary type of criteria. Reviewers scored each proposal using the criteria and made notes of other comments for group discussion.
4. The ISRP held 16, daylong meetings to discuss the individual proposals. In general all the proposals within a specific subbasin were discussed in a single day's session. In addition to the ISRP members assigned to read and evaluate the proposals for a given subregion, other ISRP members attended the meetings and participated in the discussion and review of the proposals.
5. Discussion of the individual proposals was carried out in two steps. Each reviewer's scores and comments for the proposals in a subregion or subbasin were compared and the proposals discussed. We recorded major positive and negative comments on each proposal during those discussions, then developed a summary review and recommendation for each proposal. Recommendations generally fell into one of five categories: 1) fund, 2) fund in part, 3) fund for one year, with subsequent funding contingent on addressing deficiencies identified by the ISRP, 4) delay funding until deficiencies are corrected, and 5) do not fund (see additional explanations of these categories below). In addition, review groups identified those proposals that were

particularly innovative or adequate for multi-year approval. The primary factor determining the recommendation was a judgment on the technical quality of the proposal, i.e. an evaluation as to whether it was based on “sound science principles; benefit fish and wildlife; and have a clearly defined objective and outcome with provisions for monitoring and evaluation of results.” (1996 Amendment).

6. Following the review group meetings, the ISRP conducted a consistency review across subbasins to ensure that similar quality proposals received consistent recommendations from peer review group to peer review group. To do this the ISRP categorized each proposal into topical areas such as wildlife, coordination, and habitat restoration, rather than the subbasin organization under which they were originally reviewed. Then members compared the review group comments and recommendations by topic. In addition, the ISRP met for two days to discuss, refine, and reach consensus on individual review group recommendations. The ISRP specifically focused discussion on each “do not fund” recommendation.

ISRP Funding Recommendation Categories

In addition to the recommendations of Fund and Do Not Fund, the ISRP recommended funding projects with some qualifications in each of three categories. Each of these recommendations involves a critical shortcoming that would prohibit strong scientific support for the work if not corrected. The three categories of recommendation reflect the ways in which shortcomings would best be addressed. These involved provision of critical missing information before a project begins or continues (Delay Funding), provision of critical missing information in a subsequent proposal (Fund for 1 Year), and deletion of one or more proposed components of a project (Fund in Part).

A recommendation of Delay Funding (until some critical information or clarification is provided, as specified in the proposal review) was assigned to a proposal that had some serious deficiency that, without correction, precluded scientific support for the work. Examples include proposals for acquisition of land that lacked clear description of the land to be purchased or of the basis for assigning its priority for purchase, proposals for habitat restoration that did not justify methods of restoration or that did not supply evidence that the area to be treated was well-chosen as a priority for work, and proposals for hatchery planning and construction that did not give critical background justification for proposed work. Proposals assigned a Delay Funding recommendation were viewed as not scientifically sound without immediate revision or clarification of some element of the proposed work.

Possible means to resolve Delay Funding recommendations are described in the table below. The table lists the information or task that is needed to address the proposal’s deficiency and suggests an appropriate review body after the deficiency has been addressed.

<u>Need</u>	<u>Review Responsibility</u>
1) Additional technical information needed	possible ISRP review

2) Programmatic Review Needed Visiting	under ISRP direction via Site Committee, or
independent review panel	
3) Establish and justify priority of project	ISRP, BPA

A recommendation of Fund for 1 Year was assigned to a proposal that was overall considered to be sufficiently sound for work to be done immediately but that lacked a critical element needed to justify the work over the longer term. Proposals assigned to this category had many positive elements, but also had some critical missing components, without which a project would be unlikely to achieve objectives of the Fish and Wildlife Program. They were viewed as having an important scientific shortcoming that needed to be corrected soon, but as having short-term or on-going objectives that could be pursued for a year without damage likely to result from the missing element(s) of the proposed work.

Examples include proposals for acquisition and management of land for wildlife mitigation that did not include a sound monitoring and evaluation plan or that did not include justification of and plans to evaluate effects of restoration methods, and proposals for continuation of on-going projects that had been underway for several to many years but that reported no results of past work and so could not be evaluated for effectiveness and progress.

A recommendation of **Fund in Part** was assigned to a proposal that included work that was scientifically supported, but also some work that was not. In this case, the ISRP specified which objectives or tasks were not scientifically sound and recommended that these parts of the proposal not be funded. Examples are proposals that included objectives that were not scientifically supported, for instance a proposal for both background survey work and subsequent major implementation programs that could not be supported before results of the survey were known, and proposals that included use of unsound methods to meet a particular objective.

**Review and Recommendations of Individual Project Proposals for
FY2000
Systemwide and Mainstem**

Ocean and Estuary

ProjectID: 20011

**Evaluate Whole System Effects On Migration And Survival Of Juvenile
Salmon**

Oregon Cooperative Fish and Wildlife Research Unit

Short Description: Our goal is to understand how salmon smolts may be managed to minimize loss in the Columbia River estuary. Physiological impacts during outmigration may affect behavior and survival in the estuary. Tissue sampling and radiotracking will be used.

**ISRP Recommendation - DNF / CBFWA Tier 2 / ISRP Comparison with CBFWA:
Disagree-DNF**

**Sponsor Funding Request = \$400,698 / CBFWA Funding Recommendation =
Recommendation:**

Do not fund, technically inadequate proposal.

Comments:

This proposal presents an ambitious project to relate fish “quality” or condition to behavior and survival in the near-shore and Columbia River estuary. The proposal apparently builds on past research in the lower river. This work is only briefly referenced and is without adequate supporting materials. The project appears to be an extension of previous works with location (e.g., estuary/river mouth) the only new component. The progress of the earlier work should be more fully summarized. The proposal would attempt to relate a complex of factors to variation in marine survival. The proposal refers to barged and run-of-the-river fish, variation in stock of origin (possibly known from PIT tags) and time of tagging, and several measures of fish health. However, given the sample sizes and short duration of the project (2 years to measure annual variability), it is questionable whether the investigators will unravel the complexity of early marine smolt survival. Insufficient information is provided to allow evaluation of the experimental design (e.g., number and timing of aircraft flights, surveys of physical parameters, etc.). The number of fish which are expected to be tracked with depth-sensitive tags is so small (5 each for ROR and barge per group), that it is questionable if the results will be meaningful or convincing (e.g. statistically significant). The authors state that the “condition of fish is highly variable when they reach the dam”, which indicates that much larger sample sizes are likely to be required. Further, it is not clear how fish conditions in a batch or groups of fish would be related to the survival of individual fish (which would be tagged and tracked). The authors also refer to validating a computer model with these data but the application/use of the model is not explained. The linkages to other BPA projects and priorities should be more clearly identified (only a list of projects is provided).

The proposal does not provide a convincing argument that this work is of high priority and actually needs to be done. With an expected cost of \$800k over two years, the expected

benefits should be more clearly identified. The authors do not convince, or at least provide evidence, that they can evaluate fish health and relate how it will affect smolt behavior and survival in the marine environment. How will the information be applied to obtain an increase in survival rates? For example, it is not clear how the information on predation rates by birds will be useful in improving survival rates. The proposed topic is clearly of programmatic value, but the project appears too ambitious for the resources requested, making successful delivery of all components doubtful. In our assessment, this proposal involves too many unknowns and not enough information upon which to make inferences; therefore, we can not recommend support of this proposal.

We recommend that the project be reduced in scope and focus on either the physiological or behavior/predation (but not both). Costs should also be reduced accordingly. The modeling should be more thoroughly explained or omitted. A larger sample size of smolts is likely required given the depth of explanation provided.

ProjectID: 20052

Strategies To Limit Disease Effects On Estuarine Survival

Oregon State University, National Marine Fisheries Service

Short Description: Determine the impact of pathogens on fish survival in the estuary and examine fish rearing, release, and treatment strategies for decreasing pathogen effects.

ISRP Recommendation - Fund in Part / CBFWA Tier 2 / ISRP Comparison with CBFWA: Disagree-fund in part

Sponsor Funding Request = \$334,178 / CBFWA Funding Recommendation = Recommendation:

Fund in part. Fund objective 2 and proceed with objective 3 pending results from 2. Do not fund objective 1 (45% of budget) due to the uncertainty in interpretation of results.

Comments:

This proposal identifies three significant pathogens in the Columbia Basin and will investigate the effect of these pathogens on the ability of spring chinook to adapt to the marine environment. Smolts will be sampled in the lower river before entry to the estuary and from an estuarine location to examine the incidence of these pathogens. The potential effect of each pathogen will be examined in laboratory conditions so that infections and challenge conditions can be controlled and results observed directly. The investigators will also examine the effectiveness of vaccines and immunostimulants for decreasing pathogen effects in the estuary. The laboratory studies could provide important information concerning the role of disease in early marine survival and the potential for controlling these effects in hatchery fish.

Experimental design appears adequate in most respects with one major exception noted by each reviewer. Samples collected in the river and in the estuary seem to be of little comparative value since a change in pathogen incidence may be due to sampling a different stock of fish, or it may reflect progression of the infection or death of the infected fish. How would observations from these samples be associated with the laboratory component of this project?

More information on the extent of research and results from previous work of this kind would have been useful. Linkages to other BPA/FWP projects and priorities are listed but not described in sufficient detail to evaluate actual interaction or importance. Although this is submitted as a “new” proposal, clearly a considerable amount of similar work has been done previously in freshwater. Insufficient information about this previous work is provided in some areas. This is needed to fully evaluate the importance and potential utility of the new work that is now proposed.

In summary, the question to be addressed is of programmatic value. Due to the uncertainty of the interpretation, the fieldwork aspect of the proposal is considered weak. The lab work is supportable. Each reviewer noted the discrepancy between the uncertainty of the field portion of the work (objective 1) and the much more controlled laboratory components, with the latter being much more likely to provide information of value to the FWP.

ProjectID: 9702600

Ecology Of Marine Predatory Fishes: Influence On Salmonid Ocean Survival

National Marine Fisheries Service, Northwest Fisheries Science Center

Short Description: This study will identify and document the relationships between the distribution, abundance, and food habits of marine fish predators and forage fishes off the Columbia River and salmonid ocean survival.

ISRP Recommendation - Delay Funding / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-until corrected

Sponsor Funding Request = \$200,000 / CBFWA Funding Recommendation = \$ Recommendation:

Delay funding until they convincingly address the concerns raised in the ISRP’s FY99 report and the concerns raised here. They need to specify how they are going to estimate population size of predators to calculate overall impact. The sampling program is inadequate both temporally and spatially to accurately estimate the predation rates and potential impacts. Implementing a two stage sampling procedure as described in the comments can potentially reduce the problem of small sample size.

Comments:

Population densities and food habits of potential predators in the Columbia River estuary (and near offshore) would be monitored and their impact on salmonids estimated. The proposal also shows good integration with other oceanographic programs being developed along this coast. The research question is adequately explained, but the utility of the information (how it can/will be used) is not explained well enough to be convincing. The objectives are clear, but the measurables are weak (e.g. what happens if the number of predators captured is too small? How will the experiment design be modified?). Results obtained from previous work are not sufficiently discussed or interpreted, apparently because analyses are still ongoing.

Each reviewer stated concerns about the methods presented. Items of particular concern are: (a) how the population size and distribution of the predator species will be determined; (b) the months of coverage; and (c) the adequacy of the sampling rates to

study predation by large marine populations. The proposal refers to estimating the density of predator species and their predation rates, but impact on the Columbia basin salmon must be a function of the total population size and distribution. We could not find any description of how predation rates might be calculated based on collected data, which is a critical concern. The sampling coverage is for May through June, but substantial production of fall chinook will enter the near-shore coastal environment after that time. The expected number of predator stomachs that will be examined (30 stomachs per predator species per tow; 100-200 stomachs per species for each two-week period) is likely too small to detect what the authors state is likely to be the relatively rare event of predation on juvenile salmon. Similarly, one two-day survey, repeated every 10 days, will be insufficient to resolve the variations that are likely to occur in both predation rates and the physical environment. It is suggested that the sampling design be modified to incorporate a two-stage process of less detail (e.g. only presence/absence of juvenile salmon) which will include a much larger number of predator stomachs while at sea as well as the detailed examination of stomachs returned to the laboratory.

The proposed budget generally appears reasonable. However, the proposed required purchase of a new trawl should be further investigated. The project description indicates that this same type of trawl was used in 1998. Trawls typically last many years, so was this trawl purchased previously and if so, is it still available? If not, is it cheaper to rent a trawl than purchase another one? Also, while no ship could be contracted in 1998, the use of the resulting surplus funds from 1998 has not been adequately identified.

This proposal could be an important companion to Project 9801400 in that it addresses the larger marine fish species that are not addressed in that proposal. We could not understand why this proposal was and has been funded as an entity separate from proposal 9801400 which seems most interested in its results. Finally, while an understanding of marine predation would be of enormous scholarly interest, one reviewer questioned the payoff from such research. Outmigration timing has minimal manipulation, especially for wild fish. The proposal needs to better justify the benefits of collecting these data. Again, a direct link to project 9801400 would be beneficial.

It was noted that these proponents did not address the ISRP's FY99 comments, Appendix A, page 2. The research is of programmatic value. Further, while the proponents list other ocean research efforts (i.e., other support for marine studies), they need to more directly indicate active collaboration.

ProjectID: 9801400

Ocean Survival Of Juvenile Salmonids In The Columbia River Plume

National Marine Fisheries Service, Northwest Fisheries Science Center

Short Description: Measure the effects of time of entry, smolt quality, food habits, growth, and health status of juvenile coho and chinook salmon on survival in relation to oceanographic features of the ocean environment associated with the Columbia River plume.

ISRP Recommendation - Fund in Part / CBFWA Tier 1 / ISRP Comparison with CBFWA: Partially agree-fund in part

Sponsor Funding Request = \$826,000 / CBFWA Funding Recommendation = \$ Recommendation:

Fund in part for one year (or a limited period) supporting objectives 1,2, and 5; future submittal and consideration of longer term funding should address ISRP comments about objectives 3 and 4.

Comments:

This proposal presents the first comprehensive study of the physical and biological features of the estuary, near-shore ocean and the Columbia River plume, and their effect on the salmon production from the Columbia basin. The proposal is by nature large-scale, long-term and costly. Given changes in the marine environment and the extent of anthropocentric impacts in the Columbia River (annual flows, sediment loads, near shore development, etc.), this investment is overdue. Variation in the marine survival of salmon is now known to be large and is likely associated with large-scale ocean climate changes. However, in the Columbia basin, changes in flow and sediment loads and the estuary are also likely to have contributed to this variation. This proposal would investigate these effects and their impacts on the growth and survival of salmonids. Without such studies, conservation actions and investments in the freshwater habitats will continue to be confounded with changes in the marine habitats. Insufficient information is provided about the results and success of previous work (in too many cases the previous results are reported as “reports in progress”).

This proposal is not convincing that it will achieve the stated objectives. The experimental design does not convincingly address the fundamental question of whether or not the plume is important to salmon. For example, there is no way to be certain of the origin of, or realistically determine the importance of, the plume, for most salmon found inside or outside of the plume. Any fish sampled could have just recently entered or left the plume, so the importance of the plume to growth or survival cannot be clearly established. The plume may indeed be critical to the survival of juvenile salmon, but the experimental design in this proposal may not be able to conclusively demonstrate this. Further, the proposed sampling schedule is likely to inadequately resolve the most important variations (e.g. fish sampling inside and outside the plume).

Some additional recommendations that would likely improve the chances of success for this project are:

1. It is essential to determine the migration routes, migration timing, and residence times of juvenile salmon inside the plume in order to assess the importance of the plume to

growth and survival. This could be examined directly by tagging juvenile salmon at the mouth of the river with dual sonic/radio tags and following them seaward through the plume.

2. Tag sufficient additional numbers of salmon (e.g. with otolith thermal marks, CWT's, PIT, or visual implant tags) in the estuary. This will ensure a reasonable chance of recovery of a sufficient numbers of these tagged fish over time as well as to assess movements and residence times. Sample juvenile salmon more intensely in time and space to try to recover more fish that have been tagged in other Columbia River programs.

3. Bi-monthly sampling is not frequent enough to determine if salmon found in the plume have been there for hours, weeks or months. Additional information required to assess this (e.g. change in size with time) will also not be obtained by bi-monthly sampling.

There are some important inconsistencies in the proposal. For example, under objectives 1 and 2 only two sampling cruises are identified. However, in sections 3 and 4 three cruises sampling salmon are identified. The value of the additional cruises which will not sample salmon are questionable. The position and characteristics of the plume will be identified, but there will be no associated information about juvenile salmon.

Minor weaknesses include a very confusing, though probably important, description of the difficulties of sampling along the "plume axis"; weak methods description with respect to statistical analysis methods used; a weak section on food habits work; and a poor section on growth and "health" (as compared to other sections). These proponents should consider deletion of the fish health work (especially if 20052 is funded); an addition of a strong statistical collaborator; and explicit incorporation of the previous predation project (97026). It is recommended that closer coordination and collaboration with other potential programs, which likely will be conducted simultaneously in the same area (e.g. GLOBEC, PNCERS, etc.), should be developed. These other programs could provide much of the required physical oceanographic data required for this project as well as allow more of the resources requested in this project to be focused on studying the juvenile salmon.

In summary, there is significant potential programmatic value to this project. The researchers should consider application of remote sensing (e.g. satellite imagery) to fill in information gaps between sampling periods. This is a very large program that needs an examination of the sampling design with appropriate spatial and temporal scales to determine the dynamics of the plume. The methodologies proposed to study the effects of the plume on growth and survival of salmon are inadequate. The proposed ten-year time frame to hope for adequate contrast in interannual variation has not been found to be a successful strategy. The monthly intervals in objective 2 are likely inadequate to achieve this objective.

Systemwide and Mainstem Umbrella Proposals

ProjectID: 20537

Bonneville Power Administration Non-Discretionary Projects Umbrella

Bonneville Power Administration Fish and Wildlife Group

Short Description: Implement certain non-discretionary actions. Provide independent information to guide and support BPA's decisions pertaining to its responsibilities under the Power Act and Endangered Species Act

ISRP Recommendation - na / CBFWA Tier na / ISRP Comparison with CBFWA: Umbrella Proposal

Sponsor Funding Request = \$ / CBFWA Funding Recommendation =

Recommendation:

NA - Umbrella Proposal

Comments:

Even though it is claimed that the projects are non-discretionary, the projects should be reviewed for their technical and programmatic merit. The desire for "independent information" further fragments the data collection, data storage, and data analysis efforts that actually need more cohesion and better coordination.

ProjectID: 20515

Mainstem Columbia River Umbrella Proposal

Oregon Department of Fish and Wildlife

Short Description: This proposal explains the management intent for anadromous and resident fish, and for wildlife in and along the mainstem Columbia and Snake rivers. Objectives for key species are described, as are strategies and actions to meet those objectives.

ISRP Recommendation - na / CBFWA Tier na / ISRP Comparison with CBFWA: Umbrella Proposal

Sponsor Funding Request = \$ / CBFWA Funding Recommendation =

Recommendation:

NA - Umbrella Proposal

Comments:

This umbrella proposal gave an informative overview of the problems but did not provide significant description of what the individual projects were going to accomplish. What is the role of BPA funding? Is it to cover the basic operation of State agencies? What is basic agency funding? BPA should set up guidelines for funding agencies and identify those things that constitute base funding.

Smolt Monitoring

ProjectID: 20552

Smolt Monitoring Program Umbrella

Pacific States Marine Fisheries Commission, Idaho Department of Fish & Wildlife, Nez Perce Tribe and USGS

Short Description: Juvenile salmonid migration monitoring for the Columbia and Snake rivers.

ISRP Recommendation - na / CBFWA Tier na / ISRP Comparison with CBFWA: Umbrella Proposal

Sponsor Funding Request = \$ / CBFWA Funding Recommendation =

Recommendation:

NA - Umbrella Proposal

Comments:

This proposal does not explain the goals and experimental design to reach the goals. With the way the umbrella and sub-proposals are set up it is not clear where the tags are being applied. The hardware is still not in place for adequate detection of adult returns. There is a critical need to install adult detection facilities, with multiple detection devices in each fish ladder.

ProjectID: 9403300

The Fish Passage Center (Fpc)

Pacific States Marine Fisheries Commission

Short Description: Provide the fishery agencies and tribes with technical expertise regarding hydrosystem operations, analysis of smolt monitoring data, for daily, weekly and monthly fish passage management decisions, and regional fish passage data base management.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$1,079,363 / CBFWA Funding Recommendation = \$1,079,363

Recommendation:

Fund for one year. Subsequent funding contingent on programmatic review. The entire set of smolt monitoring projects needs to receive a programmatic review with one of the goals to create a central data repository that includes historical and raw data. They also need to develop a justifiable program-wide design. The various regional data sets should be consolidated with a specific protocol for quality control and data collection. Whether this consolidation is done through selecting an existing project to cover this, or creating a new site is a policy question. Various analysis efforts should be funded separately from the data collection entity.

Comments:

The proposal indicates the analysis and information function of the Fish Passage Center. Users of the analyses and data compilations are identified. Linkage to other projects is indicated, but reference to the smolt monitoring umbrella project 20552 is missing. Activities are clearly described but the proposal does not address quality control issues nor provide a strategy for assessment of information needs. The impact of the information will depend on the quality of the data and the demand, which should be assessed. It is important to have a central source of expertise and information on mainstem passage in the Columbia River basin. Information on fish passage rates, gas bubble trauma, and other indicators of resource status are used directly in the management of the hydroelectric operations each migration season. Like the other data management proposals (Streamnet, Fish Passage Center, PTAGIS and DART), this proposal fails to explain the need for the separate centers; the distinct function each serves; the nature of coordination between them; safeguards against redundancy; safeguards against inconsistent representations of the same nominal information; and the ability to serve the actual information needs of clients who have to access data from more than one data center to get an answer to their question. The entire set of database efforts should be coordinated by one entity. Data access should be possible from a single portal. A

reorganization of "data centers" might benefit by separating the three functions that now appear to be mixed together at some of the data centers, and by attempting to centralize the coordination of each function, namely (1) data archiving and access, (2) data collection design, and (3) data analysis.

ProjectID: 20542

Biological Monitoring Of Columbia River Basin Salmonids

Multi-agency: recommendation for continued biological smolt monitoring

Short Description: Systemwide coordination of monitoring of salmonid biology is needed to allow informed modifications as basin managers adapt breeding, rearing and habitat, and passage programs to declining stocks, and hydrosystem and climatic change.

ISRP Recommendation - na / CBFWA Tier na / ISRP Comparison with CBFWA: Umbrella Proposal

Sponsor Funding Request = \$ / CBFWA Funding Recommendation =

Recommendation:

NA - Umbrella Proposal

Comments:

This almost appears to be a new proposal, rather than an umbrella. An umbrella should be an umbrella over specific sub-proposals. They did not explain whether the physical data are adequate to the tasks described in the proposal. Is this proposal a mechanism for coordination?

ProjectID: 8712700

Smolt Monitoring by Federal and Non-Federal Agencies

Pacific States Marine Fisheries Commission

Short Description: Daily passage data through the mainstem, Snake, Columbia and mid-Columbia rivers to facilitate fish passage management decisions, including Biological Opinion implementation, is collected daily. Sampling and marking occur at 8 sites of the larger region.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$1,870,449 / CBFWA Funding Recommendation = \$1,870,449

Recommendation:

Fund for one year. Subsequent funding contingent on programmatic review. This entire set of smolt monitoring projects needs to receive a programmatic review with one of the goals to develop and justify a program-wide design that really is capable of delivering enough data, of high enough precision, to answer the management questions.

Comments:

The proposal justifies the need for the work to benefit fish. A clear relationship to Biological Opinion implementation is demonstrated. This work is related to other funded work and the linkages are well described. The objectives are clearly stated and related to the project activities. More details relating to the monitoring and evaluation of the results, scheduling of specific tasks and details of sampling design would strengthen the proposal. The smolt monitoring programs in the Umbrella Proposals: 20552, 20542 have been designed to work together to provide temporal and spatial information on juvenile salmon migrations. The projects employ state-of-the-art capture and tagging methods that are periodically reviewed for efficacy. Information from these programs routinely forms the basis for peer reviewed scientific publications that guide policy and research. There is little justification or description of design. It is good that they identify the location of

sampling sites. The monitoring needs to be coordinated with analysis and research. Can we really measure the things we are hoping to measure?

ProjectID: 8332300

Smolt Monitoring At The Head Of Lwr. Granite Reservoir & Lwr. Granite Dam

Idaho Department of Fish and Game

Short Description: Operate smolt traps; monitor migration timing and provide relative passage index; PIT tag groups of smolts for in-season travel time and survival information, including collection of data required for BiOP implementation and decision path determinations.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$396,700 / CBFWA Funding Recommendation = \$396,700

Recommendation:

Fund for one year. Subsequent funding contingent on programmatic review. This entire set of smolt monitoring projects needs to receive a programmatic review with one of the goals to develop and justify a program-wide design that really is capable of delivering enough data, of high enough precision, to answer the management questions.

Comments:

This proposal explains the need for this work and relates it to other individual projects and appropriate umbrella projects. Specific objectives are identified and linked to tasks with measurable or observable outcomes. More details relating to scheduling of specific tasks would strengthen the proposal. The smolt monitoring programs in the Umbrella Proposals: 20552, 20542 have been designed to work together to provide temporal and spatial information on juvenile salmon migrations. The projects employ state-of-the-art capture and tagging methods that are periodically reviewed for efficacy. Information from these programs routinely forms the basis for peer reviewed scientific publications that guide policy and research. Smolt monitoring programs such as this one provide observations on smolt abundance and migratory timing that are essential in evaluating the status and efficacy of the Fish and Wildlife Program, the Hydro BiOp and Corps of Engineers Capital and Operating Programs. Implementation and management of the state, tribal and federal salmon recovery programs in the Columbia River basin would not be feasible without this or similar information. This proposal supplies more information on sampling and design problems than 8712700 but they still need to provide more information on sample size and design. The overall sample size and experimental design should be described in the umbrella proposal.

ProjectID: 8401400

Smolt Monitoring Program Marking

U.S. Fish and Wildlife Service

Short Description: PIT Tagging Chinook and Steelhead for Smolt Monitoring Program Groups

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$121,038 / CBFWA Funding Recommendation = \$121,038

Recommendation:

Fund for one year. Subsequent funding contingent on programmatic review. This project does not warrant a separate proposal but should be included in a comprehensive proposal. This entire set of smolt monitoring projects needs to receive a programmatic review with one of the goals to develop and justify a program-wide design that really is capable of delivering enough data, of high enough precision, to answer the management questions.

Comments:

This proposal does not provide sufficient information for evaluation. Rather, it refers the reader to the SMP Umbrella proposal. The proposal should clearly identify the relevant background, specific objectives, project design, and provisions for evaluation. The smolt monitoring programs in the Umbrella Proposals: 20552, 20542 have been designed to work together to provide temporal and spatial information on juvenile salmon migrations. The projects employ state-of-the-art capture and tagging methods that are periodically reviewed for efficacy. Information from these programs routinely forms the basis for peer reviewed scientific publications that guide policy and research. Smolt monitoring programs such as this one, provide observations on smolt abundance and migratory timing that are essential in evaluating the status and efficacy of the Fish and Wildlife Program, the Hydro BiOp and Corps of Engineers Capital and Operating Programs. Implementation and management of the state, tribal and federal salmon recovery programs in the Columbia River basin would not be feasible without this or similar information.

ProjectID: 8712702

Comparative Survival Rate Study (Css) Of Hatchery Pit Tagged Chinook

Pacific States Marine Fisheries Commission

Short Description: Adult and juvenile PIT tag recovery data are analyzed to compare survival estimates for transported fish of known origin, downriver stocks, wild and hatchery transported fish and fish handled and not handled at dams.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$936,201 / CBFWA Funding Recommendation = \$936,201

Recommendation:

Fund for one year. Subsequent funding contingent on programmatic review. This entire set of smolt monitoring projects needs to receive a programmatic review with one of the goals to develop and justify a program-wide design that really is capable of delivering enough data, of high enough precision, to answer the management questions.

Comments:

The proposal adequately describes the connection of the work to the PATH recommendations. The need for addressing the problem is clear. The objectives are clearly stated but not all expected outcomes are well defined. More details are necessary for the project design, specific tasks to meet the objectives, and provisions for evaluating the results. In particular, objective 5 to evaluate growth patterns is vague and the

expected outcomes are not clear. The project is scientifically sound regardless of the uses intended by the authors for the data. It is an effective application of the PIT tag technology to hatchery fish prior to release that produces survival and behavior information through the hydroelectric system and beyond to points down river such as Rice Island. This project has created the most extensive PIT tag data set in the basin. The data can be used to evaluate the efficacy of program measures, such as juvenile transportation, and survival of hatchery fish to the point of entry into the hydroelectric system. The data set has the potential to permit at least a qualitative comparison of juvenile survival by passage route; spill, turbine, and bypass. These data are expected to help decide critically important management issues on the use of spill and transportation in salmon recovery. Based on the proposal, it is not clear that the design is adequate. They need to explicitly address adult recovery localities and methods. Specifically, they need to examine nearby spawning localities outside the hatcheries for the presence of tagged fish. It is good that they make attempts to address sampling and study design.

ProjectID: 8740100

Assessment Of Smolt Condition: Biological And Environmental Interactions

U.S. Geological Survey, Biological Resources Division, Columbia River Research Laboratory

Short Description: Evaluate the biology of wild and hatchery salmonids by determining the effects of rearing and river conditions on smolt quality; assist hatchery managers in producing fish with wild-like characteristics and thereby increase smolt-to-adult returns.

ISRP Recommendation - Delay Funding / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-until corrected

Sponsor Funding Request = \$199,046 / CBFWA Funding Recommendation = \$199,046

Recommendation:

Delay funding until they provide a more precise statistical analysis protocol that is supported by the sampling design and data. The entire set of smolt monitoring projects needs to receive a programmatic review with one of the goals to develop and justify a program-wide design that really is capable of delivering enough data, of high enough precision, to answer the management questions.

Comments:

The proposal explains and references the need for addressing the problem. The relationship with high priority programs is clearly presented. The objectives are clearly stated. However, a statistically sound analysis of the data is essential. Collaboration with statistical support personnel from other funded projects is recommended. There is a need for a review of the overall design. They need to explain how river conditions will be measured in order to establish relevance to the experimental subjects. The design is too complicated, convoluted, and overly optimistic. A bottleneck in their design is their ability to measure smolt to adult survival. They are going to establish physiological indicators but it is not assured that they will be able to make any correlation.

Dissolved Gas

ProjectID: 9602100

Gas bubble disease research and monitoring of juvenile salmonids

U.S. Geological Survey, Biological Resources Division, Columbia River Research Laboratory

Short Description: Provide support for the Smolt Monitoring Program monitoring juvenile salmonids for signs of gas bubble disease. Activities include (1) care and maintenance of equipment, (2) training, and (3) QA/QC.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$43,711 / CBFWA Funding Recommendation = \$43,711

Recommendation:

Fund for one year. Subsequent funding contingent on programmatic review. This entire set of smolt monitoring projects needs to receive a programmatic review with one of the goals to develop and justify a program-wide design that really is capable of delivering enough data, of high enough precision, to answer the management questions.

Comments:

The programmatic need for this quality assurance work in collaboration with other smolt monitoring projects is clear. The objective is clear but the description of the associated tasks is vague. It is not clear how many investigators will be trained or how many times the examiner will visit each site. Will all sites be visited the same number of times or will some investigators need more monitoring than others do? How many fish will be examined and what standard constitutes agreement? The proposal states that the examiner will examine the fish after the on-site biologist. Is there an effect from degradation of the sample? Always using that fixed order of examination may be a source of bias. Varying the order of examination is recommended. This is an ongoing support project that has evolved into almost an O&M activity, and is now being proposed for funding as a monitoring and evaluation project. The P.I. gives expert advice, training, equipment maintenance, and QA/QC oversight to the existing smolt monitoring projects that tally GBT signs in fish (8401400, 8712700). Assuming the monitoring continues, this would be a candidate for a multi-year review cycle.

ProjectID: 20067

Effects Of Supersaturated Water On Reproductive Success Of Adult Salmonids

U.S. Geological Survey, Western Fisheries Research Center, Columbia River Research Laboratory

Short Description: This study will determine in-situ exposures of adult salmonids to total dissolved gas supersaturation (TDGS) and conduct laboratory assays to determine the effects of TDGS exposure on their reproductive performance.

ISRP Recommendation - Fund / CBFWA Tier 3 / ISRP Comparison with CBFWA: Disagree-fund, but not high priority

Sponsor Funding Request = \$839,893 / CBFWA Funding Recommendation =

Recommendation:

Fund. This project is likely to benefit fish in the Columbia River basin. If successful, the project would start the process of filling an important information gap that now precludes relating mainstem management action of controlled spill to spawning success in salmon.

Comments:

It is not clear that objective 1 should be evaluated before a study of objective 2 is conducted. If there is no measurable effect of supersaturated water on reproductive success over a range of realistic exposures to TDGS, then 90% of the cost of this study is saved. If exposure to TDGS can be demonstrated to affect reproductive performance, an assessment of in-situ exposure could be conducted in a future study. Nevertheless, it is unlikely that laboratory conditions can recreate the complex exposure history that adult fish experience. If the in-situ exposure data is collected, analysis should focus on the entire distribution of TDGS and depths, not only a comparison and estimation of central tendency. Extreme exposures may be more indicative of a reproductive response than average exposure. Justification for samples sizes selected to address objective 2 should be included. The proposal is technically sound to the extent it has identified an important information gap that now precludes relating mainstem management actions to spawning success in salmon. The lack of connection between the measures employed in mainstem hydroelectric system monitoring and research for adult salmon and success on the spawning grounds has been identified as a problem by the ISAB (ISAB 99-3). The measurements to be taken in the field, depth, temperature, total dissolved gas TDG (estimated), by location date and time, are a reasonable complement to those to be taken in the laboratory, gonadosomatic index, absolute and relative fecundity, percent of fertilized eggs hatched, by level of TDG exposure. But on the other hand, the study does not identify the relative likelihood of exposure of species and stocks to TDG. It proposes to tag three species with different timings, therefore different likelihood's of exposure, but there is no rationale based on TDG for the distribution of tags. Results are expected to be more critically important for stocks migrating in the early to mid-Spring, such as spring chinook salmon, and less important for stocks migrating during the late spring and summer, such as steelhead and sockeye. Levels of TDG in the spring are often quite high, declining as the summer progresses. There are some serious questions remaining about how well the proposed methods would actually yield useful depth and temperature measures. It appears that temperature at depth will be inferred from measures of surface temperature, which could be inaccurate. If the tag records or transmits ambient temperature, the proposal did not so indicate. Further, the probability of detecting each individual will be partially dependent on depth due to the attenuation of radio signals in water. Hence, there are unexplained problems of accuracy and precision with the depth measurement method. Precision is possibly impacted because the variance of the estimated proportion at depth is inversely proportional to depth, and since actual detection of fish at depth could be less numerous than fish at shallower depths. Accuracy would be impacted if the fish reach a depth at which they cannot be detected at all. The proposal is silent about the prospect that fish could reach depths below the detection threshold of the receivers. Since depth is a critical component of the study, this is a major shortcoming.

There is also the problem of relating laboratory studies of the effects of TDG on the hatching success of embryos to the performance of spawners in the wild. The levels of

TDG exposure to be simulated in the laboratory at shallow depths would probably not accurately reflect the levels of exposure in the wild since fish traveling at depth would be able to avoid some of the ill effects of TDG (declines 10% per m of depth). Given that so little information exists on the effects of TDG on adult salmon, this information should be of value in allowing managers to assess how serious the problem may be, even without direct applicability of the research results to population level effects. If successful, the project would start the process of filling an important information gap that now precludes relating mainstem management action of controlled spill on spawning success in salmon. Further, the project could help understand how episodes of uncontrolled spill and high TDG may impact spawning success, regardless of management actions. The work is related well to other projects. The objective of determining exposures would be approached cooperatively with an existing telemetry study (Bjornns COE work). Signs of GBT would be assessed in cooperation with an ongoing study of signs in smolts (9300802). The telemetry methods for depth selection are well established and appropriate for the objective. The laboratory exposures to test conditions of gas supersaturation are appropriate. The study uses standard hatchery culture procedures for meeting the reproductive goals, which is appropriate (although one aspect of reproduction, behavior, will be missing). The several specific measures of reproductive performance are good. The budget is appropriate and the staff has demonstrated ability to do excellent research. Sonic tags will provide more complete data at depth than radio tags. They need to include a behavioral component in the study. The allocation of tags may be better focused on the spring chinook, which are subject to more chronic exposure. The statistical procedures for estimation of the distribution of fish at depths should be described, because unequal probability of detection at depth will invalidate standard statistical techniques.

ProjectID: 20143

Monitor Symptoms Of Gas Bubble Trauma In Adult Salmonids

Columbia River Inter-Tribal Fish Commission

Short Description: Monitor the frequency and severity of gas bubble trauma symptoms in adult salmonids migrating in the mainstem Columbia River.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$112,755 / CBFWA Funding Recommendation = \$112,755

Recommendation:

Fund for one year. Subsequent funding contingent on showing relation of GBT signs to survival and reproductive success in the field and to demonstration of exposure from BRD radio tagging studies.

Comments:

The proposal adequately addresses the background and need for the study. The proposed monitoring is associated with a high priority program. The project number cited for a related project is not for GBT related work. The objectives and tasks are clear. The choice of sampling sites and frequency of sampling are not well justified. Evaluation of the relationship between percentage of fish with GBT and the percentage of fish with TDGS at each site should be on other characteristics such as range, percentiles, standard

deviations, in addition to the mean. The proposal states that the trained supervisor will examine the same fish after the biologist. Always using that order of examination may be a source of bias. Varying the order of examination is recommended. The proposed methods have been well established in the scientific literature. The PI has a proven track record of performance in gathering these observations for the proposed localities and species. Incidence of gas bubble trauma in adults GBT could be important to assessing the effects of both controlled and uncontrolled spill on salmon recovery efforts. A routine monitoring program, when coupled with other projects that handle adult salmon for other reasons, is essential information collected at reasonably low risk to the affected populations. The proposal does not show evidence of coordination and integration with other projects that capture and anesthetize adult salmon at mainstem dams. All salmon taken for research purposes should be examined for GBT following the protocols identified in this proposal. Closer cooperation from the harvesters in retrieving nets more frequently should have been identified as an objective. Establishing ambient conditions of TDG associated with GBT is most difficult under the circumstances described in this proposal. What is the dose expected from the various levels of TDG and for fixed TDG? How does the dose vary from species to species and from one hydroelectric project to another? This project will benefit fish in the CRB by closing an information gap on the incidence of GBT in adult salmon. Adult programs receive relatively little attention from researchers, while juvenile programs receive most of the funding. There are extensive programs for monitoring GBT in juvenile salmon, so why are these not necessary in adult salmon? Adult salmon are being sampled and anesthetized at Bonneville for other studies, so monitoring GBT in those subjects would not increase the risk to populations. This proposal converts an existing research program into a routine monitoring program. Considering that this work has already had a several-year history as a research project, it would be a good candidate for multi- year funding. There is inadequate connection of measurements of symptoms to survival. To decrease handling of fish, they should take as much of their sample as possible from other studies such as from the Corps and BRD tagging studies.

PIT Tag and Telemetry Technology

ProjectID: 9105100

Monitoring And Evaluation Statistical Support

University of Washington

Short Description: Develops statistical methods needed in monitoring and evaluating salmonid recovery plans. Provides added-value analyses of tagging data to address regional issues. Provides smolt migration timing predictions on internet for the fisheries community.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 3 / ISRP Comparison with CBFWA: Disagree-fund; strongly recommend

Sponsor Funding Request = \$340,357 / CBFWA Funding Recommendation = Recommendation:

Fund for one year. Subsequent funding contingent on programmatic review. This entire set of smolt monitoring projects needs to receive a programmatic review with the goal to create a central data repository, to provide a central facility for providing routine

statistical analysis, and, most crucially, to develop a basin-wide, coordinated design for data collection that is gauged to meet the information needs for management.

Comments:

This well-written proposal clearly addresses the need for this work and its relationship to other projects. The work allows strong collaborative effort with other projects. The objectives and associated tasks are clearly stated and aligned. There are no plans for formal evaluation other than those provided by observing the continued use of the products from this on-going project and the success of the investigators in publishing results. The budget and personnel are not adequately justified. The relation to proposal 8910700 should be better explained. The proposal should state what they are going to do with the CWT, PIT tag, and other data listed in the tasks and objectives.

More than any of the other smolt monitoring proposals, this one clearly identifies the need for coordination. On page 10 it states: "Despite these overwhelming needs, given the high expenditures on tagging and data collection, no agreement on a coordinated information system for anadromous fish data, methods of their analyses, or timely dissemination of information to the public has been agreed upon." The proposal does not suggest a solution. This problem affects the entire smolt monitoring program.

ProjectID: 9008000

Columbia River Basin Pit Tag Information System

Pacific States Marine Fisheries Commission

Short Description: Develop, operate, maintain and enhance a long-term Columbia River Basin database on PIT tag information and provide operations and maintenance support for the collection of PIT tag information at PIT tag interrogation sites.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$1,364,976 / CBFWA Funding Recommendation = \$1,364,976

Recommendation:

Fund for one year. Subsequent funding contingent on programmatic review. This entire set of smolt monitoring projects needs to receive a programmatic review with one of the goals to create a central data repository that includes historical and raw data. They also need to develop a justifiable program-wide design. The various regional data sets should be consolidated with specific protocols for quality control and data collection. Whether this consolidation is done through selecting an existing project to cover this or creating a new site is a policy question. Various analysis efforts should be funded separately from the data collection entity.

Comments:

The programmatic need for operations and maintenance support for collection of PIT tag information is clear. The relationship to many high priority programs is documented. The objectives and activities are clearly listed. Quality assurance goals are clearly specified but no mechanism for evaluation is mentioned. The personnel budget is quite large but little information is provided to evaluate the adequacy of the staffing.

ProjectID: 9701000

P.I.T. Tag System Transition

U.S. Army Corps of Engineers; Pacific States Marine Fisheries Commission; Destron-Fearing; National Marine Fisheries Service and their subcontractors
Short Description: Replaces existing 400 kHz PIT tag interrogation system for juvenile salmonids with a 134.2 kHz frequency, ISO-based system for use within the Columbia River Basin.

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$853,313 / CBFWA Funding Recommendation = \$853,313

Recommendation:

Fund this final year as proposed.

Comments:

The justification for replacing the existing tag interrogation system is convincing. The relationship of this work to other high priority programs is clear. The objectives, however, are too broadly stated and not aligned with specific tasks. Evaluation and monitoring are not addressed in the proposal. It needs more detail on how monitoring will be conducted during the transition period when fish with both types of tags are returning. A detailed time line should be prepared and the work progress monitored.

ProjectID: 9808001

PIT Tag Purchase And Distribution

Pacific States Marine Fisheries Commission

Short Description: Purchase and distribute PIT tags needed for BPA funded projects and track number of tags purchased and dollars spent on a per project basis.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier / ISRP Comparison with CBFWA: na

Sponsor Funding Request = \$ / CBFWA Funding Recommendation =

Recommendation:

Fund for one year. Subsequent funding contingent on programmatic review. This entire set of smolt monitoring projects needs to receive a programmatic review with one of the goals to develop and justify a program-wide design that really is capable of delivering enough data, of high enough precision, to answer the management questions.

Comments:

The project may result in cost reductions for PIT tags needed for BPA funded projects and may also provide better accountability for tag use. However, no monitoring plans or assessment of unwanted side effects are explained. A system for tracking cost savings and improvements in data integrity of the PTAGIS data set should be implemented.

ProjectID: 8331900

New Fish tagging System

National Marine Fisheries Service

Short Description: Determine the biological and technical feasibility of using PIT-tag technology to obtain information on juvenile and adult salmonids. Develop

ancillary equipment to expand the PIT-tag system's capabilities to meet CRB resource stakeholder needs.

ISRP Recommendation - DNF / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-DNF

Sponsor Funding Request = \$1,388,800 / CBFWA Funding Recommendation = \$1,388,800

Recommendation:

Do not fund. The research and development has already gotten too far ahead of implementation in this area. For the moment, the priority should be on deploying the required number of detectors in adult passage facilities so that the accumulation of desperately needed data on adult passage survival rates, and smolt to adult survival rates can accelerate.

Comments:

The programmatic need for the work should be more clearly explained. Putting this work in the context of the related project 9701000, PIT Tag System Transition, would help. The objectives are clearly stated and tasks are appropriately aligned to meet objectives. It is not clear how results will be evaluated nor is it clear that the proposed work can be completed in a timely manner. A detailed time line should be prepared and a monitoring plan implemented. The focus on adult monitoring is welcome, but should be taken much farther. They should be moving beyond feasibility studies and into implementation. A considerable amount of money is being put into PIT tagging without detectors to monitor adults. The proposal should inform the reviewers if the new ISO system is not capable of detecting the old tags. It is not clear if the existing 400 kHz detector they propose to take out of Bonneville is for juveniles or adults. The reviewers understand that there are many PIT tag technologies available worldwide. Considering these available technologies, they should provide a review of the availability and suitability of these systems to the application of monitoring juvenile and adults salmon in the Columbia River basin.

ProjectID: 20012

Develop New Technology For Telemetry And Remote Sensing Of Fish Quality

Oregon Cooperative Fish and Wildlife Research Unit

Short Description: Develop, verify, and field test a new telemetry system (named "FIELD-OP") which is triggered by fixed or mobile transmitter stations to download real-time or stored position, depth, temperature, and fish quality data to receivers.

ISRP Recommendation - Fund / CBFWA Tier 3 / ISRP Comparison with CBFWA: Disagree-fund, but not high priority

Sponsor Funding Request = \$323,690 / CBFWA Funding Recommendation =

Recommendation:

Fund (medium priority)

Comments:

This innovative system may well have applications to high priority regional programs. At present, it is not directly linked to existing projects. There are many technical problems to be overcome before the worth of the system for examining meaningful research questions is established. The objectives present a clear progression. Tasks are clearly defined but

details for monitoring and evaluating results are inadequate. Proposed statistical methods for the example research question are not appropriate. Some of the examples of research questions that are proposed for addressing with the new system ignore confounding factors. The quality of a scientific discipline is directly proportional to the quality of its measurements. Advances in science follow soon after new measurement techniques are developed, as the field of genetics has so often proved in the last ten years. Field studies of the impact of ambient conditions on fish are usually circumstantial. Reliance on statistical inference and speculation about the relations between ambient conditions and fish behavior and physiology can not substitute for direct measurement. The ability to measure ambient conditions with respect to individual fish would be a great breakthrough. The PI and his associates appear well qualified and suited to the tasks. But this is a developmental program, which seeks to make great strides in miniaturization and integration of functions. The exact outcome from the project cannot be predicted with certainty. The breakthrough would be to measure the relation of ambient conditions on stress. To raise the priority of the proposal, they need to address the sensitivity of the microprobe to detect meaningful differences in stress indicators under the conditions of the proposal. There should be a link of this project to survival studies.

Coded Wire Tag

ProjectID: 20543

Coded Wire Tag Program

Washington Dept. Fish and Wildlife, Oregon Dept. Fish and Wildlife, U.S. Fish and Wildlife Service, Pacific States Marine Fisheries Council

Short Description: Apply coded-wire tags to production groups of chinook and coho salmon at WDFW, ODFW, and USFWS Columbia River Hatcheries and sample fisheries and spawning grounds, to conduct basin-wide stock assessment.

ISRP Recommendation - na / CBFWA Tier na / ISRP Comparison with CBFWA: Umbrella Proposal

Sponsor Funding Request = \$ / CBFWA Funding Recommendation = Recommendation:

An ongoing advisory position in statistics is recommended for the “umbrella” organization.

Comments:

The coded-wire tag (CWT) program is fundamental to the management of chinook and coho salmon coast-wide. Before the development of the CWT, catches of specific stocks were unknown and sustainable exploitation rates of stocks could not be assessed (other than by the trend in their spawning escapements). Trends in spawning abundance may result, however, from over-exploitation or decreased survival. The development of the CWT program and the establishment of a coast-wide recovery program allowed for the development of quantitative assessments of life history statistics for chinook, coho, and steelhead. As noted in the proposal, this tool allows estimation of catch and age distributions in fisheries, exploitation rates by fishery, and estimation of annual marine survival rates. By the early 1980's, the CWT had become an essential tool for stock assessment and management (including hatchery assessments), and research.

As this umbrella proposal describes, the program requires two components: tagging of representative groups of fish (by species, stock, brood year, etc.), and recovery of the tags in fisheries and spawning escapements. In the mid-1970's, a coast-wide agreement requested all recovery agencies to sample 20% of commercial salmon catches for the recovery of CWT. While this percentage was not based on any statistical principle, it has been adopted as the "standard" rate of sampling in catches. As in any mark-recapture program, however, the rates of tagging and recovery should be dependent on the objective of the program. Consequently, the CWT programs under this umbrella proposal are advised to review the "30 observed recoveries" guideline that is quoted. That value was determined during a period of good marine survival and well supported sampling programs. During periods of poor marine survival and/or reduced sampling (due to budget constraints), agencies would be well advised to increase the numbers of tags released, depending on the accuracy and precision desired in their programs.

The rationale for this proposal is to provide comprehensive stock assessment and hatchery production monitoring to regional management entities and all researchers. The integration of tagging plans to ensure "representative" coverage each year is a major advancement that will substantially improve long-term assessments in the basin. As noted above, a related task maybe to develop a mark-recapture design model which determines the numbers of marks to release given data on projected survival rates, sampling rates and costs, and objectives of the programs.

The reviewers identified three concerns about this umbrella proposal:

1. This proposal requests $\$2.75 \times 10^6$ (although the budget form says "see individual projects"); however, the amounts listed in the individual projects are less in total. Further, the Cost Sharing summary in the umbrella proposal is not consistent with the summary in the Recovery proposal.
2. The cost of the umbrella organization is not identified separately from the individual programs. Does this explain the cost difference identified above or is there no related costs for this organizational work, etc? These could be important functions and should be identified as managerial costs of the Regional program.
3. It is impossible to place tagging requests in context of the CWT program since we are only notified of the requests of additional tagging. How can this be examined in a technical context without a comprehensive description of the supported tagging programs and related objectives? Do the current tagging programs address all regional concerns, or are the best tagging programs being supported, etc.?

While the umbrella proposal is a useful approach, the clarity of presentation would be dramatically enhanced by the use of a flow chart or other device to visually depict overall program structure and how subprograms fit into that structure, overall budget, etc. Sub-proposals should not repeat the language and information contained in the umbrella proposal. Two sub-proposals should be adequate, one for catch estimation and recovery programs and the other for tagging. The latter should put requests for future tagging in the context of regional marking priorities (CWT and PIT tags) and collate all additional

tagging requesting support from BPA. Contract managers could allocate budgets for individual agencies.

Programmatic:

The entire CWT program needs a programmatic review at regular intervals to confirm priorities and efficacy. We strongly recommend a technical/peer review to confirm the validity of the critical assumptions (e.g. current adequacy of the 20% sampling rate goal, and 30 tag recoveries per group, adequacy of using hatchery stocks as surrogates for monitoring wild stocks). Other key assumptions also need to be verified: 1) marked (CWT) fish suffer the same natural mortality as unmarked fish, and 2) marked fish do not lose their marks. Further, an ongoing advisory position in statistics is recommended for the “umbrella” organization. This position could improve the technical basis of our information and possibly pay for itself through optimization of programs. It is also recommended that the “CWT Oversight Committee” determine “standard” cost guidelines for CWT marking and recovery, and approve annual departures from these guidelines based on local program requirements, and possibly manage the actual purchase of tags to avoid the overhead imposed by the agencies. Otherwise reviewers of proposals cannot comment on budgets without much more detailed information. For example, we note several different charges for overhead, including on the simple purchase of CWT?

ProjectID: 8201300

Coded-Wire Tag Recovery

Pacific States Marine Fisheries Commission

Short Description: Recovery of CWTs from salmonids sampled in the commercial and sport fisheries (Columbia River and Oregon ocean), spawning grounds and hatcheries. Provides critical stock identification information required to evaluate the status of Columbia Basin stocks.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$1,923,498 / CBFWA Funding Recommendation = \$1,923,498

Recommendation:

Fund for one year. Subsequent funding contingent on a programmatic review. This entire set of smolt monitoring projects needs to receive a programmatic review with one of the goals to develop and justify a program-wide design that really is capable of delivering enough data, of high enough precision, to answer the management questions. In the future, this should be a candidate for a multi-year review cycle with review required only if major changes are made to CWT tagging, recovery or catch estimation procedures.

Comments:

This project consists of a highly diversified set of objectives that are essential to the application of the CWT program and assessment in the Columbia River basin. The proposal describes the extent and nature of PSMFC activities and provides an impressive list and accounting of other sources of income for CWT recovery (\$3.9 x 10⁶ listed). Given the huge numbers of CWTs that are released from Columbia River hatcheries, it certainly seems appropriate that BPA makes a large contribution to the recovery and

database management process. BPA supports just less than one-half of the cost of these programs. This is a reasonable investment for quantitative assessments and a basis for coast-wide management of these stocks. It is not possible to comment on the proposed costs without more detailed information of the CWT requirements and specific costs for applying and recovering them. Much of the material presented in this proposal could have been presented in the umbrella proposal (e.g., material at p. 498).

ProjectID: 8906900

Annual Stock Assessment - Cwt (Odfw)

Oregon Department of Fish and Wildlife

Short Description: Apply coded-wire tags to production releases of coho and chinook salmon at ODFW Columbia Basin hatcheries for stock assessment of hatchery and wild salmon populations. Evaluate alternative marking techniques.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$215,800 / CBFWA Funding Recommendation = \$215,800

Recommendation:

Fund for one year. Subsequent funding contingent on a programmatic review. This entire set of smolt monitoring projects needs to receive a programmatic review with one of the goals to develop and justify a program-wide design that really is capable of delivering enough data, of high enough precision, to answer the management questions. In the future, this should be a candidate for a multi-year review cycle with review required only if major changes are made to CWT tagging, recovery or catch estimation procedures.

Comments:

Projects 89-069, 89-065, and 89-066 are essentially the same proposal for different agencies (ODFW, USFWS, WDFW respectively). Each project “ensures” that all hatchery chinook and coho production releases have a representative CWT group associated with the release; provides for recovery of CWT in the spawning escapements, compilation of the data; and for ODFW (proposal 89-069), it provides for investigating alternative tags. These projects provide the tagging essential for routine stock assessment data. There is, however, very little to review in these proposals since the text largely reiterates the umbrella proposal and the coverage of tagging by facilities, geographic area, and species is not presented. Funding agencies may wish to request such a list before agreeing to additional tagging. They are again advised to examine the objective of each program and the expected numbers of recoveries before finalizing a tagging schedule. It is not possible to comment on the proposed costs without more detailed information of the CWT requirements and specific costs for applying and recovering them in this project.

ProjectID: 8906500

Annual Stock Assessment - Cwt (Usfws)

U.S. Fish and Wildlife Service

Short Description: Apply coded-wire tags to production groups of salmon at federal hatcheries not tagged by other programs (4 hatcheries). Prepare report

on survival trends and distribution of anadromous stocks from 11 federal hatcheries for basin-wide stock assessment.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$110,586 / CBFWA Funding Recommendation = \$110,586

Recommendation:

Fund for one year. Subsequent funding contingent on a programmatic review. This entire set of smolt monitoring projects needs to receive a programmatic review with one of the goals to develop and justify a program-wide design that really is capable of delivering enough data, of high enough precision, to answer the management questions. In the future, this should be a candidate for a multi-year review cycle with review required only if major changes are made to CWT tagging, recovery or catch estimation procedures.

Comments:

The major decrease in funding requested (from \$399,460 in 1999 to \$110,586 in 2000) is due to work transferred to other projects or funding sources. However, one concern is the forecasted 10% increase in costs each year, compared to lower projected increases (e.g. 0% to 3%) in most other similar projects. It is not possible to comment on the other proposed costs without more detailed information of the CWT requirements and specific costs for applying and recovering them in this project. More information is required on the past success of this project. For example, is this project recovering sufficient numbers of tagged fish to successfully conduct annual assessments? See comments on CWT umbrella.

ProjectID: 8906600

Annual Stock Assessment- Coded Wire Tag Program (Wdfw)

Washington Department of Fish and Wildlife

Short Description: Apply coded-wire tags to production groups of chinook and coho salmon at WDFW Columbia River Hatcheries and monitor hatchery salmon survival trends, evaluate hatchery techniques and provide information to Basin wide stock assessment.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$373,852 / CBFWA Funding Recommendation = \$373,852

Recommendation:

Fund for one year, but the overhead on CWT purchases should be examined. Subsequent funding contingent on a programmatic review. This entire set of smolt monitoring projects needs to receive a programmatic review with one of the goals to develop and justify a program-wide design that really is capable of delivering enough data, of high enough precision, to answer the management questions.

Comments:

This project has not met the objectives for recovery rates of CWT coho for many years. The requested increase in budget to address this problem by tagging more coho appears appropriate. The proposed large charge for overhead on purchase of CWTs should be

examined. The actual overhead costs for bulk-purchases of CWTs is probably much less. It might be much more cost-effective for the BPA to purchase the tags and just provide them to the agencies. See comments on CWT umbrella.

PATH and PATH related

ProjectID: 9600600

Facilitation, Technical Assistance And Peer Review Of Path

ESSA Technologies Ltd.

Short Description: Test hypotheses underlying key salmon recovery management decisions, develop decision analysis to evaluate alternative management strategies, and assist in designing research, monitoring and adaptive management experiments.

ISRP Recommendation - DNF / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-DNF

Sponsor Funding Request = \$450,000 / CBFWA Funding Recommendation = \$450,000

Recommendation:

Do not fund. PATH, in its present form, with its present mission, should be phased out. A simpler process could be created to meet the continuing need for evaluation of the limited data now available to address management questions relative to the hydro biological opinion. A more ambitious and comprehensive scientific consensus process should be developed, somewhat along the lines of PATH, to address data collection design issues for the basin, to identify data needs that are critical to the actual management questions, and to ensure that data needs are met, to the extent practical, as quickly as possible, in a coordinated and efficient manner.

Comments:

This proposal does not clearly describe PATH organizational structure. Historically, there was a need for facilitation of some sort of scientific consensus process with respect to modeling. But with respect to the original question, deciding between two competing passage mortality models, the answer has been delivered: the available data, evidently, cannot discriminate between the models. To continue PATH, there needs to be a definition of a new mission. Logically, if the available data are not sufficient to answer the management questions, the focus of scientific consensus building in the basin should shift to design of data collection programs that will deliver data that can answer the questions. In some ways, the facilitation, participation, consensus, and advisory structures evolved by PATH can serve as useful models for the future. But it is not a foregone conclusion that the exact structure and personnel of PATH should be replicated in toto for addressing the new mission. Given the limitations of the data available to PATH, there are concomitant limitations on the conclusions drawn by PATH. To this extent, the PATH process has not simplified the information for policy makers. The sub-proposals are variable in their quality. Some do not add significant information on the coordination of all elements of the project and on the participation and input of individual members. The sum of commitments of person/years of the principal investigators to these projects is not clear.

ProjectID: 9600800

Stufa Participation In A Plan For Analyzing And Testing Hypotheses (Path)

Oregon Department of Fish and Wildlife

Short Description: Test hypotheses underlying key salmon recovery management decisions, develop decision analysis to evaluate alternative management strategies, and assist in designing research, monitoring and adaptive management experiments.

ISRP Recommendation - DNF / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-DNF

Sponsor Funding Request = \$745,131 / CBFWA Funding Recommendation = \$745,131

Recommendation:

Do not fund. PATH, in its present form, with its present mission, should be phased out. A simpler process could be created to meet the continuing need for evaluation of the limited data now available to address management questions relative to the hydro biological opinion. A more ambitious and comprehensive scientific consensus process should be developed, somewhat along the lines of PATH, to address data collection design issues for the basin, to identify data needs that are critical to the actual management questions, and to ensure that data needs are met, to the extent practical, as quickly as possible, in a coordinated and efficient manner.

Comments:

The need for Stufa participation is not very well identified in the proposal. Plans for evaluation of results and identification of measurable objectives are poorly developed. The contribution of the personnel to the project is poorly described. This proposal repeats the information from the umbrella proposal and does not provide adequate information on results to date and their input into the PATH process.

ProjectID: 9600801

Technical Support For Path

National Marine Fisheries Service

Short Description: Test hypotheses underlying key salmon recovery management decisions, develop decision analysis to evaluate alternative management strategies, and assist in designing research, monitoring and adaptive management experiments.

ISRP Recommendation - DNF / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-DNF

Sponsor Funding Request = \$75,000 / CBFWA Funding Recommendation = \$75,000

Recommendation:

Do not fund. PATH, in its present form, with its present mission, should be phased out. A simpler process could be created to meet the continuing need for evaluation of the limited data now available to address management questions relative to the hydro biological opinion. A more ambitious and comprehensive scientific consensus process should be developed, somewhat along the lines of PATH, to address data collection design issues for the basin, to identify data needs that are critical to the actual management questions, and to ensure that data needs are met, to the extent practical, as quickly as possible, in a coordinated and efficient manner.

Comments:

The programmatic need for NMFS participation is not clearly defined in the proposal. They need to identify the role of this proposal in the umbrella proposal for PATH.

ProjectID: 9601700

Provide Technical Support For Path

BioAnalysts, Inc.

Short Description: BioAnalyst, Inc. staff provide technical support for modelling analyses in PATH. We assemble data and estimates for use in construction, calibration and validation of models used in PATH. We work with modelers and review their analyses and output.

ISRP Recommendation - DNF / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-DNF

Sponsor Funding Request = \$109,000 / CBFWA Funding Recommendation = \$27,221

Recommendation:

Do not fund. PATH, in its present form, with its present mission, should be phased out. A simpler process could be created to meet the continuing need for evaluation of the limited data now available to address management questions relative to the hydro biological opinion. A more ambitious and comprehensive scientific consensus process should be developed, somewhat along the lines of PATH, to address data collection design issues for the basin, to identify data needs that are critical to the actual management questions, and to ensure that data needs are met, to the extent practical, as quickly as possible, in a coordinated and efficient manner.

Comments:

The proposal does not contain enough information to be evaluated. The contributions and deliverables are not clearly identified. They need to identify the role of this proposal in the umbrella proposal for PATH. The objectives are extremely vague. In the narrative, they do not expand on their role and implementation of objectives.

ProjectID: 9800100

Analytical Support-Path And Esa Biological Assessments

Hinrichsen Environmental Services

Short Description: Participate in PATH. Provide biological rationale for hypotheses, and develop and test model structures that identify key uncertainties in salmon life-cycle survival processes. Design alternative adaptive management experiments that maximize learning.

ISRP Recommendation - DNF / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-DNF

Sponsor Funding Request = \$125,000 / CBFWA Funding Recommendation = \$119,900

Recommendation:

Do not fund. PATH, in its present form, with its present mission, should be phased out. A simpler process could be created to meet the continuing need for evaluation of the limited data now available to address management questions relative to the hydro biological opinion. A more ambitious and comprehensive scientific consensus process should be developed, somewhat along the lines of PATH, to address data collection design issues for the basin, to identify data needs that are critical to the actual management questions, and to ensure that data needs are met, to the extent practical, as quickly as possible, in a coordinated and efficient manner.

Comments:

The proposal is well written and clearly identifies the link between the objectives and programmatic needs. This proposal describes very clearly what is being pursued, but it is unclear how it will be used in the PATH analysis. It appears that such as chaotic dynamics will not simplify the modeling; thus, it is contrary to the SRP recommendation that the PATH models are already too complicated.

ProjectID: 9303701

Stochastic Life Cycle Model Technical Assistance

Paulsen Environmental Research Ltd

Short Description: Provide technical assistance to PATH participants in statistical analyses of hypotheses regarding past declines of ESA-listed stocks, design of adaptive management actions, and the future effects of salmonid management actions

ISRP Recommendation - DNF / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-DNF

Sponsor Funding Request = \$180,000 / CBFWA Funding Recommendation = \$70,000

Recommendation:

Do not fund. PATH, in its present form, with its present mission, should be phased out. A simpler process could be created to meet the continuing need for evaluation of the limited data now available to address management questions relative to the hydro biological opinion. A more ambitious and comprehensive scientific consensus process should be developed, somewhat along the lines of PATH, to address data collection design issues for the basin, to identify data needs that are critical to the actual management questions, and to ensure that data needs are met, to the extent practical, as quickly as possible, in a coordinated and efficient manner.

Comments:

The proposal is well written and clearly identifies the link between the objectives and programmatic needs. It is clear what he is doing and intends to pursue. He does a good job documenting his previous efforts but it is not clear how these efforts have been applied to the PATH effort. The absence of publications, given the significance of the topics that are claimed to have been addressed, is of concern. He should publish his results in peer reviewed literature. He seems to have the only proposal that addresses the recommendations of the SRP to simplify the modeling.

ProjectID: 8910800

Monitor And Evaluate Modeling Support

University of Washington

Short Description: Test hypotheses underlying key salmon recovery management decisions, develop decisions analysis to evaluate alternative management strategies, and assist in designing research monitoring and adaptive management experiments.

ISRP Recommendation - DNF / CBFWA Tier 3 / ISRP Comparison with CBFWA: Agree-DNF

Sponsor Funding Request = \$411,300 / CBFWA Funding Recommendation =

Recommendation:

Do not fund. PATH, in its present form, with its present mission, should be phased out. A simpler process could be created to meet the continuing need for evaluation of the limited data now available to address management questions relative to the hydro biological opinion. A more ambitious and comprehensive scientific consensus process should be developed, somewhat along the lines of PATH, to address data collection design issues for the basin, to identify data needs that are critical to the actual management questions, and to ensure that data needs are met, to the extent practical, as quickly as possible, in a coordinated and efficient manner.

Comments:

The past programmatic need for this work was clearly stated. The continuing need is not clear. The model is not validated. This is a key issue if the differences between the competing models are still unresolved.

ProjectID: 9700200

Path - Uw Technical Support

University of Washington

Short Description: Test hypotheses underlying key salmon recovery management decisions, develop decision analyses to evaluate alternative management strategies, and assist in designing research monitoring and adaptive management experiments.

ISRP Recommendation - DNF / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-DNF

Sponsor Funding Request = \$301,081 / CBFWA Funding Recommendation = \$182,389

Recommendation:

Do not fund. PATH, in its present form, with its present mission, should be phased out. A simpler process could be created to meet the continuing need for evaluation of the limited data now available to address management questions relative to the hydro biological opinion. A more ambitious and comprehensive scientific consensus process should be developed, somewhat along the lines of PATH, to address data collection design issues for the basin, to identify data needs that are critical to the actual management questions, and to ensure that data needs are met, to the extent practical, as quickly as possible, in a coordinated and efficient manner.

Comments:

Relates closely to 8910800. Why is this separate from 9800600? There should be a better description of the indirect costs to the UW and the direct costs for office space.

ProjectID: 9800600

Path Technical Support - James J. Anderson

James J. Anderson Consulting

Short Description: Develop hypotheses underlying key salmon recovery management decisions, develop decision analyses to evaluate alternative management strategies, and assist in designing research monitoring and adaptive management experiments.

ISRP Recommendation - DNF / CBFWA Tier 3 / ISRP Comparison with CBFWA: Agree-DNF

Sponsor Funding Request = \$50,000 / CBFWA Funding Recommendation = Recommendation:

Do not fund. PATH, in its present form, with its present mission, should be phased out. A simpler process could be created to meet the continuing need for evaluation of the limited data now available to address management questions relative to the hydro biological opinion. A more ambitious and comprehensive scientific consensus process should be developed, somewhat along the lines of PATH, to address data collection design issues for the basin, to identify data needs that are critical to the actual management questions, and to ensure that data needs are met, to the extent practical, as quickly as possible, in a coordinated and efficient manner.

Comments:

Similar to project 8910800. Why is this separate from 9800600?

ProjectID: 8910700

Statistical Support For Salmonid Survival Studies

University of Washington

Short Description: Improve monitoring and evaluation capabilities by developing better measurement tools and study designs to estimate juvenile and adult survival. Develop statistical methods to determine salmonid survival rates and survival relationships.

ISRP Recommendation - DNF / CBFWA Tier 3 / ISRP Comparison with CBFWA: Agree-DNF

Sponsor Funding Request = \$184,930 / CBFWA Funding Recommendation = Recommendation:

Do not fund. PATH, in its present form, with its present mission, should be phased out. A simpler process could be created to meet the continuing need for evaluation of the limited data now available to address management questions relative to the hydro biological opinion. A more ambitious and comprehensive scientific consensus process should be developed, somewhat along the lines of PATH, to address data collection design issues for the basin, to identify data needs that are critical to the actual management questions, and to ensure that data needs are met, to the extent practical, as quickly as possible, in a coordinated and efficient manner.

Comments:

There are no plans for formal evaluation other than those provided by observing the continued use of the products from this on-going project and the success of the investigators in publishing results. This appears to be redundant with 9105100. Narrative calls it complementary, but perhaps these two projects need to be combined. See

comments on 9105100. The principal investigator is listed as .17 FTE but no other personnel are listed. There is inadequate detail on what the principal investigator will do. There should be a better description of indirect costs to the UW and direct costs for office space.

Innovative Bypass Proposals and Related Research

ProjectID: 20054

Evaluate Effects Of Hydraulic Turbulence On The Survival Of Migratory Fish

Oak Ridge National Laboratory

Short Description: Design, construct, and operate a laboratory apparatus to study effects of turbulence on fish survival and swimming performance. Intensities and scales would be the same as within hydroelectric turbines, fish bypass systems, spill, and vessel passage.

ISRP Recommendation - Fund in Part / CBFWA Tier 3 / ISRP Comparison with CBFWA: Disagree-fund in part

Sponsor Funding Request = \$341,000 / CBFWA Funding Recommendation = Recommendation:

Fund in part, objectives 1 and 2a. (completion of literature review and design of the equipment) (innovative). Subsequent funding should be based on review of results of the first phase. Subsequent funding should also require a study of fish behavior in response to turbulent flow and associated characteristics (e.g. noise). (medium priority)

Comments:

This new proposal is an innovative, experimental approach to directly examining the effect of turbulence on fish. The proponent has access to a unique engineering facility (in Massachusetts) through which they propose to construct a test apparatus and test the biological response of fish to varying levels of turbulence. The proposal indicates that construction and testing will be completed within one year and that the test apparatus will be modular for transport. Initial biological tests would not involve Pacific salmonids but the apparatus could be moved if species specific differences are observed. However, the reviewers identified several concerns about the proposal.

The proponent does not provide a convincing case that turbulence is likely the main, or even a major, cause of mortality, relative to other possible explanations. Other potential sources of injury/mortality should be identified and discussed. The scientific design is not sufficiently described to allow full evaluation, and the proposed activities are not clearly aligned to achieve the objectives. The measurables and monitoring plan are not identified in sufficient detail to fully evaluate. Many critical components (e.g. design of equipment that will be used to assess swim performance of fish) are not described in sufficient detail. The method, which will be used to determine the effects of turbulence on susceptibility to predation, is not described. The proposal does not explain how one of the most important effects of turbulence (duration of exposure) will be examined. No details are provided concerning the numbers of sizes of fish that might be used in proposed experiments.

It is questionable that all the proposed objectives can actually be accomplished in one year. Objective 1, – assess state-of-the-art in turbulence studies – should have been carried out prior to proposal submission. Typically, one assumes that a PI is aware of the current state-of-the-art in his or her specialized field.

Some concern was expressed about the use of species other than Pacific salmonids, but these comparisons could be undertaken later if the apparatus and methods proved informative. The specific species that would be examined in East Coast settings would not include Pacific salmon. Instead, the author proposes use of eels, American shad and blueback herring that would surely be of much less interest to BPA. Essentially no references are provided.

If this project is supported by BPA, then it is recommended that only the first two phases be funded initially (in depth literature review and report, and detailed design of the test apparatus and overall experimental design). Additional funding should not be provided for construction or testing of the test equipment until the above are completed and fully evaluated.

In support of the proposal, the lead PI seems to possess relevant credentials to carry out such research (see 1997 "Reviews in Fisheries Science" article). If he were to actively collaborate with a Pacific salmon biologist, he might carry out some interesting and useful research. No such effort at collaboration is evident in their proposal. This is an important area to research, however, the proposed costs appear very high relative to the deliverables.

ProjectID: 20060

Juvenile Anadromous Fish Prototype-Scale Evaluation Facility

Northwest Hydraulic Consultants, Inc.

Short Description: Behavioral and physiological prototype-scale juvenile fish behavior and injury test facility capable of simulating surface and submerged outlet passage routes at prototype scale hydraulic head.

ISRP Recommendation - DNF / CBFWA Tier 3 / ISRP Comparison with CBFWA: Agree-DNF

Sponsor Funding Request = \$127,700 / CBFWA Funding Recommendation = Recommendation:

Do not fund. The proposal is inadequate and the potential costs are not programmatically justified before examining alternative proposals.

Comments:

This proposal is similar to Project 20054 in developing an experimental facility to examine the effect of turbulence on fish. Project 20060, however, is largely for regional consultation, facility design, and site selection. The proposed approach is attractive, but the proposal is not sufficiently convincing. It is very short, has few references, no resumes, and limited information on what might be accomplished by the proposed research. For example, there is no indication provided of how much support there may be for development of a regional test facility, which would clearly be required for this approach to succeed.

If parts of this project are supported, these reviewers suggest initially only the first part of the proposal should be funded (i.e. identify research needs and the potential broader

interest/support for a regional test facility). If this initial stage is successful and regional agreement is reached, then provide support for the subsequent design and site selection.

ProjectID: 20068

Numerical Study Of Flow-Field Structure On Salmonid Migration

University of Michigan, Ann Arbor, MI.

Short Description: This proposal seeks to develop quantitative statistical correlations in-between the flow field information (obtained using a three-dimensional numerical model) and available salmonid out-migration trajectory data.

ISRP Recommendation - DNF / CBFWA Tier 3 / ISRP Comparison with CBFWA:

Agree-DNF

Sponsor Funding Request = \$94,640 / CBFWA Funding Recommendation =

Recommendation:

Do not fund. The idea continues to be attractive, but the proposal is not strong enough to support funding.

Comments:

This proposal is also an innovative approach to examining the response of fish to turbulence. However, unlike the previous proposals (#20054, #20064) this project involves “state-of-the-art” 3-D computer modeling of flow fields in segments of the river. The proponents suggest that “existing field data for salmonid movement will be used to track fish-trajectories in three-dimensional space.” Advanced statistical methods would be used to examine how fish utilize these flow fields.

Unfortunately the reviewers found this proposals difficult to understand and were uncertain what the results/deliverables would be. The utility of the proposed work to salmon problems was not clearly identified or convincing and the linkages that are claimed to other BPA/FWP projects are not obvious or adequately explained. The proponents describe, and likely can successfully deliver, a 3-D model, but the claimed relationship of this model and its utility to addressing salmon problems was not convincing. The measureables for the model, such as how it will calibrate or ground truth, are not explained. The proposed methods for development of the model are described, but the methods and scientific design for the salmon data and measurements are not explained. The proponent appears to assume that the necessary salmon data are readily available on the time and space scales required.

While the model has been applied in small sections of the Mid-Columbia, we have two serious reservations about this proposal: (a) the actual resolution of the fish field data will most likely be substantially lower (i.e., only rate of movement through a river section) than expected or needed; and (b) that the complexity of many river sections will limit the spatial resolution in flow simulations (as noted by the authors, page 833). If the former is understood and is not considered a limitation, then the proposal did not comment on that significant issue. This proposal would hugely benefit if the PI were to directly collaborate with a fishery biologist who has special interest and expertise in salmon migration and who has been collecting temperature/depth/location sensor data for fish moving through the Columbia River.

ProjectID: 20099

System For Salmon Migrating Through Dams

Krick Salmon Survival Systems

Short Description: System to reduce losses of Salmon Migrating Through Dams.

ISRP Recommendation - DNF / CBFWA Tier 3 / ISRP Comparison with CBFWA: Agree-DNF

Sponsor Funding Request = \$145,000 / CBFWA Funding Recommendation = Recommendation:

Do not fund, technically inadequate, little likelihood of success.

Comments:

It is difficult to evaluate this proposal within a scientific review context. The proposal does not present a technical background or evidence for major assumptions in the proposal. For example, what is the evidence that “trained” hatchery fish would respond to feeding stimuli after release into the wild? Is there any evidence of “hatchery pathfinders to lead wild juveniles” into collectors? Increasing the survival of hatchery fish only would not be consistent with fish passage objectives for the Basin. Further, it is not clear how the proposal would reduce adult passage mortality.

In terms of our scientific review:

No references are provided. The authors support the proposal only with logical arguments.

The proposal depends on many unsupported and possibly invalid assumptions. There is no evidence provided that the proponent has even investigated the feasibility of the approach or the necessary assumptions (e.g. by conducting a literature review).

The objectives of the proposed work are not adequately described. For example, the proposal states that a tracking system will be built, but no details of this system are provided to evaluate it.

The proposal is very vague on the measureables that will be used to monitor and evaluate the success of the project. For example, there is no indication that the fish will be counted or video taped to confirm the success or failure of the new collectors.

There is also no evidence provided that the main proponent has a track record of previous success (e.g. peer-reviewed publications, contracts, etc.) in conducting this type of project.

In general the approach is poorly described and there is not enough information to fully evaluate it. For example, the hatchery which will be used to train the fish is not identified, the design of the new collectors is vague, and no details are provided of the methods that will be used to track the fish. The proposed number of PIT tags that will be used is also too few to accomplish the objectives. To proceed with his idea, the proponent should begin to develop a logical case. For example, start by training a test population of hatchery fish and then try to attract them to a collector device after release. We would also recommend collaboration with scientifically trained personnel to assist with preparation of the approaches (e.g., hypotheses or at least presentation of evidence) and

proposals. At this time, however, there is inadequate technical basis for supporting this proposal.

ProjectID: 20110

Develop Wheels, Pools and Falls Approach for Fish Passage at Dams.

Sun Mountain Reflections

Short Description: Conduct an Environmental Science Analysis using the Wheels, Pools, and Falls approach to transform the dam spillways into a series of pools and falls designed for continuous safe passage in water deemed safe by water quality standards for all aquatics.

ISRP Recommendation - DNF / CBFWA Tier 3 / ISRP Comparison with CBFWA: Agree-DNF

Sponsor Funding Request = \$198,570 / CBFWA Funding Recommendation = Recommendation:

Do not fund. The proposal does not provide adequate scientific justification although the idea is still attractive and may have merit programmatically.

Comments:

While this proposal is weaker on the science components, it presents an innovative idea that has a logical appeal and apparently some support in the COE. This new idea exemplifies the adage “a picture is worth a thousand words”. While the proponent suggests that the first stage of this work is the examination of natural systems (presumably the research component), the real challenge to this idea would seem to be the engineering of the spillways and flow control. The costs of changing existing dams to the pools and falls approach would presumably be very expensive. This approach might therefore be more attractive for any new dams that are built, or as an alternative to removing or preaching existing dams to improve salmon survival.

Within a scientific review process, this proposal is technically inadequate. For example, (1) the PI provides an inadequate vita; (2) there are no, or only vague, references for salmon mortality statistics; (3) much of the text consists of irrelevant background material; (4) the “key” document appears to be the PIs “WPF” report, but no details or drawings are provided from that important document; and (5) the budget is much too vague to support (\$50k to CRITFC and \$50k for an unspecified panel of “experts” for unspecified services).

One potential serious difficulty in the proposed approach is that the study of current natural pools and falls in most cases will not provide data that can be used to identify appropriate scales, sizes, velocities, turbulence, etc. for new pool and falls at dams. The reason is that nature is not designed and changes over time, what exist may not represent what the animal adapted to. Further, how would the investigator know that the fish are exposed/experience the flows, turbulence, etc. that was measured. In natural systems, animals avoid those extremes. Another potential problem that is not addressed is a possible undesirable effect of the pools and falls approach on salmon survival, resulting from creation of ideal new opportunities and locations for predators to feed on salmon. For example, northern squawfish seem to avoid areas of high current velocity, while these high velocity areas may provide some protection for salmon. Therefore, squawfish might prefer and accumulate and prey more heavily on salmon in the new artificial pools proposed in this project. The natural simplicity of this idea was appealing to the reviewers, but the emphasis should be on the engineering feasibility aspects.

ProjectID: 9204101

Lower Columbia River Adult Study

U.S. Army Corps of Engineers

Short Description: Assess the success of adult salmon, steelhead and lamprey passage through the Lower Columbia River hydropower system and into tributaries. Evaluate the effects on adult passage of specific flow and spill conditions and various adult passage improvements.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$200,000 / CBFWA Funding Recommendation = \$

Recommendation:

Fund for one year. Subsequent funding contingent upon full reporting of results from previous work and association of results to the Fish and Wildlife Program. (High priority)

Comments:

This project is a large scale study of up-stream movement of adults but one that BPA provides only limited support (\$200K, 13% of total). The ISAB's recent report on Adult Passage (ISRP 99-2) clearly indicates that this research is essential and that this investment is justified. Given the substantial COE funding and the relatively modest request from BPA, it may be appropriate to continue funding the research even though the proposal itself would not be rated as "excellent".

This proposal clearly describes the proposed and on-going work. However, the need for this additional work is not clear due to limited reporting of the results of previous work. In particular, insufficient information is provided on the results of the major (apparently almost identical) project that was completed during 1995-1998. The objectives are clear, but the measureables are not adequately described. An example would be the number of radio-tagged fish required to address the problem and obtain statistically significant results, based on previous work that has been done. The assumptions required by the experimental approach are not clearly identified, such as the strengths and weaknesses of the radio-tagging method (e.g. tag loss rates, malfunction rates, limitations on accuracy due to location of receivers, other potential sources of tag loss between dams, the possibility that tagged fish are not actually representative of the behavior and/or survival of untagged fish, etc.).

There are numerous typos in the references and in the text; there is unsatisfactory explanation of methods used to estimate the percentage of tagged fish that pass dams (are all "losses" assumed to be mortalities?); and the proposal's vaguely "adaptive" structure (tag or not tag during a given year depending on flow conditions) make it impossible to judge the merits of the proposed budget. If it has not already been done, it is advisable to test and confirm that tagged fish behave and perform the same as untagged fish (e.g. by using side-by-side swim endurance tests of tagged and untagged fish).

Predators and Competitors

ProjectID: 9007700

Northern Pikeminnow Management Program

Pacific States Marine Fisheries Commission

Short Description: Reduce predation on juvenile salmonids by implementing fisheries to harvest northern pikeminnow in the mainstem Columbia and Snake rivers. Monitor effects of fisheries on predation by northern pikeminnow and other resident fish.

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$3,306,000 / CBFWA Funding Recommendation = \$2,506,000

Recommendation:

Fund, but this project may benefit from an in-depth cost-benefit analysis with consideration of alternative methods of predator control or alternative strategies of deliveries.

Comments:

This proposal is a great job on what must be a continuing controversial project to justify. They convince us of the technical merits of this program. The proposal writing is excellent, the arguments that relatively low exploitation rates (10%) can have and have had important effects on reducing squawfish predation seem well supported, and the number of scholarly publications that have resulted from the ongoing program is impressive. This publication indicates good management of past activities and continued inspection of results. It was unfortunate, however, that several of the key references were not yet available or that supporting data was not presented. For example, estimation of the exploitation rates on the pikeminnow was frequently cited but supporting data was not presented.

Given the strength of the technical presentation and the size of this project's budget, it is to be expected that many of the comments from reviewers concerned the budget. For example, not all of the component projects appear to be equally successful and it is recommended that the budget request be broken down by sub-project (reward sport fishery, dam angling and site specific fishing) to allow better cost/benefit analyses. The annual costs for personnel and administration/delivery appear to be too high and should be carefully examined. One reviewer commented "that it is probably a misnomer to refer to the bounty-fishing as a "sport-reward" fishery. Has an economist taken a look at the dynamics and livelihood of the participants in the bounty fishery?"

Due to the high annual cost in this project, reviewers suggest that it may be time to creatively re-think how this program could be delivered. Given that squawfish are long-lived and slow growing, and that the number of squawfish that are being removed appears to be declining in recent years, a cost/benefit analyses should be conducted to assess alternative predator control strategies. Running the predator removal program every second or third year may be equally effective; or less expensive designs could be developed for a variety of strategies, including running the program in alternate years but offering increased incentives for fishing (e.g. double or higher the current reward offered for each fish). The recruitment relationship for squawfish should also be determined and the size of fish for which rewards are offered should be tied directly to this recruitment

(growth rate and size-at-age) relationship. The attractiveness and spin-off benefits (e.g. increased tourism) of other types of rewards, incentives and approaches (e.g. major international squawfish derby every year with large prizes for capture of tagged squawfish) could be investigated as a way to maintain effectiveness and control costs.

A minor suggestion is that “In Press” MS references did not indicate the journals that had accepted the work. Citations should include this information.

Future submissions should endeavor to better describe the budget for the reward system and the \$1 million personnel costs. A concern about current work is whether the investigators are continuing to do verification on the captured pikeminnows to confirm assumptions of predation rates on salmon.

The project is evaluated under the Implementation and Management criteria but two notable rating criteria were not addressed in the proposal: alternative approaches and their evaluation. Why should BPA fund the project? Given the cost of this program, both of these criteria are reasonable questions.

ProjectID: 9007800

Evaluate Predator Removal: Large-Scale Patterns

U.S. Geological Survey

Short Description: Evaluate causes of large-scale geographic patterns in predation on juvenile salmon by northern pikeminnow. Examine complex interactions of temperature, juvenile salmon, and juvenile American shad on predation patterns in mainstem rivers.

ISRP Recommendation - DNF / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-DNF

Sponsor Funding Request = \$117,880 / CBFWA Funding Recommendation = \$117,880

Recommendation:

Do not fund as a separate program, the project should be incorporated as an integral part of Northern Pikeminnow Management Program, 9007700.

Comments:

This proposal argues logically for further investigation into exploitation rates stated in Proj. 9007700, but it seems reasonable that this proposal be integrated with Proj. 9007700 and the budget be included in the total (Proj. 9007800 would require 3.5% of the total). Earlier work resulted in very useful results. However, there appears to be potential for diminishing returns and it is unclear what direct benefits may result for fish and wildlife. For example, if higher water temperature in the lower river is in fact found to be the most likely explanation for the larger size of squawfish and higher predation rates on salmon, this will be interesting. More likely, there is little that can practically be done to change this circumstance. Further, anything that could be done would also be contingent on the recruitment dynamics of pikeminnow in the lower river (e.g., immigration from up-river versus growth and survival in the lower river population).

On its own, this project seems to have limited applicability. However, the issues raised should clearly be considered within the broader Project #9007700 (Northern Pikeminnow Management Program). The BPA cost appears high for objectives 1 and 2, and no funds appear allocated for objective 3.

ProjectID: 9702400

Avian Predation on Juvenile Salmonids in the Lower Columbia River

Oregon State University/Columbia River Inter-Tribal Fish Commission

Short Description: Monitor and evaluate the efficacy of management initiatives to reduce predation by colonial waterbirds on juvenile salmonids in the lower Columbia River. Assist resource managers in the development of a long-term avian predation management plan.

ISRP Recommendation - Fund in Part / CBFWA Tier 1 / ISRP Comparison with CBFWA: Partially agree-fund in part

Sponsor Funding Request = \$642,600 / CBFWA Funding Recommendation = \$642,600

Recommendation:

Fund in part at FY99 level pending full review of results to date, expansion of the project is not sufficiently supported in the proposal. They should focus the research on managed and unmanaged Caspian Tern populations.

Comments:

This proposal is well written, thorough and builds logically on past work, assuming that past results are supported through peer review. The reporting of previous work is inadequate (especially in peer-reviewed publications) and may not warrant expansion of this already large contract. For example, how accurately can the population size and productivity of a colony be measured? This aspect of the study is not described or documented and would clearly effect the ability to assess management actions. Having said this, however, the need for this basic work is well described and supported, and early results appear encouraging. The need for the proposed expansion of the research (monitoring of predation in additional bird colonies) is less convincing. The proposed work is very extensive and it is doubtful that it can all be successfully delivered in the timeframe identified.

In particular, we were concerned about various budgetary aspects of the proposal: How does or will their research interface with other predation-oriented proposed work? Why is the budget so large in 2000 as compared to previous years? Why is BPA now expected to fund the entire project as compared to previous years? In Task 2.1, the proposal states that “[populations] targeted for management in FY00 will be monitored if it is determined that...”. What if it is not determined? What happens to dollars that would otherwise be allocated to such monitoring activities? Too much money seems proposed for expenditure on aerial surveys of foraging behavior. Are these really needed? Are they of high priority?

While we agree that the subject of this proposal is of high priority, we recommend an in-depth independent peer-review be conducted to evaluate the results and conclusions generated from this project before proceeding with what would be potentially a very costly expansion of this work. The highest priority for immediate research should be on assessing managed and unmanaged Caspian tern populations.

ProjectID: 20095

Evaluate Interactions Of American Shad With Salmon In The Columbia River

U.S. Geological Survey, Biological Resources Division

Short Description: Analyze existing data to assess the potential interactions between the increasing abundance of American shad and declining numbers of salmon relative to competition, and the changing ecosystem of the Columbia River.

ISRP Recommendation - Fund / CBFWA Tier 2 / ISRP Comparison with CBFWA: Agree

Sponsor Funding Request = \$152,314 / CBFWA Funding Recommendation = Recommendation:

Fund for one year. Despite the proposal's shortcomings, the potential interaction of American shad with mid and upper river fall chinook salmon warrants examination. An objective of the proposed workshop might be to develop a more comprehensive ecological research program for future submission.

Comments:

Having read of the explosive increase in American shad in the Columbia River, the committee was prepared to be persuaded by this proposal. This is clearly a priority research area and the introductory section was one of the very best in our proposals. A convincing case was made for the importance of working on American shad. However, the great start to this proposal failed to be carried through to the equally important sections describing research objectives and methods. Generally, methods were weakly developed. Staff involvement was unclear.

Concerning the methods, reviewers noted that:

The proposal would examine past collections taken in the John Day Reservoir and not the lower reservoirs or the lower river where abundance of shad are many times more abundant; the proposal would analyze hydroacoustic and trawl data to identify distribution patterns of shad and juvenile chinook, but the interpretation of this data would be uncertain, particularly for purposes of examining interactions between species; and the examination of stomachs of shad and chinook, to examine competition, is also of questionable value. For example, any observed overlap (or lack thereof) in diets of chinook and shad might be explained in many different but equally plausible ways. Little or no overlap in diet might be the result of either a total lack of competition for similar prey or from very intense competition for prey, where one species strongly out competes the other for that prey. The ecological implications of these two scenarios are very different, but there is no way to resolve which of many possible alternative explanations is correct.

The proposed budget appears to be much too large for the deliverables expected. It is also not clear what the large sub-contracts are required to deliver.

Systemwide Life History Studies

ProjectID: 9102900

Life History And Survival Of Fall Chinook Salmon In Columbia River Basin

U.S. Geological Survey, Biological Resources Division

Short Description: Facilitate implementation of federal and tribal fall chinook salmon recovery plans by monitoring and evaluating post-release attributes and survival of natural and hatchery juvenile fall chinook in the Snake River and Hanford Reach of the Columbia River.

ISRP Recommendation - Fund in Part / CBFWA Tier 1 / ISRP Comparison with CBFWA: Partially agree-fund in part

Sponsor Funding Request = \$799,525 / CBFWA Funding Recommendation = \$743,558

Recommendation:

Fund in part, do not expand into objectives 6 and 7 until they have reported on previous results from Snake River basin research. Objective 6 and 7 should be developed as independent proposals with specific rationale, hypotheses, and study design.

Comments:

This proposal addresses a wide scope of studies on fall chinook in the upper river. The proposed project is very large and ambitious, both in terms of scope and schedule for delivery. The objectives of this proposal are clearly described, but it not clear what should actually be done next due to the large backlog of data and insufficient reporting of previous work. The scope of these investigations seems to detract from the methods detailed for each objective. The testability of some objectives and the experimental designs presented are quite variable resulting in a range of possible criteria scores. The proposal identifies only two more years of research to address these objectives. It is doubtful that all the objectives can be successfully accomplished with the requested resources.

Overall, this is an enormous effort (approximately 7.5×10^6 in previous funding) with far too many different and specific objectives for any individual reviewer to provide much overall perspective. Previous efforts appear to have been directed primarily to Snake River fall chinook while the current proposal calls for a contrast of the performance of Hanford Reach fall chinook with the poorly performing Hell's Canyon fall chinook population. However, given that a large amount of data has been collected in previous years which has not yet been reported along with the potential importance of this work to the understanding/recovery of Snake River fall chinook, the reviewers recommend an independent peer review panel to examine this program before any expansion of work is supported.

The reviewers were also uncertain about what was meant by the use of "Assumptions". Are these working hypotheses? They also questioned the value of using the time of tagging (page #1003) as a variable to study survival, migration timing, or relation to environmental variables. What is the evidence that time of tagging is an informative variable and what can be inferred from time of tagging?

ProjectID: 9302900

Survival Estimates for the Passage of Juvenile Salmonids Through Dams and R

National Marine Fisheries Service

Short Description: Provide precise measurements of survival of juvenile salmon as they pass through dams and reservoirs in the Snake and Columbia Rivers

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$1,198,950 / CBFWA Funding Recommendation = \$1,198,950

Recommendation:

Fund. OK for a multi-year review cycle, program review in 3 years.

Comments:

This proposal is very well presented, reports progressive development of methods and techniques over time, and demonstrates a timely and strong publication record of research. The proposal is well integrated with other related projects and presents a logical sequence of objectives and methods. The project is a core PIT tag application program that has been expanding its area of study as new detectors are installed and developed. This kind of information is vital if agencies wish to develop priorities for research and/or to develop a relative ranking of mortality sources in the Columbia.

The scope of the project is again so huge that it is extremely difficult to provide any cogent or constructive comments. Given this scope, the annual cost, and projected duration of this request, it seems advisable to conduct periodic programmatic reviews using expert panels. Such panels should provide a broader scientific basis for review and the necessary regional perspective to better evaluate the merits of the on-going research. This would assist in determining the appropriate scope and direction for future work.

One question for regional consideration is that if the results are repeatable, should this project continue until 2015? This may seem to be a rhetorical question but how would the region determine that this work should or should not continue? Will this simply continue as an annual monitoring cost as we hope to learn through annual variation in flows and survival? Or should more direct research approaches be developed? The region may be well advised to consider how to best utilize this important tool.

ProjectID: 20149

Develop Research Priorities For Fall Chinook In The Columbia River Basin

Pacific Northwest National Laboratory

Short Description: Conduct a synthesis of ongoing and planned fall chinook salmon research, examine the factors that have resulted in successful fall chinook populations (i.e., Hanford Reach) and apply this knowledge to other locations in the Columbia Basin.

ISRP Recommendation - DNF / CBFWA Tier 3 / ISRP Comparison with CBFWA: Agree-DNF

Sponsor Funding Request = \$70,080 / CBFWA Funding Recommendation =

Recommendation:

Do not fund. The approach described may be more appropriately undertaken by an independent panel that is not receiving current funds in the Columbia River.

Comments:

This proposal is fundamentally a planning exercise to develop a research framework for fall chinook salmon. The project proposes to carry out extensive interviews and workshops so as to allow production of a “conceptual framework” for future fall chinook salmon research in the Columbia river system. The thrust of the argument seems to be that “the number of projects have increased to the point that informal yearly meetings are insufficient to develop long-term planning objectives for the entire Columbia River basin.” While the number of projects is large, the proposal fails to demonstrate a problem that this has created.

An “umbrella” framework clearly would be beneficial for establishing goals and objectives, research requirements, coordinating activities, etc. However, it is not clear that the approach in this proposal would be effective in creating a useful and successful organization. A weakness in the proposed approach is that there is no mechanism identified for providing an ongoing process of review and direction. Even if the proposed work were completed successfully, it would result in only a “snapshot” summary. Further, the proposal should also indicate how agreement would be achieved among all the different agencies, etc. that must be involved if this effort is to be successful. Simply talking to everyone and/or inviting everyone to a workshop will likely not be sufficient. In three days of proposed workshops, how reasonable is it to expect consensus on a basin-wide research framework for all fall chinook salmon?

One reviewer identified a concern that the proponents have too much of their own jobs depending on successful funding of fall chinook research. Although they might not intend their final product to be self-serving, they certainly seem to be in a compromising position to produce such a document. Thus, the proposal may be a good idea but the proponents inappropriate. An "independent panel" could do the development of such a research plan with no current funding in the Columbia River.

ProjectID: 9005200

Performance/Stock Productivity Impacts of Hatchery Supplementation.

Biological Resources Division, U.S. Geological Survey (formerly National Biological Survey)

Short Description: Measure genetic effects from artificial propagation of steelhead and spring chinook to provide increased understanding of the reputed failure of steelhead supplementation in Idaho's Clearwater River and an improved basis for planning, conducting, and eval

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$495,232 / CBFWA Funding Recommendation = \$460,000

Recommendation:

Fund for one year. Subsequent funding should be contingent upon reporting of results to date.

Comments:

This proposal is a continuation of one of only a few programs evaluating the genetic aspects of supplementation. The program has been expanded to include steelhead and

spring chinook salmon and relies upon the use of neutral genetic markers to represent Hatchery (H) and Wild (W) brood stock. Any evidence for or against the genetic marks was not presented in the proposal. The program contrasts the growth and survival of HxH, HxW, and WxW genetic groups in both natural and hatchery environments, and tests for maternal, incubation, and cryopreservation effects. Preliminary results on steelhead indicate a significant effect of the stock origin on supplementation rates (see concerns noted below).

The proposal requests continued funding for work that has been ongoing for 7 years and is expensive. Although the proposal addresses questions that are still important, the reporting of results from previous work is inadequate, particularly in peer-reviewed publications and reports. The proposed work for 2000 and subsequent years is very ambitious. Unfortunately, the limited reporting of previous work makes it very difficult to evaluate the value of continuing this project. It is recommended that this project be continued but substantially scaled down pending peer review of previous work.

One reviewer, while fully supporting this area of research, provided a series of concerns that should be relayed to the principal investigator (PI). These were:

The PI appears to be convinced, in advance, that hatcheries produce rapid domestication effects. The proposal would be stronger if it this kind of bias were eliminated from the text.

For Objective I.1, the PI fails to provide details of the origin of the Dworshak steelhead stock as compared to the Selway River stock. As Dworshak is located on the mainstream Clearwater, it would be nice to know if the two stock types were originally essentially the same. If not, then the comparison is not necessarily hatchery vs wild but stock A vs stock B (of unknown origin?).

The relevance of the cryopreservation experiments was not adequately demonstrated. It seems an “add-on” and could be deleted to reduce costs.

For Objective II.1, the comparison with the Carson spring chinook stock would be useful and the PI should consider deleting that stock. One could just as reasonably replace the Carson hatchery stock with some out-of-basin or distant wild stock. The Warm Springs wild vs hatchery is a fine contrast by itself.

There is a disappointingly lack of description of mating protocols for proposed experiments. Will there be enough parents so that differences between hatchery and wild will not instead reflect differences in parental attributes?

The budget is poorly described, although justified (in particular the \$90+k subcontract for an unidentified task).

This project has several experimental components, some are well constructed, and others are questionable. The Warm Springs stock experiment looks good. The choice of the Carson stock is not well justified.

ProjectID: 9009300

Genetic Analysis Of Oncorhynchus Nerka (Modified To Include Chinook Salmon

University of Idaho

Short Description: Provide biological and genetic information on *O. nerka* and *O. tshawytscha* samples collected throughout the Snake and Columbia Basins to be used in the overall recovery of endangered Snake River sockeye salmon and threatened Salmon River chinook salmon.

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$144,859 / CBFWA Funding Recommendation = \$139,434

Recommendation:

Fund. OK for a multi-year review cycle, review in FY2002 for reporting of results.

Comments:

This proposal is well written and addresses the genetic variation in Columbia River sockeye salmon, particularly in the listed stock (Redfish Lake) and its captive breeding program, plus the impact of captive rearing on three listed chinook salmon populations. These populations are severely depressed and require careful genetic monitoring to maintain the remaining genetic variation. The genetic techniques being applied are appropriate and continue to be developed to increase the resolution of genetic differences. This is clearly high priority work that warrants continued funding and is an example of a strong proposal. One concern identified, though, was that the project was apparently started in 1990. In general, it appears that the progress to date has not been adequately reported, especially in peer-reviewed publications and reports. While this concern merits investigation or clarification, the reviewers did note that publications have been recently submitted.

Systemwide Artificial Production Related Proposals

ProjectID: 9202200

Physiological Assessment of wild and hatchery juvenile salmonids.

National Marine Fisheries Service, NOAA, DOC

Short Description: The overall goal of this research is to reduce negative impacts of hatchery salmon on wild salmon and evaluate supplementation by 1) improving the smolt quality and smolt-to-adult survival of fish reared in hatcheries, and 2) producing a more wild-type . . .

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$358,064 / CBFWA Funding Recommendation = \$349,589

Recommendation:

Fund for one year. Subsequent funding contingent on an adequate proposal that will both review progress and provide a description of measurable objectives with a schedule of tasks necessary to achieve the objectives. An adequate proposal next year will identify the roles and responsibilities of both investigators and subcontractors.

Comments:

The rationale is that if hatchery presmolts could be made to grow more slowly in winter, they'd grow faster in spring and after release would not residualize, migrate faster, and survive better. The benefit to wild salmon is that fewer residuals would deprive wild parr

and smolts of resources, and that hatchery stocks would be secure with their own brood source. This is directly in line with the FWP goals, objectives and directives. The research is extensively integrated with other FWP research projects such as #9306000 and #956300. The proposed research addresses a continuing policy question: is investment in production hatchery systems, even if hatchery-wild interactions are minimized through growth rate acceleration, a viable substitute for restoring natural production (from the standpoint of improved smolt-adult survival)? The primary work product will be new rearing protocols for improving smolt to adult survival and for producing wild-like salmon smolts in hatcheries. This is a mature ongoing project and presents evidence of some significant progress, 7 peer-reviewed reports in 6 yrs (a couple are review articles and not primary research reports) The proposed work is apparently a valuable continuation of the accomplished research. The proposal would be easier to judge if the proposers would give an indication of their results, i.e. one or more graphs or tables.

The proposal is also difficult to read because goals for the research are stated several times in different ways (1st unnumbered page, 7th unnumbered page, 12th unnumbered page), as are objectives (3rd unnumbered page, 7th unnumbered page); as are elements (12th unnumbered page). These statements seem to all identify the same things but in differing language.

There are two components. One is to manipulate the growth of chinook smolts at Gnat Creek Hatchery to improve (make wild-like) the smolts ('element 1': This would supplement spring chinook salmon in the Columbia River terminal fishery). As a part of this effort, coded wire tagged fish representing different treatments are to be placed in net pens, but they provide no indication of number of pens or density of fish in pens. They mention control and test fish but do not indicate number of control and test groups. The sampling protocol is also not clear. They plan to sample 15 fish from each group. Reviewers assume there are 2 groups, fasted and control, but the number of replicates is not provided. It is unclear what the sampling regimen will be.

The second component is to compare physiological qualities of smolts reared at Cle Elum Hatchery in two regimes, OCT and SNT, with each other (element 2) and with wild smolts (element 3). The first project entails releasing and recovering CWT groups of chinooks and evaluating returns to the terminal fishery at Young's Bay while the second entails no life-cycle evaluation by CWT groups. Both projects entail physiological characterizations of smolts.

The description of proposed methods is too terse. There is no indication of experimental power, particularly of CWT release groups, and this lack of information leaves reviewers with unanswered questions. What numbers are to be released? What can reasonably be expected to return? What statistical power is there for testing hypotheses? It's likely that returns will be not very large, therefore will differences be detected? The high reputation of the proponents does give confidence that the methods are adequate. The proponents are qualified by education and experience and have published several peer-reviewed reports of their research in recent years (3 from Fish and Wildlife Program research), all evidence of their competency. However, the budget indicates that a subcontractor whose

identity and role in the project are not indicated will expend half the effort. These factors make it hard to be fully confident of the capability of the researchers and therefore of the adequacy of the methods. This research will benefit both supplementation and captive broodstock efforts in the FWP. It should go forward, but because the proposal is lacking in some information, the ISRP should review the research again next year.

ProjectID: 9105500

NATURES [Formerly Supplemental Fish Quality (Yakima)]

National Marine Fisheries Service

Short Description: Develop and evaluate fish culture techniques (seminatural raceway habitat, predator avoidance training, exercise, live food diets, etc.) for a natural rearing enhancement system that increases the postrelease survival of artificially propagated salmon.

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$500,000 / CBFWA Funding Recommendation = \$500,000

Recommendation:

Fund. Review again in FY2003. The investigators are encouraged to include assessments of interactions of NATURES fish and wild salmon. The investigators are asked to submit their results to peer review and publication in the primary research literature.

Comments:

The proposal for this ongoing project contains objectives for all years, not just for FY2000. It is not clear what is to be done in FY2000. It presents the results of treatments, but needs a more interpretive discussion regarding the results of combining treatment effects and the meaning of results in the larger context. The rationale of the proposed research is that if hatchery presmolts were reared in a semi-natural culture system, which would produce wild-like fish, they would survive better. This would reduce the effects of hatchery-produced salmon on wild salmon. The logic of this rationale is obscure and could be more clearly explained. Reviewers question that if hatchery salmon now displace wild salmon to their detriment, how could enhancing the fitness of hatchery salmon not exacerbate the problem? There may be an implicit belief that a semi-natural rearing system will reduce domestication selection (because future interbreeding of hatchery and wild salmon is inevitable) and this reduction will reduce the genetic difference between hatchery and wild salmon and therefore the detrimental effect of their future interbreeding. This isn't explicitly stated, and would be a speculative claim. But otherwise it is not clear what's meant by "use high survival NATURES-reared fish to reduce ...impact on wild populations" (p.12). It may be the same rationale as that of Project 9202200, which is that by enhancing fitness of hatchery salmon, fewer will be needed to supplement wild populations.

There is no analysis of this or any other potential benefit. Would enhanced fitness offset reduced release numbers? What would be the effect of applying the techniques to supplementation hatcheries?

Progress. The project has been underway since '92. It has proceeded by looking for ideas about how to make smolts more wild-like, testing the ideas in lab, pilot, and production scale experiments. The 'ideas' that have been tested are 'semi-natural raceway', which is a vaguely specified system that is unlike usual raceways because it has overhead cover, plant structure, and something like a rough bottom. Reviewers note that apparently none of these features have been tested in isolation from others. Other 'ideas' that have been tested are 'live food', 'predator training', and 'exercise water velocities'. A new idea in this proposal is 'underwater food'. Apparently none of the tests have proceeded to production scale.

It's hard to evaluate progress as little or nothing has been published in the primary literature. It is disturbing that such large amounts have been spent on so much research with very little peer-review of the work. Very little of this work has been published in the primary literature. The proponents should give some summary of the supporting data.

Methods. Lab means culture in replicated 400 liter tanks, pilot means culture in 6000 liter tanks coupled with 'instream survival' tests (standardized experiments releasing marked fish upstream from a trap where they're observed), and production means culture in 25 kilter raceways coupled with evaluation of CWT release groups. Evaluation apparently does not entail any measure of interaction of "NATURES" fish with wild fish. Reviewers strongly believe that it should.

It's hard to envision the 'semi-natural raceway'. A diagram would help. There is no information on densities per raceway compared to traditional practice, such as, what would be the smolt production from a 'semi-natural raceway'? . What kind of power do proposers expect from production scale experiments? How realistic are their expectations of return rates? What are their expectations of return rate? Will this produce meaningful results? Why aren't the physiological indexes of FWP Project 9202200 being employed in lab, pilot experiments? It seems that both projects have similar rationales and that the investigators would want to cooperate with one another. Because the methods are so cursorily described, the proposers are asking reviewers to trust that their methods are reliable. Reviewers, however, need the help of peer review, i.e. publication of progress in the primary literature. It's reassuring that the key personnel are qualified by education & experience, which means they probably understand the requirements of meaningful experimentation. Evidence that their work to date can pass peer-review and be published would be much more reassuring.

ProjectID: 20075

Engineered Anadromous Salmonid Habitat

University of Idaho

Short Description: Construct an engineered stream channel at the USFWS Winthrop NFH as a new concept in natural-type chinook salmon and steelhead production supplementation.

ISRP Recommendation - DNF / CBFWA Tier 2 / ISRP Comparison with CBFWA: Disagree-DNF

Sponsor Funding Request = \$60,502 / CBFWA Funding Recommendation =

Recommendation:

Do not fund, an intriguing idea but the proposal is technically inadequate.

Comments:

The proposal lacks conviction that it is either based on sound scientific principles or offers clearly identified objectives. It states that mitigation hatcheries in the Columbia Basin have contributed to the loss of natural production [of salmon] through diminished genetic diversity and poor conditioning and it contends that hatchery smolt quality is poor because ancestral source populations are maladapted with respect to local conditions at the hatchery site, in particular, that timing of (emigration?) is 'inappropriate'. It further contends that successful supplementation requires "1 genetics of the stock, 2 the environmental requirements of the stock, and 3 incubation and rearing experiences that are consistent.." Reviewers take this to mean that early-migrating, spawning, smolting populations have been inappropriately stocked into hatcheries where late-migrating, spawning, and smolting populations would be more adaptive and vice versa. While the background section leads reviewers to believe that the project relates to appropriate broodstock selection for supplementation, it is not. It is about building artificial streams to emulate natural parr environments.

In any event, CBFWA itself observes that this proposal appears to have some redundancy with existing work by NATURES in the Yakima sub-basin.

The project proposes to "provide ...info..to assist up-grading/replacing traditional hatchery practices...model for rearing channel systems ..to replace lost habitat." This may be a very appealing rationale but the claim is unsupported. The proposal would benefit from a fuller discussion of failed projects at McNary & Priest Rapids-- in the Background section. While the rationale for incorporating "engineered" streams into supplementation hatchery systems has application to FWP, this proposal lacks sufficient specifics to be convincing.

The experimental design for monitoring and assessment is relatively undefined. The stated objectives are to 1. produce wild-quality fingerlings, smolts from the "new concept", and 2. monitor behavior and condition, comparing salmon to standard hatchery fish. The proposal does not show how these objectives can or will be measured and neglects to link them to a schedule of tasks. The time frame does not appear to be sufficient to allow for complete assessment and evaluation of results (fish condition, growth, and survival). Most of the methods are engineering methods to build the artificial stream and seem only indirectly related to the objectives. The features to be incorporated are vaguely defined and there is no evidence of a basis in literature or preliminary research for the design criteria. There are no smolt-producing methods given. What will be introduced into the artificial stream? Spawners? Eggs? Fry? Parr? Smolts? How big are these artificial streams? How many fish would be produced from them? Would they be artificially fed at all? How is this scheme different from NATURES? It seems similar in concept, and because NATURES has been going on for some time, this proponent needs to specify the differences. Fishery biological methods are given short shrift and are difficult to evaluate.

While the proponents are clearly eminent in their respective fields, they are not known as experts among habitat specialists. Appropriate collaborators do not assist them. Neither is known to have published any refereed work on salmon habitat requirements or salmon habitat engineering.

ProjectID: 20059

Infrastructure To Complete FDA Registration Of Erythromycin

University of Idaho - Fish and Wildlife Resources

Short Description: Provide the infrastructure needed in the Columbia River basin to maintain and complete the FDA registration of erythromycin feed additive, a necessary therapeutant for sustained hatchery production and maintenance of captive broodstocks of salmon

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$71,022 / CBFWA Funding Recommendation = \$71,022
Recommendation:

Fund. There is a programmatic need for the use of erythromycin, but how the costs are allocated amongst various users is a policy question. In lieu?

Comments:

This isn't really a research project. Erythromycin is valuable and necessary to a lot of salmon research as a therapeutant for BK Disease. The proposal leaves it unclear exactly what specifically needs to be done to achieve FDA approval. It is understandable that specific activities do need to be done, but how are delivering papers at national and international meetings related to this? The need for .75 FTE for coordinating the approval process isn't fully explained in the proposal.

This project is the only source of the drug for researchers and culturists; therefore it is valuable. But this proposal is basically designed to resolve conflict between the UI and The FDA over approval for the use of Aquamycin. The arguments in the proposal why BPA-NWPPC should support such an endeavor are unconvincing, especially considering the commercial nature of the product and the perception, if not the intent, of scientific "lobbying." One wonders why the aquaculture industry isn't paying for the approval process and why the research community has to bear the cost.

ProjectID: 20105

Develop New Feeds For Fish Used In Recovery And Restoration Efforts

Abernathy Salmon Culture Technology Center

Short Description: Formulate new diets to improve the health and condition of propagated salmonids

ISRP Recommendation - DNF / CBFWA Tier 3 / ISRP Comparison with CBFWA: Agree-DNF

Sponsor Funding Request = \$99,761 / CBFWA Funding Recommendation =
Recommendation:

Do not fund. There may be a need for this research but the proposal is technically inadequate and the programmatic value is not justified.

Comments:

The proposal does not make a convincing case for funding. It's not clear that this isn't a private sector activity. The proposal doesn't have sufficient technical detail. Objectives are poorly specified. According to the proposer, successful supplementation requires best nutrition. So present diets, by implication, are not best. Therefore nutritional research leading to open formula semi-moist diets is required. The applicability of this proposed research to the FWP is not made clear. Furthermore, it seems to reviewers that commercial manufacturers have produced a number of new dry diets recently that are well received. Semi-moist Biodiet is well accepted as a standard smolt diet and produces healthy fish. Overweight fish are probably more a product of over feeding than of diet composition. The proposer doesn't present evidence that presently available diets are inadequate, only that diet formulations are important. The proposer's own research on the subject is not summarized and has not been peer-reviewed and published. There's no evidence of knowledge of 9305600, in which nutritional physiologists have been working on diet formulations.

Objective/Method. Proposed are straight-ahead dietary requirement trials. But aren't mineral requirements, etc., long since known? Why is new a diet needed? Disease challenges are not described. No production scale evaluations are proposed? The project is vague and reviewers find it difficult to determine exactly how the research will be conducted. For example, the duration of feeding trials is not stated and disease challenge tests follow "standard protocols". The proposal provides no additional information. While the qualifications of the proposer give the reviewers some confidence in the competency of the methods, the proposer lists no recent peer reviewed publications. Therefore it's difficult for reviewers to have full confidence in the quality of the proposed research.

ProjectID: 9305600

Assessment of Captive Broodstock Technology

National Marine Fisheries Service

Short Description: Improve effectiveness and assess risks of captive broodstock programs as a tool for recovery of depleted salmon stocks

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$1,310,300 / CBFWA Funding Recommendation = \$1,236,923

Recommendation:

Fund for one year. Subsequent funding contingent on inclusion of better details on organization, coordination, subcontractors. Investigators should submit this as an umbrella proposal with subproposals related to: 1) growth and diet, 2) health, 3) reintroduction strategies, and 4) genetic consequences. A detailed description of the overall organization and coordination structure should be included in the umbrella proposal.

Comments:

Rationale. Captive broodstocks may/will be needed to preserve threatened chinook stocks until they can be reintroduced. There are several difficulties inherent in the strategy of using captive broodstocks for the temporary preservation of species, some of

which are addressed in this multifaceted project. The project is a big one with a long history. It's difficult to follow the proposals Section 4 and Section 5 because the different facets are mixed together.

Objective/Methods. Diet & growth affect age of maturity, smoltification, morphology, and gametes. A problem for culturing captive broodstocks is how to achieve fast growth without younger maturation and without suppressing immune response, which is how to adjust protein/energy ratios in salmon diet. This is a basic issue in salmon biology - understanding the relationship between nutrition, growth, maturation age, smolting would enlighten a lot of conservation decisions. The immediate problem for captive broodstocks is the abnormal tendency of cultured chinook males to mature young as jacks, probably a consequence of abnormal nutritional environment.

Health. BK disease is a big threat. Erythromycin antibiotic is the only available and ineffective treatment and is potentially toxic. Alternative azithromycin needs testing.

Reintroduction. Fish bred in captivity probably would lack the physical ability to thrive at liberty. They will need exercise conditioning and a diet regimen.

Inbreeding. Captive broodstocks necessarily are small, liable to inbreeding depression. It's important to evaluate experimentally inbred fish in order to understand the importance of inbreeding.

It's hard for reviewers to tell which investigator is responsible for each facet of the research, i.e. who is doing what. Some investigators demonstrate continuing peer-review of their work (e.g. Hard, Shearer) others (e.g. Harrell) haven't had their work published. So reviewers' ability to judge the quality of work is mixed. The budget includes large contracts for others with unknown functions in the project and their qualifications aren't listed, which makes it more difficult for reviewers to assess the quality of work. What are functions of PMFC, Frank Orth, UW, UI, NWIFC in the project? Probably the methods in use and proposed for use are at least adequate while in some instances creative and innovative. In each area the project's work is pertinent to finding techniques for captive broodstock rearing and for understanding what the effects of the program will be. The diet and health projects are directly related to techniques of rearing; the inbreeding project's dealing with a more subtle problem and requires a long time commitment for meaningful results. But it is a central issue

This on-going FWP project has an impressive list of accomplishments since 1994 and may be one of the better FWP projects in terms of publication of results in peer-reviewed scientific journals.

This project might be better developed as an umbrella with the various components separated into sub-proposals. The "key personnel" and budget description sections need to provide more information. At a minimum, they should provide a CV for the recipients of the large subcontracts. They should better describe their internal organization and the tasks associated with the subcontractors.

ProjectID: 20111

Preserve Cryogenically the Gametes of Selected Mid-Columbia Salmonid Stocks

COLUMBIA RIVER INTER-TRIBAL FISH COMMISSION

Short Description: Collect and cryogenically preserve the gametes of fall chinook and/or steelhead from the Klickitat and Upper Columbia River. Transfer these gametes to a recognized qualified salmon gene banking facility.

ISRP Recommendation - DNF / CBFWA Tier 2 / ISRP Comparison with CBFWA: Disagree-DNF

Sponsor Funding Request = \$89,573 / CBFWA Funding Recommendation = Recommendation:

Do not fund. Resubmit as part of a programmatically organized umbrella proposal on cryopreservation (see 9703800).

Comments:

One way to preserve allelic diversity among endangered stocks is to cryopreserve semen from a sample of each stock so that if habitat were re-established, it would be possible to introduce genes into fish in habitat. Technology is said to be available. Although recommended last year, this proposal was not funded but work was done as a demonstration. The proponents conducted a conference on the issue and report that the proposal grows out of recommendations of that conference, but we are told nothing about other recommendations of the meeting or why a program is justified/ needed. Reviewers question the rationale because the proposal includes so little scientific documentation (e.g., in Technical and/or Scientific Background) and hence must be challenged on the basis of scientific principle.

The proposal is not entirely clear in distinguishing between objectives and tasks, and the methods are not specifically tied to each task. The stated objective is to sample stocks, place samples of semen in storage at 2 labs, and ultimately to transfer them to "recognized gene banks" for long term storage. However, no recognized gene bank is identified, so reviewers question the survival prospects of preserved material in long-term storage. The limited ability of a small agency to undertake a very long-term responsibility, more than one career-span, calls into question the likelihood of success.

The proposal could be better written and edited. For example, sections 8 a and b are identical. No CV's are given. There is no reference to peer-reviewed publications of the proponents' research. This proposal should be reviewed with the other cryopreservation efforts on a programmatic level. There should be a standard protocol for all regional efforts. Examination of cryopreservation efforts should include the development of criteria for high priority material. How does it fit in with captive broodstock, supplementation, and habitat restoration activities? The proposal does not identify a method of choosing stocks. Why the Hanford stock? It is one of the few healthy basin stocks. Is there indication that this stock is heading toward extirpation? How does this relate to 9703800? A basin wide cryopreservation effort is a good candidate for an RFP by the Council.

UI/WSU Fish Reproduction Program

20043 20044 (20045) 20046 20047 20048

These are several projects loosely organized as part of UI/WSU fish reproduction program grant. It's not clear what comprises the 'grant'. Their budgets each request support for a portion of an aquaculture facility and a portion of the program's administration as direct costs and reviewers question whether this is appropriate. This set of proposals needs an umbrella proposal that describes the programmatic importance and application of these efforts. Several of the projects share in common narrow focuses on physiological techniques to boost reproduction, *in extremis*: dying males, marginally viable sperm thawed from cryopreservation, improve reproduction in sub-fertile females, induced maturation in cultured broodstocks, etc. These projects share in common competent investigators. They demonstrate excellent credentials. They demonstrate continuing, approving, peer review of their work. These projects are expensive. They support in aggregate a large part of the salaries of the PI's and they support technical assistants and post-doctoral fellows.

ProjectID: 20043

Intracytoplasmic Sperm Injection: Genetic Retrieval From Single Sperm
University of Idaho

Short Description: Develop methodology to retrieve the genetics from a single sperm by microinjection into an egg.

ISRP Recommendation - DNF / CBFWA Tier 3 / ISRP Comparison with CBFWA: Agree-DNF

Sponsor Funding Request = \$223,765 / CBFWA Funding Recommendation =
Recommendation:

Do not fund.

Comments:

This proposal specifically addresses future incorporation of genetic material from presently infertile males into future generations. This is an expensive proposal to address the disadvantages to the (present) cryopreservation approach to conserving genetic material, and should be examined from the standpoint of the investment in a strategy that might be considered a technological alternative to restoring spawning populations. Reviewers find no convincing argument as to how the proposed research relates to priority needs of the FWP. The proposal does not adequately describe how it will be programmatically applied. There is no citation of other applications of similar technology to other ESA efforts.

ProjectID: 20044

Endocrine Control Of Ovarian Development In Salmonids

University of Idaho

Short Description: Study key intra-ovarian endocrine pathways in salmonids as a means to address reproductive problems in captive broodstock programs. Provide basis for technological development to diagnose sub-fertility and increase embryo viability.

ISRP Recommendation - DNF / CBFWA Tier 3 / ISRP Comparison with CBFWA: Agree-DNF

Sponsor Funding Request = \$222,150 / CBFWA Funding Recommendation = Recommendation:

Do not fund.

Comments:

The proposal does not convince the reviewers that fecundity is a limiting factor in brookstock programs. It lacks convincing arguments related to its contribution to the recovery program. Reviewers are surprised that only steelhead will be used as experimental animal. It is a persuasive, well-argued proposal, and Nagler appears to be one of the "leading edges" on this topic and publishes accordingly.

ProjectID: 20045

Analyzing Genetic And Behavioral Changes During Salmonid Domestication

Washington State University

Short Description: Analyze genetic changes occurring during domestication in chinook salmon and steelhead trout by studying selection on mapped DNA markers under wild and hatchery conditions and analyze behavioral and physiological changes using standardized tests.

ISRP Recommendation - Fund / CBFWA Tier 3 / ISRP Comparison with CBFWA: Disagree-fund; strongly recommend

Sponsor Funding Request = \$209,720 / CBFWA Funding Recommendation = Recommendation:

Fund, OK for a multi-year review cycle, review in FY2002 for results to date.

Comments:

Rationale. There is evidence that hatcheries domesticate salmon, which is manifested in changed behavior and physiology. A consequence of domestication expected is that offspring of wild salmon and hatchery products will be less fit in the wild because they will have inherited maladaptive traits from less fit hatchery parents.

This project proposes to develop readily observed indices of domestication, which are behavioral assay, cortisol assay, and fluctuating asymmetry. These indices would serve resource managers as a means of evaluating specific stocks. They propose to use QTL techniques to map these domestication traits on the genome of steelhead and chinook. They'll develop a microsatellite map for chinooks similar to the one Thorgaard has for rainbow; entails producing inbred androgens, which Thorgaard has done for rainbows. They'll develop behavior and physiological and meristic (FA) stress indicators that hypothetically relate to domestication selection. They will test for associations between

traits and genetic map. It is not explicitly claimed, but the ambition seems to be to be able to assess the 'domestication' of a group of salmon by assessing the frequencies of QTL's known to be associated with domestication traits.

The method entails working with pairs of chinook and steelhead stocks, each pair containing domesticated and wild. A product useful to the FWP will be "standard behavioral tests that can be used to monitor levels of domestication" of those species; it is not clear how the information would be used in future hatchery management. (One reviewer suggests that behavioral work be conducted in running water rather than static conditions.)

The proposers are eminent in their respective disciplines and provide considerable evidence of peer-reviewed publications of their work. This is highly innovative science. The ISRP strongly endorsed this project and recommends it for funding.

ProjectID: 20046

Induction of Precocious Sexual Maturity and Enhanced Egg Production in Fish

University of Idaho

Short Description: Determine if female fish sexual maturity can be achieved earlier (thus increased reproductive capacity and reduced generation time) due to a drastic growth rate increase (3.5 times normal) induced by the use of somatotropin.

ISRP Recommendation - DNF / CBFWA Tier 3 / ISRP Comparison with CBFWA: Agree-DNF

Sponsor Funding Request = \$196,812 / CBFWA Funding Recommendation = Recommendation:

Do not fund. The proposal does not explain any programmatic need for it by the FWP.

Comments:

The proposal does not adequately describe how it will be programmatically applied. The use of bST to accelerate growth rate and time of sexual maturity is not fully justified to the reviewers given the FWP objective of maximizing the natural ontogeny, experience, behavior, etc. of artificially-produced fish. While it may seem a reasonable measure when propagation efforts are not generating sufficient to maintain or produce more of endangered or depressed fishes, the argument for such extreme physiological manipulation is not justified in the present situation of viable options for producing for supplementation.

ProjectID: 20047

Enhancement of salmonid gamete quality by manipulation of intracellular ATP

University of Idaho

Short Description: Develop methods to enhance the short-term storage of unfrozen salmonid gametes and improve the quality of salmonid eggs and nonactivated, activated, and cryopreserved sperm.

ISRP Recommendation - DNF / CBFWA Tier 3 / ISRP Comparison with CBFWA: Agree-DNF

Sponsor Funding Request = \$182,915 / CBFWA Funding Recommendation = Recommendation:

Do not fund. The proposal does not justify programmatic need.

Comments:

From a scientific standpoint this is a well-designed study with specific, measurable objectives. The concept of ATP as a screening tool to predict motility and fertilizing ability of salmonid sperm and eggs is presented in a convincingly manner. The proposal systematically aligns scientific hypotheses, tasks, anticipated results, potential problems and corrective actions and assessment/evaluation approaches Reviewers disagree however whether it would have practical applicability in improving the efficiency of using gamete samples for increased artificial and wild production of fish populations.

Fish Disease

ProjectID: 20048

Viral Vaccines And Effects On Reproductive Status

Washington State University

Short Description: Develop a vaccine for IHNV and test its efficacy and effect on reproductive status of salmonids

ISRP Recommendation - DNF / CBFWA Tier 3 / ISRP Comparison with CBFWA: Agree-DNF

Sponsor Funding Request = \$204,887 / CBFWA Funding Recommendation = Recommendation:

Do not fund. The proposal does not justify programmatic need.

Comments:

The goal of the study is to immunize broodstock directly and progeny passively or directly and to develop a method of delivery of IHNV immunogens using an adjuvant carrier. IHN is an economically important pathogen for pacific salmonids, but the proposal does not give evidence of importance to restoration in Columbia River salmonids. The disease is important to the aquaculture industry as it occurs in supplementation /restoration hatcheries, but the proposal doesn't demonstrate that it's a significant problem for restoration. It gives no analysis of cost or threat of the virus to restoration.

Reviewers ask several background questions that are unanswered in the proposal: What was the outcome of the major Western Regional Aquaculture Consortium effort in past decade on IHN vaccine? Why isn't the aquaculture industry supporting this research? What is the relationship of this project to any research on IHN vaccine in other PNW labs?

The methods for producing the vaccine (objectives 1 and 2) are adequately described. However, the experimental design for testing the effectiveness of the vaccine is poorly described. For example, methods for objective 3 do not state how many groups of fish will be challenged, how many fish are in each group (although later they state experimental groups will contain 125 fish but it is unclear exactly what this relates to), if or how many replicates there are or if there is a control. Under "statistics" they do state that cumulative percent mortality between various groups and controls would be analyzed. Because of the lack of detail in describing the design, it is difficult to evaluate the appropriateness of the experiment. Similar lack of sufficient detail on experimental design is prevalent in the remaining objectives.

Although considerable technical and scientific background is provided, there is no attempt to tie the study to a specific part of the Fish and Wildlife Program and it is only weakly tied to other research.

ProjectID: 20106

Heritability of Disease Resistance and Immune Function in Chinook Salmon

U.S. Fish and Wildlife Service

Short Description: Determine the heritabilities and genetic correlations of resistance to bacterial kidney disease (BKD) in spring chinook salmon, and evaluate whether broodstock culling based on ELISA can cause genetic changes in disease resistance and immune function.

ISRP Recommendation - Fund / CBFWA Tier 2 / ISRP Comparison with CBFWA: Disagree-fund; strongly recommend

Sponsor Funding Request = \$398,596 / CBFWA Funding Recommendation = Recommendation:

Fund for duration of project to 2002.

Comments:

This detailed proposal to investigate vertical transmission of *Renibacterium salmoninarum* in spring chinook, and estimate the heritabilities and genetic correlations of disease resistance indicators, addresses an important need to improve hatchery practices for long-term recovery of genetic diversity and fitness in the Basin's salmon stocks. Broodstock culling, removing eggs from females infected with BK disease agent, is a widespread, important disease control practice in chinook hatcheries. It's unknown what the subtle genetic effect of culling is—what if immunocompetence is genetically correlated with infection? The long-term effect may be selection for less competent population, increased susceptibility to disease. The proposers provide a good review of the technical and scientific background, including some related research they have recently completed. There is a clear need for the study; they have shown how it relates to the Fish and Wildlife Program and it includes collaborative efforts. They convincingly make the case that a critical element missing from previous studies has been an evaluation of a potential link between such indicators of disease as tissue levels of a pathogen or putative host responses to it and the actual immunocompetence of the host, particularly in a quantitative genetic framework where genetic and non-genetic components of the observed phenotypic variation can be evaluated. They point out that characterizing this potential link, or genetic correlation, is essential to evaluating the practical utility of these indicators as measures of controlling infection, using these indicators as indirect measures of phenotypic resistance or susceptibility of individual host fish, and understanding the underlying immunogenetic mechanisms of disease resistance (particularly important for determining whether the culling of progeny on a basis of parental ELISA values can genetically change the susceptibility of a population to BKD in future generations). The study has a strong quantitative basis and promises to be an important contribution to science as well as a benefit to the Fish and Wildlife Program.

Methods. Use standard Quantitative genetic techniques to estimate heritability, genetic correlation, of disease susceptibility and immunocompetence. The experimental design, methods, and analytical approaches appear to be very straightforward and thoroughly investigated.

The ISRP was impressed with this proposal and strongly recommends it for funding. The proponents expertise and facilities appear to be as good as you can get. This proposal is exceptionally well done. The proposal needs to demonstrate a stronger relation to other projects, specifically 9305600 and 20045. Excellent budget explanation.

ProjectID: 20056

Elucidate Traffic Patterns Of IHN Virus In The Columbia River Basin

USGS-BRD, Western Fisheries Research Center

Short Description: RNase protection technology will be used to survey the genetic types of IHN virus throughout the Columbia Basin, to identify sources of disease outbreaks, and to infer viral traffic patterns in an effort to reduce the impact of IHN on basin salmonids.

ISRP Recommendation - Fund / CBFWA Tier 3 / ISRP Comparison with CBFWA: Disagree-fund; strongly recommend

Sponsor Funding Request = \$75,207 / CBFWA Funding Recommendation =

Recommendation:

Fund for one year as proposed.

Comments:

This project focuses on expanding localized information to assess IHN traffic throughout the Columbia River Basin, using historical and current collections of IHN isolate to help resource managers avoid risks associated with movements of fish stocks and their pathogens. The technical background is thoroughly described, collaborative efforts are ongoing and they provide good rationale regarding management application. However, there's no analysis of problem--how prevalent is IHN, what problem does it pose for restoration. There's no analysis of cost or threat of the virus to restoration. No new technology is developed here. The "research" part of this proposed study deals with genetic fingerprinting of IHN isolates throughout the basin, some on hand and others to be supplied by collaborators. Fingerprint patterns are then examined to determine the total number of composite genetic types present. Data will be archived and compared to provide evidence of viral traffic patterns and sources of disease outbreaks. The proposer already demonstrated that virus moved from wild to hatchery, not vice versa, demonstrating important practical value of technique.

Methods. The proposal is to expand a catalog of known types, then map movements of virus types through the basin. The methods are probably competent but the proposer doesn't present much evidence of peer-reviewed publication of her work, but summarizes work in progress. This is innovative research.

ProjectID: 20104

Sources Of Myxobacterial Pathogens In Propagated Salmonids

Abernathy Salmon Culture Technology Center/U.S. Fish & Wildlife Service

Short Description: Determine the sources and progression of Bacterial Cold Water Disease in propagated salmon. Develop methods to diagnose and treat this disease prior to clinical outbreaks.

ISRP Recommendation - DNF / CBFWA Tier 2 / ISRP Comparison with CBFWA: Disagree-DNF

Sponsor Funding Request = \$90,100 / CBFWA Funding Recommendation =

Recommendation:

Do not fund, technically inadequate.

Comments:

While proponents contend that cold water disease/columnaris have recently become important in hatcheries, the proposal offers little data, analysis, or citations to support the view. The technical and scientific background as presented here lacks thoroughness, and the proposal is vague in many respects. The methods provide only a general idea of what is proposed and there is no experimental design described. Numbers of experimental fish, treatments, when fish will be collected, how samples are handled, etc. are not quantified, and thus it is impossible to judge the validity of the approach. This may well be an important problem but the programmatic and technical context is not sufficiently developed. For these reasons, we judge that the proposal does not have adequate objectives, methods, and provisions for monitoring and evaluation of results. CBFWA itself notes that the disease can be (and is) controlled with existing methods, and on a case-by-case basis.

Systemwide Habitat and Natural Production

ProjectID: 20030

Impact Of Nutrients On Salmon Production In The Columbia River Basin

University of British Columbia

Short Description: Examine the potential importance of nutrients on salmon production in the Columbia River basin by examining the impact of dams, reduced salmon returns and human activity on nutrient inputs to selected sections of the basin.

ISRP Recommendation - DNF / CBFWA Tier 2 / ISRP Comparison with CBFWA: Disagree-DNF

Sponsor Funding Request = \$185,640 / CBFWA Funding Recommendation = Recommendation:

Do not fund, this is an intriguing concept but the proposal is technically inadequate and not programmatically justified.

Comments:

Predicated on nutrient limitation of juvenile salmon production, Stockner et al. propose to calculate a TP nutrient budget and compare anthropogenic contributions of nutrient losses/gains to estimated historic contributions. Notwithstanding, some innovative appeal, the proposal is said by CBFWA to lack any current and urgent management need and offers no clear potential application. Its direct benefits to fish and wildlife are therefore held in question.

Among the sources and sinks that would be evaluated are impoundments, spawning adults (carcasses), sewage/industrial inputs and treatment, and logging/forestry, agriculture and other land-use practices. The proponents contend that nutrient balances determine the systems' salmon productivity and, ultimately, ocean survival. While based on well-documented nutrient retention in lake/reservoir systems in the Upper Columbia River Basin in Canada, they also argue that the influence propagates downstream into riverine sectors and that impoundments interrupt downstream nutrient spiraling. The overall objective is to provide managers with an assessment of nutrient status as a bottleneck to restoration to selected sections of the Basin. This proposal exemplifies

hypothesis exploration (e.g., based on extant data) research that has the potential to expand our understanding of changed ecosystem processes in the Columbia River Basin as a result of human manipulations, and how to evaluate the relative contributions of our alterations.

Among several obvious uncertainties are: (1) potential evidence contradicting the argument for lower system production (in terms of juvenile salmonid prey, and lack of demonstrated growth limitation, as compared to historic, pre-development conditions; and (2) feasibility and applicability of “managed” nutrient amendments to long-term, sustainable restoration approaches.

The impact of reduced import of nutrient from declines in salmon runs is a reasonable question. However, this proposal is too general and is unlikely to result in a substantial contribution to understanding this problem. The link to the Fish and Wildlife Program and other research is weak. The objectives could be more clearly stated; methods should include greater detail. Much of the emphasis is on evaluation of literature, which may or may not be adequate in terms of helping to answer the question posed. As the authors point out, “the methods we are proposing provide only an “overview” of the potential impact.....”

Five objectives are advanced, although the expected outcomes are not explicit. Numerous arguments exist for a rigorous assessment of this issue of nutrient limitation, but it may be valid to ask whether the existing, fragmented data sets are sufficient to describe a system that is so interconnected (not unlike some BC lakes, however!). It would be important to ensure that this analysis will examine impoundments as a continuum, not as discrete, independent reservoirs.

Methods advanced in the proposal could be more specific, especially relative to critical calculations such as nutrient fluxes following construction of dams, escapement losses, and inputs from various land-use practices. Alternative data sources are not listed or described.

No real schedule/work plan is provided; i.e., all objectives apparently are to be completed at the same time. The budget shows \$92.5k salary for a single research assistant (?). The bios add to only .65 FTE.

ProjectID: 20050

Remove Excess Heat From Streams And Store It For Future Application

Parker's Inc (a close held general corp) dba BETTERFISH

Short Description: Build and field test a portable heat pump that could remove excess heat from streams. Determine through field tests if it is economically feasible to store and utilize that recycled heat for aquaculture and other purposes.

ISRP Recommendation - DNF / CBFWA Tier 3 / ISRP Comparison with CBFWA: Agree-DNF

Sponsor Funding Request = \$29,160 / CBFWA Funding Recommendation =

Recommendation:

Do not fund, technically and programmatically inadequate.

Comments:

Proposal is to develop and demonstrate utility of using a portable heat pump to cool stream rearing habitat during peak (July-October) periods of fish stress. It is hypothesized that heat removed during summer months can be stored in ponds or underground and then, with the same system, removed for later use or applied to rural aquaculture or other heat-demanding enterprises. The proposal is (1) inadequately presented, (2) of questionable feasibility and sustainability, and (3) is representative of solutions that address symptoms, not root mechanisms, and thus cannot contribute to long-term recovery of salmon populations in the Basin.

Any problem for the FWP addressed by proposal is poorly defined. There's no attempt to put the proposed work into the context of other parts of the FWP. There is no indication of the spatial distribution of problem streams - how much thermal energy would have to be removed to achieve a desirable effect. While high summer stream temperatures are a readily identifiable problem, there is no attempt in the proposal to identify the scale and magnitude of the problem, or whether it is feasible to address mechanically. Other shortcomings of the proposal are that no collaboration is identified, Objectives are described as steps in evaluating feasibility, i.e. no real objective is identified. No expected or alternatives outcomes are described. Methods aren't given in detail, No explicit monitoring or evaluation plan is presented .

ProjectID: 20061

Influence Of Marine-Derived Nutrients On Juvenile Salmonid Production

U.S. Geological Survey, Biological Resources Division

Short Description: Evaluate the influence and efficacy of marine-derived nutrient influx via adult salmonid carcass decomposition on the productivity of selected Columbia River basin tributaries and stream-rearing salmonids.

ISRP Recommendation - DNF / CBFWA Tier 2 / ISRP Comparison with CBFWA: Disagree-DNF

Sponsor Funding Request = \$309,859 / CBFWA Funding Recommendation =

Recommendation:

Do not fund, programmatically and technically deficient. Submit revised proposal next year.

Comments:

This is a commendable idea that needs development. In a proposal next year, proponents should specify the study system and demonstrate their technical ability to design and interpret natural isotopes studies. The proposal in its present form is regarded to be of questionable benefit to fish and wildlife, not based on sound science principles, and CBFWA itself questions how results might be integrated in current management actions.

How is this proposal going to advance ongoing efforts in the region? Would the information provide another tool for salmon recovery? The proposal is written with unseemly hyperbole: For example, "historically the Columbia River supported overwhelming numbers of spawning salmon". Science demands greater specifics than to

use such words as 'overwhelming,' particularly without offering any scale. The historical numbers were small compared to some Pacific salmon ecosystems.

One of several studies to test the role of marine-derived-nutrients (MDN) from salmon carcasses in stream and riparian productivity and fish production, this study is intended to determine optimum test site, conduct MDN supplementation experiment, and assess various responses including fish condition and other factors influencing their survival. As with so many extrapolations of the Bilby et al. hypothesis, there is inadequate comparison with stream systems that have viable salmon populations and carcass deposition. Yet the proponents devote one of the three objectives to characterizing stream and salmon productivity prior to addition. The question remains whether increased stream productivity will necessarily result in increased returns, and thus increased natural salmon carcass deposition, which this study would not evaluate. The technical basis is explained and rationale for benefits to fish and wildlife are given. They appear to acknowledge that MDN will complement, but not necessarily be the sole factor, in potential recovery.

The proponents correctly identify an obvious problem associated with depressed salmon populations in the Basin. The proposal describes the relationship to Section 7 of the FWP relating to “coordinated salmon production and habitat,” but it exhibits too little appreciation of how much this issue and approach is on-going or proposed for the Basin. Only minimal collaborative efforts (e.g., with Wind River Ecosystem Restoration Project, #9154) are described.

With regard to methods: Stable isotope sampling should probably encompass more sources (e.g., stream POM), and reviewers find it curious that no effort is to be made to examine the potential contribution of MDN to riparian and adjacent upland consumers. Replication of stable isotope samples is not addressed, and the proposal offers no description of the qualifications of the contractor who would conduct the stable isotope analyses.

The success of the study will depend on identification of suitable study sites. Since the proponents plan to evaluate response over the entire length of the stream, locating streams with adequate pre-data as well as being logistically feasible to work in might be a problem. The concept of paired treatment and control streams is good as well as before and after evaluations. The approach to documenting productivity (obj 2) seems reasonable.

Proponents intend to examine physiological factors as a measure of fish health, but no justification is provided. They propose to PIT tag juvenile salmonids to examine survival and movement but neglect to describe how fish will be collected, indicate how many fish will be tagged (except in the budget), or advise if wild or hatchery fish are to be employed. In Obj 3, introducing carcasses at a density comparable to historical escapement along the entire streams seems very ambitious unless this is a small stream. While the time period proposed for evaluation is not expressed, page 4 suggests it is 3 yrs.

ProjectID: 20101

Connectivity And Productivity Of Mainstem Alluvial Reaches

Pacific Northwest National Laboratory

Short Description: Evaluate the relative importance of remaining mainstem alluvial habitats by linking physical habitat variables, such as managed flow, to measurable biotic parameters and ecosystem processes.

ISRP Recommendation - DNF / CBFWA Tier 3 / ISRP Comparison with CBFWA: Agree-DNF

Sponsor Funding Request = \$166,905 / CBFWA Funding Recommendation = Recommendation:

Do not fund. However, this work has significant potential programmatic value both for the Reach and the region. Reviewers strongly recommend resubmittal of proposal in FY2001. Proposers should include more information on completed and ongoing research, more explicit objectives and methods, documentation of available data sets, expected outcomes, and collaboration with other Hanford Reach research efforts.

Comments:

This proposal is intended to describe the link between effects of physical habitat variables, such as managed flows, to measurable biotic parameters and ecosystem processes. They suggest reasonably that because annual escapement of fall chinook salmon is large and relatively stable in the Hanford Reach, that geological template and hydrologic conditions are compatible with life history requirements of fall chinook salmon. Although there is a clear relationship of their study to fish and wildlife problems and to the Fish and Wildlife program, their proposal will not provide a clear understanding of why fall chinook escapement remains stable there. Objective 1 is based on examining the historical data sets to describe past conditions which then would be used for comparison with field data collected in objectives 2. It seems the usefulness of these will depend on availability and quality of these data. Objective 2 is to test how hydrological processes influence primary and secondary production. They intend to measure primary production and benthic invertebrate secondary production, but do not address fish production. They make no mention of the life history of fall chinook, which is likely, important here. In the last objective they plan to use biological and physical data sets from field studies to develop a predictive model describing the effects of the suite of physical habitat variables on the suite of primary productivity variables and on secondary production variables. No attempt is made to describe how these models would be used other than "they would be useful in the restoration of fall chinook salmon". On page 8 they maintain the project will examine changes occurring in the river hydrograph during the last 60 years and assess whether these changes have modified the biological integrity of aquatic communities citing Karr 1991, but never mention it again.

As one of the seemingly few proposals that seek to identify extant ecosystem processes that account for or contribute to healthy salmon populations (ISRP 1998), this proposed study will attempt to identify those processes and attributes of the Hanford Reach alluvial habitats that sustain the viable 'core' population of fall chinook. In this respect, it appears to use the Reach to identify fundamental aspects of the "normative" Columbia River that can persist even with total upstream regulation. In particular, they propose to

quantify the relationships between regulated flows and ecological processes. Although complex interconnections among groundwater, alluvial floodplains and surface water have unquestionably been altered by regulated river flow, it is apparent that abiotic and biotic conditions within the Hanford Reach are still (?) compatible with the spawning, incubation and early life history requirements of fall chinook under these conditions. Their approach is synthetic, e.g., taking advantage of diverse existing datasets and on-going studies. While objectives and methods are unspecific, and seem to describe an exploratory rather than hypothesis testing approach, the analytical process and predictive model should advance our state of knowledge appreciable, perhaps to the stage that directed hypothesis testing can then proceed. The weakness of the proposal is the lack of specific lines of investigation, much less emergent hypotheses; proposers appear to be casting about for emergent properties through statistical and modeling of as many different relationships as possible.

ProjectID: 20103

Indexing Salmon Carrying Capacity to Habitat, Population, & Physical Fitness

Oregon State University

Short Description: The objective of this proposal is to develop a fast reliable method to determine salmonid carrying capacity for watersheds based on remotely sensed data. The initial research will test this approach by linking remotely sensed data to habitat quality . . .

ISRP Recommendation - Fund / CBFWA Tier 3 / ISRP Comparison with CBFWA: Disagree-fund; strongly recommend

Sponsor Funding Request = \$363,392 / CBFWA Funding Recommendation = Recommendation:

Fund. OK for a multi-year review cycle, fund for three years as proposed.

Comments:

A rapid inexpensive method is needed for determining salmon carrying capacity for watersheds -- as a guide for policy making and for monitoring habitat recovery.

Method. This project seeks to take advantage of rapid, remote detectability of thermal habitat types, and their relationship to stream landscape attributes, to test the feasibility of mapping spring chinook salmon and rainbow trout carrying capacity over broad scales in the Basin. They suggest that this approach may produce results that are equivalent to the vastly more costly, in situ snorkel survey methods of Hankin and Reeves. The Grande Ronde and John Day basins will be used as test cases to determine the applicability and scalability of the method. The project seems exceedingly well thought out, if not somewhat ambitious, but we would represent a phenomenal advancement in fish habitat quality inventory and mapping if successful.

The proposal argues persuasively that fish physical fitness can be estimated (or correlated) by the thermal regimes and that, in conjunction with habitat quality (landscape attributes), remotely sensed technology can be used to map fish carrying capacity. The logic and rationale behind this approach is described and illustrated in detail. Objectives are both measurable and associated with expected outcomes, including alternative conclusions. Extensive background research and development of the proposed

approach and methods appears to have set the stage for this test case. The proposal includes a detailed hierarchical design that is easy to follow and interpret. Methods are described in extensive detail, are broadly accepted, and have been tested and perfected under a variety of conditions. Analytical models are described, statistical considerations are discussed, and limitations and alternative interpretations are identified. Ground truthing and calibration of fish fitness and carrying capacity relationships incorporated into design. Independent validation of resulting methodology in new system, outside those in which it was calibrated, will apparently have to depend upon future support. The overall time frame is appropriate, although tight scheduling is probably not warranted. The researchers include well-qualified and experienced personnel.

This sort of identification and quantification of salmonid carrying capacity is a critical component of the FWP. It is explicitly related to project #9405400 (bull trout) and an unnumbered lamprey project. There are additional cooperative relationships described for redband trout studies and river connectivity studies under USFWS, OR DEQ and EPA/NSF. This was a very detailed proposal. This is a very innovative approach and parts are potentially useful. If it works, this research could provide a comprehensive monitoring tool. It may be able to identify potential for production and stress on the system. It should not be considered to be the sole source to determine carrying capacity. This is innovative research.

ProjectID: 20057

Strategies For Riparian Recovery: Plant Succession & Salmon

Oregon State University

Short Description: Determines the role of riparian plant diversity, structure and density on fish diet and habitat. Examines temporal and spatial dynamics of riparian inputs and their use by aquatic invertebrates and salmonids.

ISRP Recommendation - Fund / CBFWA Tier 3 / ISRP Comparison with CBFWA: Disagree-fund; strongly recommend

Sponsor Funding Request = \$429,463 / CBFWA Funding Recommendation = Recommendation:

Fund. Review in FY2002 funding cycle.

Comments:

A fundamental premise of this proposal is that stream food resources and habitat availability are key factors to the decline in salmonid populations in the Basin, as focused on how terrestrial (riparian) diversity influences stream communities. The proposers seek to examine primary and secondary food web linkages between various successional stages of riparian vegetation and stream-dwelling juvenile salmonids. The primary focus is the contribution of plant and insect litter. Analysis of historic patterns in riparian vegetation changes will be extrapolated to reconstruct changes in riparian habitat structure, diversity, density and extent over time. An admirable goal of the proposal is also to expand the scope of the study beyond reach or site specific phenomena to include connections with historical, watershed and regional processes; although the exact mechanisms for doing this are not obvious beyond upstream and downstream effects. The ultimate goal is to provide information useful in riparian restoration.

This proposal addresses a relatively ignored aspect of stream ecology, e.g., the comparative contribution of "fall-out" or litter insects to stream productivity, and its relationship to riparian vegetation composition and structure. In and of itself, this aspect would be worthy of support. There are a few unanswered questions, such as how they propose to separate the effects of riparian structure on stream temperatures and solar incidence from plant and litter fall. There are a plethora of questions and hypotheses, but no real description about how the various answers and products are going to be integrated; in this respect, a modeling component would definitely strengthen the project. The study is also concentrated in just the Umatilla and Imnaha basins, and one criticism is that applicability of these results beyond the eastern Oregon portion of the Basin (e.g., to upper Snake watersheds, eastern Washington, etc.) will be tenuous; inclusion or ultimate validation in other ecosystems would be desirable.

The proposal is explicitly related to NWPPC FWP sections that addresses both the health and integrity of the Columbia River Basin and the rebuilding of upriver populations. It also approaches habitat analysis from a whole watershed perspective, and addresses critical uncertainties and tests important hypotheses. The project is well justified and progresses from previous work funded by the FWP, although it appears to be somewhat isolated from other high-watershed research within the Program. There are points of collaboration with other research projects, some of which are part of the FWP. Much of this appears to be in the form of interest and courtesy transfer of information, and there are no evident interdependencies or other strong links between research programs.

Objectives are specific, given in the form of research questions and associated hypotheses. Components of the project design are reasonable and defensible, although complex in the hypotheses being addressed and linkages among diffuse components. The project would benefit from simple modeling approaches to sort out different independent factors, etc. Methods are well described mostly in sufficient detail. There is some vagueness regarding the size of study reaches. Reviewers have a question about where the information to "reconstruct riparian community succession" is coming from. Proposers say they will analyze time series of aerial photographs of riparian zones in different areas; reviewers assume these are available on the proposed study streams. Proposers, in their description of invertebrate sampling, propose to make visual counts of large-bodied aquatic invertebrates using a water scope along 5 transects; reviewers do not see this as providing additional information not present in Serber samples.

OSU facilities and personnel are likely the most qualified and capable within the region. This proposal includes good use of a conceptual model. This proposal is unique among riparian restoration as it takes an analytical approach to understanding functional relationships between riparian habitat and restoration activities. The proposal would benefit from incorporation of modeling to address and separate the effects of temperature, solar incidence, and succession.

Systemwide and Mainstem Resident Fish

ProjectID: 20066

Inventory Resident Fish Populations in the Bonneville, The Dalles, and John

U.S. Geological Survey, Biological Resources Division

Short Description: Provide baseline information on the relative abundance and community structure of resident fish species in the three lowermost impoundments on the Columbia River by reservoir and habitat type.

ISRP Recommendation - DNF / CBFWA Tier 3 / ISRP Comparison with CBFWA: Agree-DNF

Sponsor Funding Request = \$267,340 / CBFWA Funding Recommendation = Recommendation:

Do not fund. Submit a revised proposal next year to include statistical sampling design for population estimates; sampling gear biases and efficiencies; and alternative more quantifiable, less destructive sampling sources (e.g. underwater video, hydroacoustics, scuba surveys).

Comments:

This is a new project under the Mainstem Columbia River Umbrella Project #20515 to estimate resident fish populations in the Bonneville, Dalles and John Day reservoirs over three years. Proposers do make a case for the need to study and relate it specifically to the Fish and Wildlife Program. The proposed project appears to be designed for ecological indicators such as a fish IBI; however the work should include sculpins and chub to complete a comprehensive fish IBI. The study design is straight-forward and proposers have made good use of the literature. Reviewers suggest, however, proposers look at more literature from outside the basin on large rivers/reservoirs. Their descriptions of methods are incomplete. It is impossible to determine what potential gears will address what components of the expected fish assemblage. While some sampling techniques (e.g., mid-water trawls) can provide quantitative data if deployed properly, gears like gillnets provide poor quantitative samples that usually can't be scaled over the sampling strata. Under objective 1, the hypothesis states that "there are no differences in the relative size and species selectivities and relative efficiencies among different sampling gears fished within specific habitat strata". They do not describe how they plan to measure "efficiency", which is difficult. They do mention that information on gear efficiency and selectivity are available for many species that have been introduced into the Columbia River. In addition, there is no indication that more effective technology, such as underwater video and hydroacoustics will be used at all. Some information regarding details of the sampling design are skimpy, e.g., what data on geomorphic and physical features can be used to define and delineate sampling strata? Reviewers think this classification would have been made sometime in the past.

White Sturgeon

ProjectID: 8605000

White Sturgeon Mitigation And Restoration In The Columbia And Snake Rivers

Oregon Department of Fish and Wildlife

Short Description: Restore and mitigate for hydrosystem-caused loss of white sturgeon productivity through intensive fisheries management, supplementation,

and modified hydrosystem operation. Assess success of mitigation efforts, and assess losses in unstudied areas.

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$1,919,161 / CBFWA Funding Recommendation = \$1,919,161

Recommendation:

Fund. Review in two years. At that time the proposers should have participated in writing an umbrella proposal for all the white sturgeon projects in the basin. Project leaders should develop a long-term strategy and should present a plan to show how they are cumulatively moving towards objectives. Project leaders should invite an independent scientific review and produce a peer-reviewed synthesis on the state of the science on Columbia River white sturgeon.

Comments:

This is a component of a long-term (since 1986) project on population status, mitigation and restoration of white sturgeon stocks in the Basin, with focus on the lower mainstem reservoirs. It is part of the Umbrella project "Mainstem Columbia River Umbrella Proposal" and demonstrates significant collaborative effort, and clearly addresses the needs set out in the Fish and Wildlife program. The investigators have coordinated a logical sequence of projects that have addressed leading questions about the status and ecology of white sturgeon. They have been diligent in publishing their results in peer-reviewed scientific literature. However, the cost is high and the ISRP's 1998 recommendation for an independent review of white sturgeon in the Basin has not occurred. Long-term goals and strategies are not clearly presented. The methods are presented in too general terms and because of this it is often not possible to evaluate the specifics of the approaches described. What they propose to do to meet objectives is clearly stated but details on experimental design and exactly how they are proposing to approach each task are lacking. Task 4b contains the type of detail that would have been useful in evaluating the other tasks .

ProjectID: 20062

Adaptive Management Of White Sturgeons

U.S. Geological Survey, Biological Resources Division, Columbia River Research Laboratory

Short Description: Improve on an existing model for population viability analyses of white sturgeons and identify costs and benefits of alternative adaptive management actions, including supplementation and harvest management.

ISRP Recommendation - Fund / CBFWA Tier 3 / ISRP Comparison with CBFWA: Disagree-fund; strongly recommend

Sponsor Funding Request = \$184,674 / CBFWA Funding Recommendation =

Recommendation:

Fund through 2001 as proposed.

Comments:

Parsley et al. propose to assemble a PVA model from existing and emerging data on white sturgeon throughout the Basin, and to employ the model to design adaptive policies and actions to increase population densities. This addresses a critical and likely

erroneous, extrapolation of population characteristics from the unimpounded Columbia downstream of Bonneville to set biological objectives for recovery of more impounded and isolated populations. An existing PVA model they developed for the middle Snake will be expanded to meet the needs of this broader, Basin-wide approach. The need to develop and test a PVA model for Columbia River Basin white sturgeon populations is succinctly and logically developed. They are confining their management strategies to supplementation, broodstock management and harvest policies, although there is a specific step to integrate population status and genetic diversity information with habitat availability. However, their analysis is actually intended to assess risks associated with supplementation. The project focuses on probably the second most important fish, other than the various salmonid species, in the estuary. The project directly addresses FWP Measure 10.4 and sub-measures dealing with actions to restore white sturgeon populations and mitigate for system development and operation impacts.

Interaction of the population and habitat aspects with assessment of genetic variation could provide some intriguing and potentially valuable information on the extent of population homogeneity and migration exchanges. Strong feedback loops among scientists and resource managers, involving responses to the outcomes of alternative management scenarios, is also an attractive element of the proposal. This may also be one of the more interconnected (both within and among FWP) projects in the package. It also may be one of the few to result in timely, peer-reviewed scientific journal publications?

This project appears to be absolutely dependent on at least one proposed FWP project (#8605000), but also five other on-going (?) projects that provide sturgeon stock/population and harvest characteristics, genetic analyses results, and reservoir habitat information. All these projects will provide strong "value added" linkages to this project. In addition to the on-going and proposed FWP projects, this project will be coordinated with independent projects from Idaho Power, and Grant County PUD through the Oak Ridge National Laboratory.

Objectives are specific, and feed into a comprehensive product (the PVA model), and the process of expanding the existing ORNL PVA model appears feasible as long as fundamental data exists. Although not describing the detailed structure of the existing or expanded model, the methods appropriately describe steps required to parameterize, test and apply it. The tasks are well aligned with the objectives. Monitoring and evaluating appears to occur primarily through interaction with agencies to fine-tune management objectives and to evaluate model predictions, but timeframe for validation of management outcomes is beyond project duration. The sequenced schedule (1 yr for development of PVA model, 11 mo. to draft manuscript) is ambitious but proposers have capable background and track record. Integration of facilities and personnel of USGS-BRD (Parsley), the Oak Ridge National Laboratory (Jager, Bevelhimer) and Rutgers (Van Winkle, Jr.) should produce strong team capabilities. All have published in peer-reviewed journals recently and on current, state-of-the-science research. Why is this separate from 8605000? Information gained from this proposal should be applied to efforts under 8605000. The two projects should be integrated. The modeling exercise is a

separate task from 8605000, but the other objectives are integral to 8605000. At completion of study, results should be reviewed relative to the white sturgeon umbrella proposal. It should identify gaps to be addressed by 8605000.

ProjectID: 9902200

Assessing Genetic Variation Among Columbia Basin White Sturgeon Populations

University of Idaho

Short Description: Assessing genetic variation and stock structure among white sturgeon populations in the Columbia Basin using analyses of mitochondrial and nuclear DNA.

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$146,938 / CBFWA Funding Recommendation = \$146,938

Recommendation:

Fund through 2001 as proposed.

Comments:

This project is intended to advance the basic understanding of the evolutionary and population biology of white sturgeon in the Columbia River Basin and thus allow effective management of genetically defined populations thereby promoting conservation of existing biodiversity. This project is essential to the WFP's long-term actions on white sturgeon. Other long-term studies and management actions to address declines in white sturgeon in the Basin are contingent on this information. Strong collaboration is already demonstrated by the early start up of Obj. 1 under ODFW and other cooperator support. The project clearly addresses the needs of the Fish and Wildlife Program. The project has clearly stated measurable objectives and the description of the methods is complete. Techniques are routine genetic analyses. They have paid careful attention to the need to have statistically reliable sample sizes .

Pacific Lamprey

ProjectID: 20065

Identification of larval Pacific lampreys (*Lampetra tridentata*), river lamp

U.S. Geological Survey, Biological Resources Division, Columbia River Research Laboratory

Short Description: Determine characteristics that differentiate sympatric larval lamprey and evaluate thermal tolerances of larval lamprey by species

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$78,700 / CBFWA Funding Recommendation = \$78,700

Recommendation:

Fund for duration to 2002 as proposed.

Comments:

The problem faced by Pacific lamprey is directly related to the Basin's fisheries resources, not to mention native American culture; but more to the issue, the ability to effectively assess the status and limiting factors of Pacific lamprey as compared to its congeners is a fundamental need. Unlike other proposals that deal directly with Pacific lamprey population assessment and recovery strategies, this proposal addresses fundamental biological needs upon which assessment and recovery of lamprey populations in the Columbia River Basin are predicated: (1) the ability to identify egg and larval stages of Pacific and sympatric lamprey species, and (2) identification of biological and ecological limiting factors, particularly temperature. The objectives are clearly stated and tasks to meet them are provided. They state that identification of Pacific, river, and western brook lamprey ammocoetes has not been resolved and characters currently used have proven not to be diagnostic but only cite some unpublished data and give no detail as to the characters used or, since these apparently are not useful in separating species, which additional characters they will examine. Under Objective 1 they only say they will develop a time series from artificially spawned and reared ammocoetes and prepare "conventional morphometric descriptions". More detail here would have been useful. Methods for objective 2 are similarly vague in that they only state that they will test four temperatures but give no specifics to the temperatures proposed or why these were chosen. The design of the temperature study is appropriate.

There is some minor concern that the proposal depends heavily on collection of ammocoetes under other projects proposed to the FWP, and there is no indication of how these collections would be made in lieu of FWP funding of these other projects. The proposal identifies collaboration with the CTUIR, USFWS and IDFG but principally in providing ammocoete specimens. It is not apparent whether they have the capability to assume these collections if none of the three proposals are funded. Collaborations with other, non-FWP projects are not evident, which may reflect the lack of Pacific lamprey work beyond NWPPC rather than a lack of interest and incentive to collaborate.

Both measurable objectives and outcomes are listed. The project's experimental design is straightforward and within the available resources. Methods are appropriate, although not provided in sufficient detail to clearly judge. Tasks are clearly aligned with objectives,

although they are somewhat abbreviated and sometimes do not include a proposed product (e.g., the identification key). Other than verification of prior identification of ammocoetes after metamorphosis under Task 1.b, the proposal does not include monitoring and evaluation provisions, although a variety of approaches could be applied to test and validate the identification key. The 33-month schedule is almost excessive, but certainly sufficient to carry out work. USGS/BRD Columbia River Research Laboratory facilities and personnel are more than adequate for the proposed work. Long-term research on lamprey, 9402600, is contingent upon fundamental life history information that will be addressed in this proposal.

ProjectID: 9402600

Pacific Lamprey Research And Restoration

Confederated Tribes of the Umatilla Indian Reservation

Short Description: Assess status and survival limitations of Pacific lamprey in the Umatilla, Walla Walla, John Day, Tucannon, Grande Ronde basins. Implement and monitor restoration plan developed for the Umatilla River.

ISRP Recommendation - Fund in Part / CBFWA Tier 1 / ISRP Comparison with CBFWA: Partially agree-fund in part

Sponsor Funding Request = \$381,190 / CBFWA Funding Recommendation = \$381,190

Recommendation:

Fund in part at reduced level (10%) to assess results and develop a long-term strategy, along the lines of objective 2 (10% of the budget). This project has been ongoing for approximately 5 years, project scientists need to show and assess the results to date and develop a long-term strategy.

Comments:

Need for this research is not an issue, but performance and evidence of good science is lacking. The overall goal of this project is to identify Pacific lamprey enhancement opportunities and implement projects to bring back lamprey to the Columbia and Snake River tributaries. The problem faced by Pacific lamprey is directly related to the Basin's fisheries resources, not to mention native American culture. The project is apparently a continuation of work begun in 1995. Although Pacific lamprey constitute an important resource that has potentially suffered the same limiting factors as Pacific salmon in the Columbia River Basin, the scientific basis for identification of limiting factors, population assessment, better management, restoration actions, and other mitigation for hydropower impacts is meager. The current proposal is for continued evaluation of the status of lamprey stocks and mainstem passage and restoration methods. They intend to integrate these data with "new knowledge" with regards to genetics, disease, pheromones, and supplementation, although the sources of these data are not obvious. While information about lamprey is extremely important, it is not apparent from the proposal that significant progress has been gained since the 1995 status report (Close et al. 1995), at least from the standpoint of reporting and, in particular, publication of results.

Of the three objectives, only the third (testing constraints regarding lamprey restoration in the Umatilla River) and fourth (current lamprey presence and distribution in the John Day, Grande Ronde, Tucannon, and Walla Walla sub-basins) offer anything new and unique. Although logically describing the problem, the proposal lacks convincing illustration of the problem; graphical representation of information from the 1995 status report, integrated with new data, could have provided more substance to the proposal. The project is directly related to #8902401 (salmonid outmigration study providing lamprey samples) and #8802200 (passage project). The proposal cites collaboration with University of Idaho, University of Minnesota, Oregon Department of Fish and Wildlife, USGS-BRD, and the USACE. Generally the proposed objectives are explicit and measurable, although expected outcomes are not listed. However, progress is ill defined and there is no evidence of results other than technical status report produced one year after project initiation. The project's experimental design lacks specificity. Methods are

arguably adequate given the lack of specificity in the objectives and lack of task descriptions. No explicit tasks are identified, although some implicit tasks are included in Methods description. Monitoring and evaluation criteria are not directly discussed. A one-year schedule is proposed, but some objectives and tasks (e.g., #3) would seemingly encompass more than one year. Facility and personnel descriptions are inadequate to assess the capability to conduct the proposed work, especially objectives #3 and #4. The lamprey program is of high priority; however, this project has been ongoing since 1994 and results to date are not adequately described .

Systemwide Wildlife Proposals

ProjectID: 9705900

Securing Wildlife Mitigation Sites - Oregon

ODFW for the Oregon Wildlife Coalition (OWC): ODFW, CTWSRO, CTUIR, BPT and USFWS in collaboration with a variety of wildlife habitat groups and organizations such as TNC, Metro, Oregon Natural Heritage Program, etc.

Short Description: Coordination, planning, assessment, acquisition, enhancement, O&M and M&E of wildlife mitigation in Oregon by the Oregon Wildlife Coalition as specified by the NW Power Planning Council Fish and Wildlife Program.

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree

Sponsor Funding Request = \$5,000,000 / CBFWA Funding Recommendation = \$3,900,000

Recommendation:

Fund. This is a good example of an umbrella proposal.

Comments:

This umbrella proposal describes Oregon wildlife mitigation activities related to coordination and planning between Oregon wildlife managers and the implementation of wildlife proposals. It contains a general description of the approach to mitigate for Habitat Units (HUs) lost as a result of the construction and operation of the Columbia Basin hydropower system. Oregon acquires wildlife mitigation sites according to prioritized list contained in the "Brown Book". The proposal contains a thorough description of the history of the Oregon Trust Agreement Planning Project and its enhancement through the addition of GAP analysis for the selection of particular sites. A complete history of Bonneville Power's wildlife mitigation efforts under the Northwest Power Act is also included. Criteria used to rank sites are listed. The Oregon Wildlife umbrella and subproposals are, in general, a good example of the umbrella concept.

ProjectID: 9609400

WDFW Habitat Unit Acquisition

Washington Department of Fish and Wildlife

Short Description: Restore and enhance 27,600 acres of wildlife habitat in Washington to mitigate for losses associated with the construction of Grand Coulee, Chief Joseph, McNary, and John Day dams. By funding this project, BPA will receive an estimated minimum 17,500 Habitat Units.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree

Sponsor Funding Request = \$1,912,335 / CBFWA Funding Recommendation = \$1,912,335

Recommendation:

Fund for one year. Subsequent funding contingent on addressing deficiencies.

Comments:

The proposal clearly indicates the planned activities, but contains very little discussion of the management context, little detail on methods, justification, or overall objectives. It's not clear how it all fits together. The proposal places heavy emphasis on doing things because they are required, but there is little information on what specifically will be done to implement the Washington mitigation program. There is insufficient information presented to reviewers to explain why the properties they select for acquisition are the priority areas for protection and what will be gained from their acquisition. Future plans for monitoring are mentioned but plans for assessing impacts are not provided. This proposal should be formatted in a similar manner to the Oregon umbrella, with the specific mitigation sites and restoration efforts submitted as sub-proposals that contain sufficient information for technical review. Proposal authors need to provide interpretive detail on their proposed activities.

ProjectID: 20014

Evaluate Songbird Use Of Riparian Areas During Fall Migration

Department of Biological Sciences, University of Idaho

Short Description: Evaluate songbird use of native (Willow-dominated) and non-native (Russian-olive dominated) riparian areas as fall migration stopover areas in the Mid-Columbia River Basin.

ISRP Recommendation - Fund / CBFWA Tier 3 / ISRP Comparison with CBFWA: Disagree-fund

Sponsor Funding Request = \$32,760 / CBFWA Funding Recommendation =
Recommendation:

Fund (innovative for the FWP, medium priority)

Comments:

This proposal requests funding for a fourth and final year of a project to assess the influence of riparian vegetation on migratory songbird use. It proposes to continue monitoring and evaluating songbird utilization and insect prey availability in native and non-native vegetation. Six study sites in Mid-Columbia River riparian areas are designated. During fall migration songbirds, insects and riparian vegetation will all be measured for species richness and abundance. This is a straightforward proposal that responds to the ISRP recommendation for more research on wildlife related activities. It has limited scope and is well written with clear measurable objectives, methods and rationale. Sources of bias and lack of precision in net sampling gear are adequately explored. The budget is modest.

However, the proposal has some shortcomings that need correction. The sample size may be too small to detect small differences in species richness or abundance. Statistical methods appear to be inappropriate for the type of data collected. We recommend that statistical advice be sought. The focus on songbirds may neglect other species, such as North American migratory species, that might have opposing preferences for tree species. How will this work contribute to establishing management goals for exotic tree species if actions favoring songbirds are detrimental to other native bird species? Interactions between bird abundance and insect abundance have not been properly addressed. The description of insect investigations does not acknowledge the “standing crop” problem, where low abundance of insects could be due to consumption by songbirds. Further, the lack of hypotheses regarding which orders of insects are preferred by songbirds leads to the opposite problem where high abundance of insects may not necessarily mean good forage base for the songbirds, but rather that the songbirds have an aversion to the kinds of insects captured. Possible interactions between bird and insect abundance need to be considered.

The specific benefits of the project are unclear because the authors do not identify the NPPC Program measures, which this project addresses, nor do they identify any other planning document to establish its utility to wildlife programs in the basin. But when used in conjunction with information on other species of birds and preferences of songbirds for insect species as food, the project could provide useful management information for future riparian restoration efforts. For example, results from this study

could provide information on the practice of eliminating non-native Russian Olives that many FWP restoration activities pursue.

Systemwide Coordination, Information Services, and Independent Scientific Review

ProjectID: 8906200

Fish And Wildlife Program Implementation

Columbia Basin Fish and Wildlife Authority

Short Description: Facilitate implementation of the FWP by providing the Draft Annual Implementation Workplan, Research, Monitoring & Evaluation Plan, Program Accomplishments Annual Report, Columbia Basin Status Report, and the Recommended Additions to the Program.

**ISRP Recommendation - na / CBFWA Tier 1 / ISRP Comparison with CBFWA: na
Sponsor Funding Request = \$2,180,531 / CBFWA Funding Recommendation = \$2,042,041**

Recommendation:

The administrative functions are non-reviewable; however, the technical aspects of the proposal are not well supported.

Comments:

This proposal seeks funding for continued CBFWA activities of 19 fish and wildlife agencies and tribes. These activities include the development and review of the annual implementation plan, project review, development of the research monitoring and evaluation plan, program evaluation and coordination. The proposal provides a clear overview of the scope and importance of the work. The administrative functions described cannot be reviewed using scientific criteria.

The description of the CBFWA history, organization and infrastructure is much improved over the FY99 proposal. However, the proposal is still inadequate in its description of the process in which the annual implementation work plan is developed and funding is prioritized. The technical aspects of the proposal are not well supported. The development of a regional monitoring and evaluation plan (Objective 4) is desirable, but more thought should be given to how monitoring and evaluation will be done. A more detailed description should be provided. For example, how will monitoring be conducted at project and program levels? Will status reports be annual? How is Objective 6 distinct from Objective 4? The ISRP is also concerned about whether CBFWA is the appropriate group to develop and conduct the monitoring plan. External monitoring and evaluation is likely to be more objective and have a broader perspective.

ProjectID: 9803100

Implement Wy-Kan-Ush-Mi Wa-Kish-Wit Watershed Assessment & Restoration Plan

Columbia River Intertribal Fish Commission

Short Description: Track and coordinate tribal watershed projects, coordinate habitat improvements with fish production, develop regionally accepted watershed assessment methods, and design monitoring plans; develop public outreach and education on watershed restoration.

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$355,325 / CBFWA Funding Recommendation = \$267,471

Recommendation:

Fund (high priority). OK for a multi-year review cycle. Review again at the midpoint of the performance period, in FY2002.

Comments:

This is a proposal to promote tribal watershed restoration through several activities: 1. Develop standardized watershed planning and restoration methods; 2. Coordinate restoration activities with salmonid production; 3. Streamline project implementation; 4. Coordinate monitoring and evaluation; promote public awareness of watershed restoration. The proposal is clear and well written, containing a detailed rationale and approach that are set within the regional context. However, the proposal lacks detail about the activities to be undertaken through the subcontracts. It should also provide more detail on the objectives for the "outreach" component and a description of how that outreach will be evaluated. The investigators are also listed as participants on other

proposals. Are they committed for more than 1.0 FTE? The total time commitment of the principal investigators to this project and other projects should be evaluated.

ProjectID: 9800800

Regional Forum Facilitation Services

DS Consulting

Short Description: Facilitate discussions of Regional Forum teams to enable more active and effective participation of all team members. Mediate conflicts as they may arise in and out of meetings and provide "process guidance" to improve decision making.

ISRP Recommendation - DNF / CBFWA Tier 1 / ISRP Comparison with CBFWA:

na

Sponsor Funding Request = \$183,500 / CBFWA Funding Recommendation = \$75,000

Recommendation:

Do not fund. Include facilitation in specific activities as needed.

Comments:

This is a proposal to fund facilitation services for the regional forum. Although we recognize that facilitation may well be needed from time to time for difficult decisions and discussions, we have difficulty seeing why facilitation services are needed for routine activities and coordination of meetings. The proposal described some "facilitation" tasks that are standard responsibilities of meeting chairs and rapporteurs. For example: scheduling meetings, setting up conference calls, agenda time management and note taking. Facilitation should not be needed for such routine meeting tasks.

The proposal fails to establish why such services are necessary. The proposal does not fit the evaluation criteria. No evaluation of past success is presented other than a statement that forum members have expressed satisfaction with the services. We conclude it is unnecessary and wasteful to "pre-fund" 800 hours of expensive facilitation for routine meetings. It would make more sense for individual projects to pay for facilitation on an as-needed basis.

Our FY99 comments continue to apply:

The proposal does not contain any evaluation of past success. This task does not have that much to do with the Fish and Wildlife Program. We question whether BPA should be a funding source for this purpose.

ProjectID: 9202400

Protect Anadromous Salmonids In The Mainstem Corridor

Columbia River Inter-Tribal Fish Commission – Law Enforcement Department

Short Description: Protect anadromous fish species throughout the Columbia Basin with an emphasis on protection of weak stocks. Protection will be concentrated within the hydro-corridor (e.g., between Bonneville and McNary dams) and focus on adult spawners.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier / ISRP Comparison with CBFWA: na

Sponsor Funding Request = \$388,427 / CBFWA Funding Recommendation = Recommendation:

Fund for one year. Subsequent funding contingent on more complete background information on the magnitude of the illegal harvest problem and the expected benefits to fish and wildlife.

Comments:

This proposal requests funds for enhanced enforcement for the protection of weak stocks by increasing the number of personnel, increasing enforcement efficiency, and increasing compliance. The proposal is well written. Its relation to the Fish and Wildlife Program are clear. The activities and objectives are clearly defined. Specific monitoring criteria are built in and the reviews of past work are very positive. Overall, the proposal seems like a reasonable request. Rather than simply relying on more people to improve enforcement, the proposal takes an evaluative approach to several different components of enforcement. There is a scientific basis for law enforcement and protection of returning adults, particularly from weak stocks. However, the proposal would benefit from more complete background information on the magnitude of the illegal harvest problem and the expected benefits to fish and wildlife. It would also be desirable to have more detail provided on how, as a result of this project, efficiency and compliance will be improved and cross-zone enforcement coordinated.

ProjectID: 8810804

Streamnet: The Northwest Aquatic Information System

Pacific States Marine Fisheries Commission

Short Description: Provide essential data services to the Fish & Wildlife Program including: 1) regionally consistent biological data, 2) access to data and documents via the Internet, Library, and custom products, and 3) technical support to projects and activities.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$1,936,453 / CBFWA Funding Recommendation = \$1,936,453

Recommendation:

Fund for one year. Subsequent funding contingent on the results of an independent project review on the quality of service delivery. Subject this project to a programmatic information management review as recommended in the ISRP's FY99 report.

Comments:

The programmatic aspects of the proposal are clear. However, it is unclear how this effort differs from FPC, CWT and PIT tag information systems. Although attempts are made to explain the distinction, the potential for duplication of data processing effort remains. The split of services seems arbitrary. We recommend evaluating the possibility for combining the data processing functions of the Fish Passage Center, PITAGIS (direct data), Streamnet, and DART. PSMFC has the critical mass to create a regional central database as recommended in the ISRP's commentary on the smolt monitoring proposals. For example, the DART forecasting model could be a link on the Streamnet website. We repeat the recommendation made in our FY99 review that the proposal could have better documented its relationship to other databases in the basin, such as PITAGIS.

It is hard to get a good sense from the proposal whether this many personnel are really necessary to do the information project. The program needs to develop measures of effectiveness and assess its impact in terms of those measures. Use of the services should be documented, and more focus should be placed on outputs rather than inputs. In addition, the proposal presents information on data consistency but not on quality control. Strategies for quality control should be strengthened. We recommend that the project receive an independent project review on the quality of its service delivery.

ProjectID: 9601900

Second Tier Database Support For Ecosystem Focus

Bonneville Power Administration

Short Description: Implement certain non-discretionary actions to provide single-point, Internet-based access to a subset of information to guide and support BPA's independent decisions pertaining to its responsibilities under the Power Act and Endangered Species Act

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 3 / ISRP Comparison with CBFWA: Disagree-fund

Sponsor Funding Request = \$180,000 / CBFWA Funding Recommendation = Recommendation:

Fund for one year. Subsequent funding contingent on a programmatic information management review as recommended in the ISRP's FY99 report. Evaluate the possibility of combining the data processing functions of the Fish Passage Center, PITAGIS (direct data), Streamnet, and DART.

Comments:

This proposal is to provide monitoring and evaluation by integrating and delivering information from several separate data centers funded by the Fish and Wildlife Program. Data sources are polled through the Internet for subsets of data that are integrated into the database DART.

The ISRP made the following comments in FY99: "The proposal does not clarify why the problems in the primary database are not fixed instead of adding a second tier (this proposal). There is little explanation of how the second tier is done. Objectives are not the same in the table and the text. The work is not so much collaborative as competitive, but all this is laid out and stated in terms of the need to cooperate. The project seems to be the result of frustration with other projects not doing what was expected."

The FY00 proposal explicitly addresses issues raised in the FY99 ISRP review. The relation of this project to the Fish and Wildlife Program is clear. The project provides useful coordination for the integration and delivery of information in what seems like an appropriate use of technology. But because tensions between various data programs are obviously still present, it is not clear how the appropriate coordination will be accomplished if the project depends on the cooperation of primary data sources. In addition, there continues to be duplication of effort with other information service projects. Strategies for quality control and assessment of impact should be strengthened. In FY99, the ISRP recommended an information management review. This proposal

suggests that a review would be beneficial and would help contribute to the solution of some of the regional information management problems.

ProjectID: 20069

Innovation Proposal Fund: Construct fuzzy logic decision support system fo

E&S Environmental Chemistry, Inc.

Short Description: Develop a knowledge-based decision support software system that will interface with output from watershed assessments based on the Oregon Watershed Assessment Manual. The fuzzy logic system will classify stream reaches . . .

ISRP Recommendation - DNF / CBFWA Tier 3 / ISRP Comparison with CBFWA: Agree-DNF

Sponsor Funding Request = \$100,000 / CBFWA Funding Recommendation = Recommendation:

Do not fund. We recommend resubmitting the proposal in FY2001 with a better description of the project's relationship to existing work in the Fish and Wildlife Program, better programmatic justification and correction of other deficiencies noted below. (innovative)

Comments:

This proposal is to assist Watershed Councils in performing watershed assessments through the development of a standard methodology for integrating assessment results, prioritizing restoration and monitoring the effectiveness of restoration activities. The product would be decision support software. The proposal presents an excellent description of the technical and scientific problems facing watershed councils. The decision support software is an interesting idea that has potential efficiencies in putting the science and technical information in the hands of watershed council members who have to prioritize activities. The project would fit well within the idea of "innovative" grants.

Fuzzy logic is a widely accepted analytical approach to decision making in cases where criteria are ambiguous. It provides a set of rules for evaluating decision pathways based on membership in sets called fuzzy sets. This approach should be highly appropriate to the purpose intended; helping watershed councils reach decisions with incomplete or ambiguous information. However, assertions about the need for precision in model-based approaches using simulation and statistical methods are not supported. Hence, the proposal does not provide evidence that rule-based decision support systems are superior. The need for this approach is not justified adequately. In addition, the proposal's relation to the Fish and Wildlife Program, connections to other research and the likelihood of benefiting fish and wildlife in the Columbia River Basin all need to be strengthened.

The proposal also lacks a specific example of a successful application of fuzzy logic to problems as complex as those of watershed management. That the products of the application would actually produce positive results for a watershed council in Oregon is possible, but reviewers are given no basis for evaluating the probability of success. Other than the development of a software product, the proposal is silent on what a successful application would look like. Many possibilities are described, but no specific outcomes that could be used to gauge the success of the project are presented. The applicant is asking the funding agency to bear all risks for this knowledge engineering application.

The proposal has a low likelihood of benefiting fish and wildlife in Oregon because it has not been tested as a pilot program at the expense of the proposer and the intended recipient, the State of Oregon GWEB (acronym used but never defined in the proposal). It is a promising technique but there is no way to judge based on the information presented in the proposal how long this would take in order to be successful, if that is possible. The authors should also use less jargon in the proposal and explain what they propose in terms that readers will understand.

ProjectID: 20027

Electronic Columbia Basin Watershed Newsletter

Intermountain Communications

Short Description: Delivers by email to policymakers, stakeholders, watershed councils, media and the public a monthly electronic newsletter offering complete information about Columbia Basin watershed councils and other watershed-related news.

ISRP Recommendation - Delay Funding / CBFWA Tier 3 / ISRP Comparison with CBFWA: Disagree-if deficiencies corrected

Sponsor Funding Request = \$56,600 / CBFWA Funding Recommendation = Recommendation:

Delay funding until the proposers provide more detail on the missing information described in the comments.

Comments:

This proposal is to develop a monthly electronic newsletter for watershed councils to provide information, education and communication. Such a bulletin would probably be a useful information tool for watershed councils, but the proposal does not clearly establish the need for it within the Fish and Wildlife Program. The proposal is sparse in detail. An assessment of the demand for this service and a discussion of the methods to be used in assessing its impact are needed. Does a monthly newsletter provide timely information to policymakers? What types of information will be provided? Will data be shared? Will research results be reported? Will useful information from “outside” the watershed council system be presented? How will impacts be assessed? How specifically does this proposal differ from Project 20029? The proposers are the same people who produce the Columbia Basin Fish and Wildlife Newsletter, a product that the ISRP considers very high quality and useful, but in this proposal it is not clear exactly what the Council is being asked to fund.

ProjectID: 20029

Electronic Columbia Basin Fish & Wildlife Research Report

Intermountain Communications

Short Description: Deliver by email to policymakers, stakeholders, media, and the public a monthly electronic newsletter offering summary information about research and research-related activities relevant to Columbia Basin fish and wildlife restoration efforts.

ISRP Recommendation - Fund / CBFWA Tier 3 / ISRP Comparison with CBFWA: Disagree-fund, but not high priority

Sponsor Funding Request = \$56,600 / CBFWA Funding Recommendation = Recommendation:

Fund for one year to see how well it works. If the report did nothing more than provide summaries of the scientific reports submitted to BPA it would provide a valuable service.

Comments:

This proposal is very much like the watershed newsletter proposal (20027) and suffers from the same weaknesses. As with 20027, an assessment of the demand for the service and a discussion of methods that will be used to assess its impact are necessary. The programmatic need is not clear. Does a monthly newsletter provide timely information to

policymakers? Will it duplicate other efforts? This proposed research report covers a much larger subject area than the watershed council newsletter, so it would be helpful to have more detail on how it would be done. How will information be prioritized? What quality control will be employed? Again, the ISRP considers the products produced by the proposer to be very high quality and useful, but in this proposal it is not clear exactly what the Council is being asked to fund.

ProjectID: 9800401

Electronic Fish And Wildlife Newsletter

Intermountain Communications

Short Description: Delivers by email to policymakers, stakeholders, and the public a weekly electronic newsletter containing objective, summary information about Columbia Basin fish and wildlife issues

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$150,450 / CBFWA Funding Recommendation = \$150,450

Recommendation:

Fund (High priority)

Comments:

This is a proposal to continue the fish and wildlife reporting system through electronic distribution. The proposal itself is weak. The programmatic need is not established. Detail on how information is gathered and presented is lacking. Quality control mechanisms are unclear. As with the other two proposals from this source (20029 and 20027), an assessment of demand for the service and a method for assessing the service's impact should be conducted. However, the newsletter has been in existence for one year and the ISRP, as one of the consumers of this product, notes that the newsletter is very high quality and frequently used.

ProjectID: 8907201

Independent Scientific Advisory Board Support

Department of Energy/Oak Ridge National Laboratory

Short Description: Provide support through contract with DOE for Dr. Charles Coutant for the Independent Scientific Advisory Board (ISAB), for scientific advice to the NPPC's FWP and NMFS's ESA programs.

ISRP Recommendation - na / CBFWA Tier 1 / ISRP Comparison with CBFWA: na
Sponsor Funding Request = \$99,918 / CBFWA Funding Recommendation = \$49,959

Recommendation:

Not reviewed

Comments:

Not Reviewed

ProjectID: 9600500

Independent Scientific Advisory Board

Columbia Basin Fish and Wildlife Foundation

Short Description: Provide independent scientific advice and recommendations on issues related to regional fish and wildlife recovery programs under the Northwest Power Act and the Endangered Species Act.

ISRP Recommendation - na / CBFWA Tier 1 / ISRP Comparison with CBFWA: na
Sponsor Funding Request = \$683,580 / CBFWA Funding Recommendation = \$341,790

Recommendation:

Not reviewed

Comments:
Not Reviewed

Lower Columbia

ProjectID: 9306000

Select Area Fishery Evaluation Project

Oregon Dept. of Fish & Wildlife, Washington Dept. of Fish & Wildlife, Clatsop County

Economic Development Council

Short Description: Enhance harvest opportunities through creation and expansion of hatchery salmonid fisheries in the lower Columbia River while protecting depressed stocks. Develop fisheries through application of results from experimental net-pen rearing, and monitor and

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$1,500,000 / CBFWA Funding Recommendation = \$1,400,000

Recommendation:

Fund for one year with medium priority. Subsequent funding contingent on an extensive programmatic performance review of the project.

Comments:

This project has been in progress for five years (excepting a two-year non-funded pilot project), with an investment to date of \$5.6 million. It has been closely monitored by National Marine Fisheries Service, has produced an Environmental Assessment and was recently the subject of an independent peer review. Annual reports are cited in the proposal, but there is little summary material to aid reviewers. The proposal would benefit from a listing of results and accomplishments to date. While multi-year funding is viewed favorably, there should first be an extensive programmatic review of the project by ISRP or ISAB.

Specific questions and comments that should also be addressed are:

The proposal is well-written and documented, with well connected and logical objectives and tasks. Methods are not so well presented, however. One of the project's strongest elements is the collaborative effort (with NMFS) to develop a more natural rearing regime and increase the quality of smolts released. So long as this project continues to maintain separation from natural stocks, it will represent a valid use of hatchery fish. Thus far, compared with traditional hatchery rearing, returns have been good in the face of low ocean survival. Use of winter dormancy and accelerated spring feeding appear promising, though it will be some time before results are realized from this experiment.

The role of avian predation, briefly referenced, is not addressed. One reason for improved survival of Young's Bay smolts may be their release down-river from a large tern colony, and any move to up-river rearing and release sites may heighten exposure of the migrating smolts to predation. Is the monthly schedule for water quality sampling adequate to address temporal variations? Details of monitoring techniques are sketchy. Given so many experimental variables (smolt size/condition, rearing density, release time and date, etc.), different fish species and uncontrolled environmental conditions, the

question arises whether adequate tests have been developed to statistically account for them all in evaluating results.

ProjectID: 20013

Restore Unobstructed Fish Passage To Duncan Creek

Skamania Landing Owners Association (SLOA)

Short Description: Restore unobstructed fish passage to Duncan Creek from the Columbia River through creation of an open concrete fish flume at the mouth of a dam co-managed by the Skamania Landing Owners Association and Washington Department of Fish and Wildlife.

ISRP Recommendation - Fund / CBFWA Tier 3 / ISRP Comparison with CBFWA: Disagree-fund; strongly recommend

Sponsor Funding Request = \$190,000 / CBFWA Funding Recommendation = Recommendation:

Fund for one year as proposed.

Comments:

The proposal includes a commendable cost-sharing arrangement, and appears promising as a benefit to chum salmon, coho salmon and sea-run cutthroat in the lower Columbia River. The proposal excels in outlining the historical importance of Duncan Creek to chum salmon and other nearby efforts that would complement this project. The proposal presents an innovative approach focusing on natural restoration of salmonids. The study may be useful to the region as a test of the natural resiliency of depressed stocks when production constraints are removed. Reviewers caution that chum salmon should not be stocked, however, until Washington Department of Fish and Game evaluate chum salmon stocks and develop a plan for establishment of a wild chum salmon population.

The project needs a more clearly defined protocol for monitoring spawning activity and reporting of results (approved by WDFW). Authors should include some estimate of anticipated results. They should also discuss habitat criteria more explicitly (what other conditions are necessary in the Duncan Creek watershed to support anadromous fish?) and explain plans to evaluate results beyond the fact that spawning surveys are to be conducted annually.

Specific questions and comments that should also be addressed are:

There is no evidence of a watershed assessment plan. From what source will the stock for chum salmon come? Is spawning habitat the only limiting factor for chum? And is the estuary adequate to support juvenile chum? The cost-sharing budget figure (Page 4) appears to be incorrect.

ProjectID: 20098

Develop And Evaluate Selective Commercial Fishing Gear: Tangle Nets

Washington Department of Fish and Wildlife

Short Description: Operate no-take selective fisheries using a tangle net to exploit strong stocks of anadromous fish while allowing live-release of non-target fish on the Columbia River. Evaluate the post-release survival of all species caught, and compare to gill nets.

ISRP Recommendation - DNF / CBFWA Tier 2 / ISRP Comparison with CBFWA: Disagree-DNF

Sponsor Funding Request = \$184,673 / CBFWA Funding Recommendation =

Recommendation:

Do not fund.

Comments:

This is considered interesting and potentially worthwhile, but it is predicated on the limited experience of the use of tangle nets in British Columbia. There is inadequate discussion of the extent or results of that practice, however, and too many questions remain unanswered to justify the proposal for the benefit of the target fish species. The project would directly engage the commercial fishing industry and hence involve policy issues. The questions arise, then, to what extent that industry is willing to participate, what care commercial fishermen would pledge to assure safe catch and release, to what extent they may be expected to adhere to handling and release procedures for non-target fish, and whether benefits would extend beyond the commercial fisheries to the fishery resource itself.

Specific questions and comments that should also be addressed: include whether the Tribes and commercial fishing organizations, as principal beneficiaries, might (should) be expected to fund the proposal. Greater detail should be provided for some areas of the proposal. For example, (Objective No. 4), are fish that are held for 24 hours (for short-term survival estimates) and radio-tagged (for longer survival estimates) from different batches? How are fish to be tracked, and what are the potential pitfalls of this approach in assessing long-term survival? Will only tagged males be used to fertilize the eggs of tagged females (Task No. 5b)? If not, will that make a difference? Will the number of surviving eggs be related to the age or biomass of the female (Task No. 5c)?

ProjectID: 20107

Reconnect The Westport Slough To The Clatskanie River

Lower Columbia River Watershed Council

Short Description: Improve and enhance anadromous and resident fish habitat by reconnecting the Westport Slough to the Clatskanie River. A 12 foot culvert placed in the dam blocking the head of the Westport Slough will reestablish a crucial link for fish migration.

ISRP Recommendation - Fund / CBFWA Tier 3 / ISRP Comparison with CBFWA: Disagree-fund; strongly recommend

Sponsor Funding Request = \$29,850 / CBFWA Funding Recommendation =

Recommendation:

Fund with high priority.

Comments:

This is a modest proposal with potentially big benefits, and with very impressive cost-sharing. The cost to BPA is relatively small. The proposal addresses reconnection of the Westport slough to the Clatskanie River in the Lower Columbia River. Estuarine habitats are critical juvenile staging and rearing habitats for young salmon and steelhead as they make the transition from freshwater to saltwater. Estuarine habitats and their quality are thought to be one of the limiting factors in the basin for juvenile fish mortality. The proposed work here offers an opportunity to test juvenile and adult salmon use of a reconnected slough.

The proposal does not describe in adequate detail, however, potential adverse side effects of the proposed action, limiting factors in the tributaries, and a summary of the Corps of Engineers engineering and environmental assessment efforts. This project should require a favorable environmental assessment and engineering plan before implementation.

Specific questions and comments that should also be addressed include:

Habitat restoration criteria are discussed only in general terms. The proposal would benefit from inclusion of a map. Is it assured that naturally occurring fish populations from the Clatskanie would populate the Westport Slough? If so, over what time period? Would supplemental plantings be required? Would the release of built-up toxins and sediments from the slough affect water quality or aquatic biota in the river, and if so, with what result?

Are there other factors (other than the plugged slough) that lead the Clatskanie River to be on the 303d list? Do those factors limit the benefits of the proposed reconnection? Similarly, are the 24 miles of salmonid habitat in tributaries to the slough limited only by fish passage problems, or are there other water quality concerns? What is the basis for the statement (Page 9) that expected results will be improved water circulation and flow? Have flows through the culvert/slough been estimated? Will fish movement through the culvert be possible? Has sediment transport modeling been done? Will flow through the slough be sufficient to mobilize sediments?

ProjectID: 20108

Recruit, Train, Organize & Support River Stewards

Oregon Trout

Short Description: Working to recruit, train, organize and support individuals practicing river stewardship in sub-basin communities. This grass- root program strives to empower citizens with knowledge and tools to actively protect and enhance their local watershed.

ISRP Recommendation - DNF / CBFWA Tier 3 / ISRP Comparison with CBFWA: Agree-DNF

Sponsor Funding Request = \$75,750 / CBFWA Funding Recommendation =

Recommendation:

Do not fund

Comments:

The River Steward philosophy is commendable, but the proposal does not offer a clear and convincing need or to set forth specific goals. It lacks specifics in discussing the significance of river stewards to regional programs. Further, it does not specify any requirements for ‘riverkeepers.’ The authors do not provide sufficient detail to identify objectives other than in a generic sense.

Specific comments and questions that should also be addressed are:

In recruiting and training members of the Riverkeeper Network, founded by Oregon Trout, it must be asked what benefits or measures of success can be demonstrated. What curriculum materials are intended? They must be critically evaluated to assure that scientifically sound material would be communicated.

ProjectID: 20120

Evaluate Factors Limiting Columbia River Gorge Chum Salmon Populations

U.S. Fish and Wildlife Service

Short Description: Evaluate factors limiting chum salmon production, spawning group relationships, population dynamics, biological and ecological characteristics, and implement habitat enhancement in tributaries below Bonneville Dam.

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$189,853 / CBFWA Funding Recommendation = \$189,853

Recommendation:

Fund with high priority.

Comments:

The proposal is quite sound, well organized with logical objectives and with commendable expression of hypotheses and monitoring plans. Some of the hypotheses might have been cast in a more useful format, however. The seeming preoccupation with the null often does little to explain a proposed action. The project should generate useful information and result in an increased number of chum salmon in the Lower Columbia.

Specific questions and comments that should also be addressed are:

There is some concern that the principal investigators may be over-committed in absorbing this and other projects. Those named in this proposal, for example, are key to a number of other proposals, and one wonders how they may be able to address their responsibilities if all of the proposals are funded. The U. S. Fish and Wildlife Service is presently conducting a watershed analysis of the Hardy Creek Basin. Does this work rate high priority in the assessment? Are watershed analyses in place for Hamilton and Grays Creeks as well?

How will this project aid the Washington Department of Fish and Wildlife to restore chum salmon by using remote streamside incubators to reintroduce chum? Are chum to be taken out of the three creeks? One reviewer questions the value of data from the Hydrolab water quality probes, notwithstanding that intragravel water quality and substrate composition after emergence should be valuable parameters in assessing spawning success. Neither temperature, surface dissolved oxygen nor conductivity is likely to influence incubation success very directly. Intragravel DO is being measured, and turbidity will be more effectively indexed by sediment composition of the gravel. How will the investigators know if spawning habitat is saturated? What if the numbers of spawning adults are good, but the numbers of out-migrating juveniles are low despite apparently good quality water and substrate? Are there contingency plans to investigate other possible limiting factors (e.g., an unsuspected contaminant) in the event their physical measurements do not explain the results of biological monitoring?

What is the probability of success for the spawning channel? The sample sizes of 10 males and 10 females for radio tracking is quite small, and one can anticipate that statistical precision of the proportions moving from one creek to another will be poor. Only the relative magnitude of movement will be known. Is not maintenance of flows over mainstem spawning areas critical, regardless of whether spawning habitat is saturated in Hamilton or Hardy Creeks, or when access to Hamilton Creek is limited by low flows?

No mention is made of a permanent mark for out-migrant juveniles that would permit a test of homing fidelity (though there is a hypothesis listed in Objectives that tags in chum salmon smolts will persist and be readable in returning adults). This discrepancy should be clarified.)

The proposal needs to better describe that it seeks to address major bottlenecks in the life history of chum. Reservoir operations should be documented as they affect water levels and sedimentation of the spawning channel.

ProjectID: 20140

Tualatin River National Wildlife Refuge Additions

U.S. Fish and Wildlife Service

Short Description: Secure, restore, and manage lands within the recently established Tualatin River National Wildlife Refuge to protect and enhance fish,

wildlife, threatened and endangered species, and waters in the Tualatin River watershed.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$1,250,000 / CBFWA Funding Recommendation = \$250,000

Recommendation:

Fund for one year. Subsequent funding contingent on an adequate monitoring and evaluation plan to ensure that their efforts are of greatest value to fish and wildlife in the Tualatin River Basin.

Comments:

The proposal lacks information describing restoration objectives and methods and in collecting baseline and monitoring data. No references are listed, and no data are provided about the relative value of this area compared to other lands that might be acquired and restored.

Specific questions and comments that should also be address are:

What information is provided in this proposal to establish that this is the most deserving refuge to enlarge/enhance? Are benefits expected to be proportional to the land acquired? The proposal references a recent GAP analysis assuring that this project ranks high on the list of sites evaluated, but the specific ranking is not provided. What assurance exists, then, to establish the merits of these proposed additions? This is the second consecutive year that reviewers have found the description of monitoring lacking.

ProjectID: 9205900

Amazon Basin/Eugene Wetlands Phase Two

The Nature Conservancy

Short Description: Restore and enhance wildlife habitat at the Willow Creek Natural Area. Acquire an additional 134 acres contiguous with the 330 acres currently managed under the BPA Wildlife Mitigation Program. Prepare a new Habitat Evaluation for the new acquisitions.

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$2,376,020 / CBFWA Funding Recommendation = \$50,000

Recommendation:

Fund

Comments:

A well-written proposal in behalf of somewhat expensive conservation easements. The authors do not make a wholly convincing case that this is the most cost-effective way to protect fish and wildlife in the area. Monitoring provisions are well presented.

Specific comments and questions that should also be addressed are:

The proposal includes an apparent long-term (perpetual?) commitment to control non-native vegetation, a questionable element at best. The proposal does not adequately

describe why this is a priority area. What is the efficacy of attempting to control non-native species (e.g., active vs. passive restoration)?

Cowlitz

ProjectID: 20122

Test guidance flows and strobe lights at a SBC to increase smolt FCE & FGE

Washington Department of Fish and Wildlife

Short Description: Test guidance flow and strobe lights at the Cowlitz Falls Dam to increase FCE and FGE. Radio telemetry, fyke and flume nets and facility collection will be used to measure the success of guidance flow and strobe lights.

ISRP Recommendation - Fund in Part / CBFWA Tier 3 / ISRP Comparison with CBFWA: Disagree-fund in part

Sponsor Funding Request = \$295,300 / CBFWA Funding Recommendation = Recommendation:

Fund in part with emphasis on testing guidance flow.

Comments:

Authors offer an excellent presentation of a project with a good experimental design and monitoring provisions, and with encouraging prospects for success. They demonstrate a very good understanding of downstream fish passage issues, and do a good job relating this work to regional programs and needs.

The proposal provides an adequate explanation of the guidance flow portion of the experiment, but neglects to relate where strobe lights would be placed and how they would be employed in the experimental phase. Neither does it indicate how environmental conditions are to be monitored.

Specific questions and comments that should also be addressed are:

Would strobe lights always be used in conjunction with the attraction flows, or would the two techniques be tested separately? The proposal alludes to the prospect that additional funding may be obtained from Tacoma Public Utilities. If so, how much, at what time, and how would this money be spent?

Lewis

ProjectID: 20109

Cedar Creek Natural Production and Watershed Monitoring Project

Washington Department of Fish and Wildlife

Short Description: Estimate juvenile production and adult escapement for coho, cutthroat, steelhead, chinook, and possibly lamprey to support local watershed restoration projects and recovery of fish populations listed under the Endangered Species Act.

ISRP Recommendation - Fund / CBFWA Tier 3 / ISRP Comparison with CBFWA: Disagree-fund; strongly recommend

Sponsor Funding Request = \$225,899 / CBFWA Funding Recommendation =

Recommendation:

Fund, OK for a multi-year review cycle with high priority.

Comments:

This is an excellent proposal, comprehensive and persuasive, and a logical candidate for long-term funding. Cedar Creek appears to be a high-priority site for a monitoring project, given existing activities by other agencies. Further, monitoring would be facilitated by the opportunity to trap upstream-migrating adults in this basin. There exists evidence of good cooperation with local landowners and significant financial support from sources other than BPA. The listed objectives and methods for their achievement appear quite valid. Biological information sought in this proposal should be very valuable.

Specific comments and questions that should also be addressed are:

To meet Objective No. 5, would production of juveniles (supplemented) by, say, the modified Hankin and Reeves survey procedures (rather than by use of traps at three locations) yield more information on distribution and habitat? A question arises with regard to the goal of monitoring fish stocks in Cedar Creek for the purpose of evaluating fish response to a large number of recently enacted measures to improve habitat, reduce harvest rates and foster genetic diversity. The monitoring should be effective in assessing the sum total of these actions, but it will be difficult to use the results in an adaptive management context, one that will enable them “to apply success(ful) strategies and not repeat our failures in other subbasins.” With so many restoration activities in progress in the basin, there are no specific mechanisms proposed to examine the effects of individual actions. The ISRP was impressed with this proposal and strongly recommends it for funding.

ProjectID: 20121

Evaluate Habitat Use And Population Dynamics Of Lampreys In Cedar Creek

U.S. Fish and Wildlife Service

Short Description: With emphasis on Pacific lampreys, identify and quantitatively evaluate populations of lampreys and their habitats in a stream below Bonneville Dam

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$138,790 / CBFWA Funding Recommendation = \$134,790

Recommendation:

Fund (high priority)

Comments:

The proposal is well presented and relates directly to recommended research and to several on-going or proposed projects. References appear thorough, and methods are generally well expressed. The proposal notes the vital significance of Pacific lampreys and their tendency to be under-estimated, but does not adequately discuss other lamprey studies either in progress or proposed. Disappointingly, the proposal pledges only that this effort will complement those other activities. The question may then logically be

raised: Is this proposal critical to the success of the other projects, or vice-versa? Perhaps there should be an umbrella proposal explaining the interrelationships of the lamprey proposals.

Specific questions and comments that should also be addressed are:

The extent to which ammocoetes can be identified is a major uncertainty. The problem is clearly stated, but its importance may not be fully acknowledged. If only 61 per cent of ammocoetes were correctly classified in the most recent study, Objective No. 2 will be compromised where multiple species are present. Objective No. 5 could become a very substantial job in itself. If prevailing dogma is that lampreys do not home, and if downstream migrants are to be given CWT, it seems that a more broad-scale effort should be proposed to recover tags in returning adults.

Regarding Objective No. 1, the estimation of adult lamprey abundance assumes that marked lampreys do not behave differently from unmarked lampreys, marked fish will try to re-ascend the falls, and marked lampreys suffer no greater mortality than unmarked lampreys. How will these important assumptions be tested so that unbiased results are assured? Regarding Objective No. 2, will habitats not used by ammocoetes also be characterized, so that the project develops information about habitat preferences?

The total commitment of the principal investigators to this and other projects (ongoing and proposed) should be evaluated to determine if they are over-committed.

Willamette

ProjectID: 20550

Willamette Basin Mitigation Program Umbrella

Oregon Department of Fish and Wildlife

Short Description: Umbrella proposal for Willamette Basin Mitigation Activities

ISRP Recommendation - na / CBFWA Tier na / ISRP Comparison with CBFWA:

Umbrella Proposal

Sponsor Funding Request = \$ / CBFWA Funding Recommendation =

Recommendation:

NA - Umbrella Proposal

Comments:

The presentation falls short of binding the proposals in a coherent package. Authors cite loss of rearing habitat for chinook in the floodplain and for steelhead due to timber production. They should quantify the miles (or percentage) of affected streams and address how the listed projects will help to compensate for bottlenecks such as flood control reservoirs, etc. The proposal concentrates on law enforcement issues, including comments on loss of revenue to Oregon Department of Fish and Wildlife from license sales, federal funds and unbudgeted cost-of-living wage increases. Which if any of the listed proposals are intended to support law enforcement or other salaries? Should BPA pay for these expenses? Why is Project No. 8816000 included in the umbrella proposal? No background information is provided to relate hatchery oxygen supplementation to the other projects.

ProjectID: 8816000

Willamette Hatchery Oxygen Supplementation

Oregon Department of Fish and Wildlife

Short Description: Determines survival of chinook salmon reared at various densities under conditions of oxygen supplementation.

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA:

Agree-fund

Sponsor Funding Request = \$33,310 / CBFWA Funding Recommendation = \$33,310

Recommendation:

Fund with high priority a final year of funding to complete analysis and writing of final reports on this long-term study.

Comments:

The proposal itself is of poor quality, but funding is endorsed to conclude 10 years of work to evaluate the long-term effects of this large hatchery experiment. Resulting data should be of considerable value. The project has produced an impressive number (11) of refereed publications.

Specific comments and questions that should also be addressed are:

Some aspects of the proposal are not well explained (e.g., the specific coded-wire tag analytical technique; qualifications of the sponsors; and the continuing relevance of this work to NPPC goals). Where is support coming from for the Principal Investigator?

What are the unique qualifications of the consultant to help complete this project? No vitae were provided. What role has he/she played in the project? Should the consultant's work be submitted for bid?

ProjectID: 9405300

Bull Trout Assessment - Willamette/Mckenzie

Oregon Department of Fish and Wildlife

Short Description: Monitor distribution, population trends, and habitat use of bull trout populations in the Upper Willamette Basin. Continue to implement the Rehabilitation Plan for bull trout in Middle Fork Willamette (ODFW 1997).

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$59,240 / CBFWA Funding Recommendation = \$59,240
Recommendation:

Fund with high priority. The project is also recommended for a multi-year review cycle through 2002.

Comments:

This is regarded as a good research proposal on a significant issue affecting bull trout over the species' entire range, existing and potential, in both river basins. The proposed budget is considered modest and well justified. One can gauge that not until critical data are assembled will it be possible to assess where, how and whether bull trout populations can be successfully restored. It would be helpful if this and other proposals would outline how this goal is to be achieved. Here, however, there is no information indicating coordination with other BPA-supported work on the species.

Specific questions and comments that should also be addressed are:

Notwithstanding objectives that are generally clearly stated and relevant to goals, an exception is Objective No. 5. It proposes to determine the effectiveness of restrictive angling regulations in maintaining bull trout populations. The methods listed in the proposal do not seem capable of making that determination. Over all, the methods are incorporated by reference ("same methods as in previous years"), so it is difficult to judge their adequacy.

The authors do not address potential adverse side effects involved in transplanting bull trout. The risk assessment referenced in Objective 4 (page 16) may apply, but further explanation is desired. Some of the null hypotheses (pages 15-16) are not as clearly stated as one might wish. They will require some re-working in order to match particular field activities with tests of hypotheses. For example, the null hypothesis for Objective No. 5 (Page 16) should be expressed in a form more directly able to be tested. Several null hypotheses perhaps should be generated for this objective.

Reintroduction into the Middle Fork of the Willamette should be closely monitored. That seems to be the authors' intent, but there is minimal discussion of the numbers proposed for this action, which began in February 1998. This issue should be given greater discussion, both in terms of genetic and ecological criteria. The proposal apparently does not discuss potential adverse effects of transplanting bull trout in the Middle Fork of the Willamette River. Do other species of fish reside in that reach, and might they be impacted?

ProjectID: 9107800

Burlington Bottoms Wildlife Mitigation Project

Oregon Department of Fish and Wildlife

Short Description: The project would mitigate for hydro-electric facilities through protecting, maintaining, and enhancing wildlife habitat and related Habitat Units, benefitting target and other wildlife including Threatened, Endangered, and At-Risk species.

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$116,822 / CBFWA Funding Recommendation = \$116,822

Recommendation:

Fund with high priority. The project is also recommended for a multi-year review cycle with comprehensive review for results in 5 years.

Comments:

A very good proposal, well justified and with clear relationships to other projects in the Willamette Basin. The reviewers particularly commend its inclusion of wildlife surveys to document and monitor site use by fish and wildlife, and for plant surveys that demonstrate that exotics diminish and native plant species flourish when water levels more closely resemble historic levels. The budget is adequately justified, notably the need for an increase over previous estimates, in order to construct a water-control structure.

Specific questions and comments that should also be addressed are:

A small table of data would be helpful in the section relating to plant surveys and the effects of maintaining historic water levels. Similarly, a table of data showing results of wildlife surveys also would be a welcome contribution. Discussion of the value of the site to fish species could be expanded and improved. Reviewers express some concern that removal of non-native species may require annual funding in perpetuity.

Project history is well presented, but little is said about the results of surveys. Were expectations for habitat modifications met? Were there errors that led to 'adaptive management,' and if so, what modifications resulted to be applied to future work? The design of the proposed water control structure is unclear. Might it pose an obstruction to fish passage? What are the five wildlife species that are the targets of enhancement activities discussed in Objective No. 2 (Page 17)? How will water levels and flow be monitored under Objective No. 3a (Page 18), and with what frequency?

ProjectID: 9206800

Implement Willamette Basin Mitigation Program

Oregon Department of Fish and Wildlife

Short Description: Mitigate for hydro-electric facilities through enhancement, easement development, acquisition, restoration, and management of wetlands and other target habitat types and their respective species in the Willamette basin in Oregon. The Willamette Basin Mit

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$230,000 / CBFWA Funding Recommendation = \$230,000

Recommendation:

Fund with high priority. The project is also recommended for two years funding with comprehensive review before expenditure of \$3 million in FY2002.

Comments:

This is a complex and comprehensive program whose objectives and tasks are clearly spelled out. The proposal offers a commendable background review and rationale that is in many ways better than the umbrella proposal. It is very well integrated with other activities in the Willamette Basin. To its credit, the proposal incorporates recent thinking in restoration ecology, including conservation biology and landscape ecology, with some emphasis on passive restoration.

Specific questions and comments that should also be addressed are:

The proposed budget (of \$3 million) represents a somewhat abrupt increase from previous funding levels. So large and complex is this proposal that it does not provide adequate detail on site-specific efforts. It does, however, offer explicit discussion of project compliance with principles listed in FWP Section 11.2D.1. Despite reference to the umbrella project in several places, Section 8 is significantly longer than the 10-page limit. One presumes that this is due in part to the five separate projects contained under this heading (although given that combination, one questions why Burlington Bottoms is treated separately).

Wildlife habitat work appears to have been thoroughly reviewed and prioritized under the OWC Coalition, with OTAP and GAP analysis. It would be of value to know what previous investments have been made in survey and an development for each of the project areas, with some critical assessment of progress in those efforts: in effect, an accounting of what has been accomplished and how near completion the work may be, perhaps in tabular form. Standard wildlife and fisheries monitoring surveys should be employed for establishment of baseline use and trend of use.

ProjectID: 9607000

McKenzie River Focus Watershed Coordination

McKenzie Watershed Council

Short Description: Continue administration of McKenzie Focus Watershed for coordinated planning, assessment, monitoring, and fish and wildlife enhancement projects

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$105,000 / CBFWA Funding Recommendation = \$105,000

Recommendation:

Fund with high priority. Also, this project is recommended for a multi-year review cycle with comprehensive review in three years.

Comments:

This is one of only a few proposals that directly address habitat criteria. There appears to be good cooperation and significant cost sharing by other groups and entities in the McKenzie River Basin. The proposal excels in relating the importance of linking habitats within a watershed as well as human organizations, and it generally provides a sound basis for evaluation. It is somewhat ominous, however, to consider the potential cost of funding this level of activity over the entire Columbia Basin. Among shortcomings, the proposal notes that the 20-member McKenzie Watershed Council is developing a long-term funding plan, but that defies evaluation in the absence of an accounting of what is involved, prospects for success, when it is to be implemented, etc.

Specific comments and questions that should also be addressed are:

Greater detail is invited about particular assessment methods to be used to prioritize areas for protection and restoration. It is difficult to establish from the proposal that efforts to plan, prioritize, coordinate, implement and educate will be properly focussed.

Numerous tasks are outlined in the Methods section (Pages 15-16), but little indication of the prospects of success. For example, one task (to monitor for water quality, quantity and macroinvertebrates) neglects to say where, at how many sites, how frequently, and using what techniques. Under Objective No. 4, authors should identify how many workshops, field visits and demonstration projects are contemplated.

A list of critically related projects (Section 3) is incomplete, and the text supplies little detail about those projects. Reviewers are left with an incomplete understanding of the relationship of the current proposal to others being submitted by the McKenzie Watershed Council to BPA. Among outreach efforts, the proposal offers a variety of workshops, field visits and demonstration projects, but details are sorely lacking: Where, when, how many, with what goals and objectives and what prospects for success?

ProjectID: 20088

Assess McKenzie Watershed Habitat And Prioritize Projects

McKenzie River Focus Watershed Council

Short Description: Assess McKenzie Watershed habitat by synthesizing recent watershed analyses and gathering data to address information gaps. The project will provide a basin-wide context for fish & wildlife habitat protection, restoration and monitoring strategies.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$183,000 / CBFWA Funding Recommendation = \$183,000

Recommendation:

Fund for one year. Subsequent funding contingent on the authors addressing the concerns in the ISRP's comments.

Comments:

The proposal is well described, although references to various contractors and other generic entities identified should be spelled out to indicate who shall be responsible for each of eight objectives. Reviewers are uncomfortable with the present anonymity of contractors and subcontractors whose qualifications and competency are not known. What criteria are to be used in selecting them? The proposal contains conflicting wording on the identification of limiting factors (see Page 12 of Project No. 960700 and Page 14 of Project No. 20088). What difference is there in the analyses reported in Project No. 960700 and the work to be done in this proposal?

ProjectID: 20089

Increase Instream Water Rights For Crabtree Creek

South Santiam Watershed Council

Short Description: Pipe 3 miles of the Lacombe Irrigation Ditch in order to conserve 76% of the water and allocate 75% of conserved water to instream Crabtree Creek uses

ISRP Recommendation - DNF / CBFWA Tier 3 / ISRP Comparison with CBFWA: Agree-DNF

Sponsor Funding Request = \$1,402,816 / CBFWA Funding Recommendation =

Recommendation:

Do not fund. The proposal is technically inadequate.

Comments:

This may well be a deserving proposal, but too few data are provided to evaluate. It seeks \$1.4 million for uncertain benefits. The proposal does not offer adequate supporting figures representing present or projected anadromous fish populations or spawning numbers. Oregon Department of Fish and Wildlife data, with projections of expected benefits, would be helpful. But the proposal offers little evidence to assure success.

Specific comments and questions that should also be addressed are:

It is unclear how many miles of stream or area would be affected by the increased water supply, and the proposal offers insufficient guarantee that this measure of water would remain in the stream. Other obstacles may exist to successful production of native steelhead, but there is little evidence to establish or disprove that possibility. How will project managers measure the success of the project, if implemented? What physical facilities exist, if any, at the intake to the irrigation ditch? What impact do they have, if

any, on fish passage? What volume of water 'lost' from the ditch returns to the stream through groundwater flow? Does the Watershed Assessment Plan identify any other significant problems in the affected reach of Crabtree Creek? Is piping the most cost-effective solution? Would ditch-lining achieve the same result, at less cost?

ProjectID: 20128

Riparian Restoration And Enhancement Planning For Multnomah Channel

Metropolitan Service District of Oregon

Short Description: Re-establish native riparian vegetation on public lands on Multnomah Channel bottomlands; assess vegetation and wildlife habitat on 309 acres of estuarine wetlands; develop enhancement strategy for freshwater marsh; develop watershed protection plan.

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$65,000 / CBFWA Funding Recommendation = \$30,000
Recommendation:

Fund. OK for a multi-year review cycle.

Comments:

The proposal is reasonably well documented and offers good cost- and facility-sharing provisions. The budget particularly seems focussed on developing topographic and hydrological mapping.

Specific comments and questions that should also be addressed are:

The proposal seems more in the form of a general narrative than an organized response to specific requirements. While technical and scientific background are complete, the rationale and significance to the region are not well described, nor is its relationship to other projects in the basin. Monitoring seems appropriate, but additional detail about techniques is invited.

Sandy

ProjectID: 9902500

Lower Columbia River Wetlands Restoration And Evaluation Program

USDA Forest Service, Columbia River Gorge National Scenic Area

Short Description: Restore 200 acres of wetland and associated upland habitat at Sandy River Delta. Restoration would be part of a series of large scale Lower Columbia River wetlands GIS mapping, habitat restoration, and evaluation and monitoring experiments.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$125,000 / CBFWA Funding Recommendation = \$125,000

Recommendation:

Fund for one year with low priority. Subsequent funding contingent on addressing ISRP comments.

Comments:

The recommendation is mild, given that the proposal lacks clarity and focus and is derelict in several important areas. Habitat restoration in any location is assumed to encourage increased populations of target wildlife species, but there is virtually no quantified data offered here about the 200 acre site under consideration. The proposal contains insufficient details about any integration or coordination with other projects in or near the Sandy River Delta.

Specific comments and questions that should also be addressed are:

The proposal should describe existing wildlife conditions in and adjacent to the 200 acres involved here: How badly depressed are those conditions, and how and by what degree is this proposal intended to improve? Assuming that local topography, differences in hydrology and other factors will affect the wetlands' response to three different management options listed in the proposal (Task No. 2(k) (Page 14)), what measurements are intended to compare and assess those responses? How, where, how frequently and on what basis will that evaluative procedure be conducted? Greater detail should be offered under Objective No. 3 (Pages 14-15) to explain survey techniques and measurements in order to assess the efficacy of proposed monitoring. The proposal includes a number of activities not proposed for BPA funding and not related to the Sandy River Delta. This discussion appears extraneous to the proposal, and might well have been omitted entirely or moved to the Project History section (8d).

The amount of overhead intended to multiple subcontractors should be closely examined. Layering of subcontracts (BPA to the U. S. Forest Service to Ducks Unlimited to the University of Idaho) is questionable.

ProjectID: 9902600

Sandy River Delta Riparian Reforestation

USDA Forest Service, Columbia River Gorge National Scenic Area

Short Description: Restore 250 acres of rare Columbia River floodplain 'gallery' riparian forest (dense, unbroken stands of black cottonwood, willow, ash). Reforestation will improve habitat for riparian forest species.

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$24,000 / CBFWA Funding Recommendation = \$24,000
Recommendation:

Fund. Recommend for a multi-year review cycle with high priority. The project should be reviewed in 5 years for results.

Comments:

This is an attractive project, modestly priced and with good potential. Apparently the watershed analysis plan and environmental impact statement are complete. BPA support would represent only about one-fourth of the total cost, with support from a diversity of other entities and volunteer labor for planting. It appears to make good use of experimentation and adaptation to achieve the best planting/maintenance techniques. Baseline monitoring of neotropical bird migrants is available for four prior years, providing a good standard for evaluation of the effectiveness of the plantings in providing bird habitat. Two years' experience with a pilot project and small-scale plantings have identified some problems and led to solutions that should improve survival of planted stock in the future.

Specific comments and questions that should also be addressed are:

In the absence of periodic flood disturbance, what is the likelihood that the area intended for reforestation will sustain itself? HEP monitoring appears adequate, although photo documentation of changes in the riparian community could be expanded and improved.

ProjectID: 20125

Restore Riparian And Anadromous Fish Habitat In The Upper Sandy Basin
Mt. Hood National Forest, Zigzag Ranger District

Short Description: This project aims to recruit and guide private land owners in developing/implementing in-stream and riparian restoration projects benefiting Lower Columbia River salmonid species and wildlife populations and complementing work on National Forest Lands.

ISRP Recommendation - DNF / CBFWA Tier 3 / ISRP Comparison with CBFWA: Agree-DNF

Sponsor Funding Request = \$97,750 / CBFWA Funding Recommendation =
Recommendation:

Do not fund. The proposal is technically inadequate.

Comments:

While its goals and objectives are commendable, this proposal is lacking in critical information. It lacks adequate assessment of fish populations of the wild runs that are cited. Monitoring to establish the presumed effectiveness of the plan is inadequate. The proposal properly notes the value of establishing and maintaining linkage between habitats in different areas of the watershed, but does not present adequate information about other approaches for protecting these stream reaches and other potential sources of funding.

Specific comments and questions that should also be addressed:

What assurance exists that private landowners are willing to protect their riparian areas over the long term? The proposal appears to have been hastily prepared with little care in editing.

Lower Mid-Columbia

Lower Mid-Columbia Mainstem and Multi-subbasin

ProjectID: 9900300

Evaluate Spawning Of Salmon Below The Four Lowermost Columbia River Dams

Washington Department of Fish and Wildlife, Oregon Department of Fish and Wildlife, U.S. Fish and Wildlife Service, Pacific Northwest National Laboratory
Short Description: Monitor, protect, and enhance the spawning populations of fall chinook and chum below Bonneville Dam. Develop a habitat profile of the spawning and rearing area. Search for evidence of fall chinook spawning below The Dalles, John Day and McNary dams.

ISRP Recommendation - Fund in Part / CBFWA Tier 1 / ISRP Comparison with CBFWA: Partially agree-fund in part

Sponsor Funding Request = \$385,788 / CBFWA Funding Recommendation = \$355,838

Recommendation:

Fund in part at a reduced level until feasibility of the juvenile work and possible application of the hydraulic work can be established. Review progress after the first year's work to determine next steps.

Comments:

This is an important project. It focuses on the possible existence of remnant or reestablished chinook populations that may have a potential for increased production. The proposal would benefit by inclusion of summaries of existing information on records of occurrence of chinook and chum salmon in the area, and of known spawning habitat requirements of the species (or references). The study plan seems overly ambitious. The focus ought to be on documenting that spawning occurs and an estimate of the numbers of adults involved. The value of the juvenile work is questionable. Questions that come to mind are: 1) How will juveniles produced by spawning in this area be distinguished from juveniles that have emigrated to the area from upstream? 2) What is the likelihood that enough such juveniles can be collected and marked to be able to expect enough recoveries to be able to estimate smolt to adult returns? (We suspect it is near zero.), 3) What management use would be served by the information on juveniles if it could be obtained?

It would be advisable to conduct a pilot study that would document the general magnitude of spawning that occurs, prior to attempting to relate spawning to a habitat profile. (In fact, general features of the habitat used for spawning might be immediately evident.) What if there is very little spawning that takes place? Thus the need for GIS/GPS is not evident.

ProjectID: 20023

Hanford Reach Steelhead Stock Investigation

Washington Department of Fish and Wildlife

Short Description: In 1998 a large number of concentrated spawning redds were observed in the Hanford Reach. These redds were observed during a time when only *O. mykiss* (Steelhead) typically spawn. This project intends to focus on species identification, stock delineation

ISRP Recommendation - Fund in Part / CBFWA Tier 1 / ISRP Comparison with CBFWA: Partially agree-fund in part

Sponsor Funding Request = \$98,820 / CBFWA Funding Recommendation = \$91,546

Recommendation:

Fund in part. Fund objectives 1-3, related to continuing observation of steelhead spawning (20%). Do not fund other activities until their feasibility is demonstrated.

Comments:

Further information on steelhead spawning in the mainstem would be useful. This proposal is based on an interesting set of observations, noting that these salmonid redds have appeared “intermittently” since 1962 at a time when they probably would be steelhead redds, though apparently no adults have been observed in association with them. Since they have occurred intermittently there is no assurance that the phenomenon will occur in FY 2000. While the phenomenon is interesting and of some importance from a management standpoint, the funding agency must recognize and the investigators must acknowledge, that there is a likelihood there will be no possibility of a full study in FY 2000.

A means needs to be found to be able to proceed with the search for redds and to incorporate methods of establishing that they are or are not the result of steelhead activity, once redds are observed. This is a challenge for the investigators. In any case, if the interest is in identifying the origin of a stock, it will be necessary to describe the methods in much more detail than is provided. For example, a question immediately comes to mind about whether the necessary sample size can be collected.

ProjectID: 9701400

Evaluation of Juvenile Fall Chinook Stranding on The Hanford Reach

Washington Department of Fish and Wildlife

Short Description: Evaluate effect of diel water fluctuations resulting from power peaking activities at Priest Rapids Dam on: 1) rearing juvenile fall chinook, 2) resident fish, and 3) the benthic community inhabiting the Hanford Reach of the Columbia River. Assess direct

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$217,000 / CBFWA Funding Recommendation = \$217,000

Recommendation:

Fund (high priority). Fund for one year to complete the analysis and write the final report.

Comments:

This study is significant as a source of information on effects of hydropower operations on survival of juvenile salmon that might be applied to other locations in the region. However, the proposal was surprisingly vague. A question arose whether some of the investigators may be over-committed, considering other projects in which they are involved. We note that in response to this study, the hydrosystem has proposed an operating strategy in spring 1999 that is intended to minimize stranding of juveniles. Finalization of the report should provide further guidance for measures that might be taken.

ProjectID: 20100

Characterize Historic Channel Morphology Of The Columbia River: McNary Pool

Pacific Northwest National Laboratory

Short Description: Characterize pre-dam channel morphology of the Columbia River between the mouths of the Yakima and Walla Walla rivers, focusing on the physical features controlling the development of salmonid spawning and rearing habitat.

ISRP Recommendation - DNF / CBFWA Tier 2 / ISRP Comparison with CBFWA: Disagree-DNF

Sponsor Funding Request = \$119,751 / CBFWA Funding Recommendation = Recommendation:

Do not fund. Programmatic value, benefits to fish are not explained.

Comments:

The relationship of this project to the Fish and Wildlife Program is not clear; however, if drawdown of McNary Dam is ever considered, it would have application. While the idea is interesting, the application of the results is uncertain. There is no mention of potential benefits to fish. Linkages with other projects are not discussed. The proposal could have referenced documentation of spawning areas used by chinook salmon prior to inundation by McNary Dam, but even then, identification of “alluvial reaches” does not in itself establish that they were ever used by salmon, nor that they would be if they were again available. “Assumptions” are made that certain data sources exist. Investigators might readily have ascertained their availability, considering that Council staff is well informed on the subject, as are some others in the region. The adequacy of the model as proposed to be developed should be clarified, including identification of potential weaknesses and uncertainties that may or may not be addressed by this project.

ProjectID: 9406900

A Spawning Habitat Model To Aid Recovery Plans For Snake River Fall Chinook

Pacific Northwest National Laboratory

Short Description: Investigate ground-water/surface-water interactions influencing fall chinook salmon spawning site selection in the Hanford Reach, and predict spawning habitat of other mainstem spawning salmonids.

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$333,127 / CBFWA Funding Recommendation = \$149,907

Recommendation:

Fund (High priority)

Comments:

There appears to be overlap of this project with 9701400, which addresses steelhead spawning in the Hanford Reach. If availability of spawning habitat in the mainstem limits chinook numbers then this work could lead to a habitat capacity estimate for the system. Comparison with estimates of escapement to the reach may be a powerful management tool. We noticed no mention of water velocity in the list of 16 characteristics that might

affect spawning of chinook. The proposal should better describe relationships with other projects. The methods described seemed to go beyond what might be necessary.

ProjectID: 20076

Diet, Distribution & Life History of Neomysis Mercedis in John Day Pool

University of Montana

Short Description: Quantify key variables describing the ecology of the exotic mysid *Neomysis mercedis* that has recently invaded mainstem Columbia reservoirs. Determine the potential *N. mercedis* has for negatively affecting food web structure in the Columbia River.

ISRP Recommendation - Fund / CBFWA Tier 3 / ISRP Comparison with CBFWA:

Disagree-fund

Sponsor Funding Request = \$176,158 / CBFWA Funding Recommendation =
Recommendation:

Fund. Priority of the project depends on the level of *Neomysis mercedis* invasion basinwide, which is not explained, nor does the proposal describe a means of determining it.

Comments:

The focus of this proposal may be one of many key limiting factors on juvenile survival in the, however the proposal's relationship to the Fish and Wildlife Program is tenuous. The magnitude of the *Neomysis* problem within the John Day reservoir and among other reservoirs in the system will determine the importance and implications of this proposed work. Consequently, the proposers could have made this proposal better connected to the system as a whole.

The concept is interesting, and the investigator is highly qualified. We note that the study focuses on a question whether *Neomysis* has a potential for negatively affecting the food web structure in the Columbia River. We see no provision in the proposal for describing the overall food web. There have been several studies of plankton communities in mainstem reservoirs, such as Kootenay and Arrow Lakes (Lisa Thompson, Carl Walters, UBC), Lake Roosevelt and Rufus Woods Lake (above Wells Dam), which might have been cited. *Mysis relicta*, a related species that causes problems, has been reported there. Further, it would seem that food habit studies of juvenile salmon conducted by personnel at the Cook Laboratory of the USGS would be relevant in this connection, but these are not cited. Benthic sampling techniques described in the proposal are novel but not well justified and may be inappropriate (e.g. video camera observations on behavior).

ProjectID: 9901300

Ahtanum Creek Watershed Assessment

Yakama Indian Nation

Short Description: Conduct watershed assessment in the agricultural portion of the Ahtanum Creek watershed to complete assessment of the entire watershed, facilitate restoration of salmon and steelhead, and protect bull trout.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$240,191 / CBFWA Funding Recommendation = \$240,191

Recommendation:

Fund for one year. Subsequent funding contingent on addressing deficiencies noted by ISRP.

Comments:

This proposal would serve as a useful model for some others of this type that we reviewed (e.g. within the Umatilla Subbasin). An umbrella project on watershed rehabilitation is recommended to include both research and evaluation. Watershed assessment procedures are now standard, but development of an adequate monitoring and evaluation program on effectiveness of restoration measures is needed. Questions arise about expected benefits in smolt yield and adult return, and to what base level are they to be compared? Adult return goals for steelhead may be unrealistically high given current ocean conditions, but augmentation of freshwater survival may be one of few options available until conditions return to a more productive “regime”, if they do. The fish assessment procedure seems vague.

ProjectID: 9603201

Begin Implementation Of Year 1 Of The K Pool Master Plan Program

Yakama Indian Nation

Short Description: Develop a long-term program of artificial propagation of white sturgeon for supplementation purposes using the Hanford K Pools

ISRP Recommendation - Fund / CBFWA Tier 2 / ISRP Comparison with CBFWA: Agree

Sponsor Funding Request = \$428,073 / CBFWA Funding Recommendation = Recommendation:

Fund as an interim measure to maintain sturgeon alive while policy issues involved (as noted in the comments) are dealt with.

Comments:

What is the long-term plan for sturgeon in the mid-Columbia Reach? Populations do not appear to be self-sustaining. Is it the intent to continue this program indefinitely as a put and take fishery, or catch and release? While the proposal refers to the Council’s interest in finding a use for these ponds, the particular application with sturgeon should be examined by the Council. If this is a supplementation program, it should be so labeled. However, considering the long life cycle of sturgeon and high fishing rates usually experienced, such a program is not likely to be successful. Are the reasons for declines in sturgeon numbers being investigated? If isolation by dams leads to poor recruitment, what measures can be taken to improve the situation? How does this project fit into the picture?

ProjectID: 20115

Securing Wildlife Mitigation Sites - Oregon, Irrigon Wma Additions

Oregon Department of Fish and Wildlife

Short Description: Protect and enhance wetland, grassland, and shrub-steppe habitats adjacent to Irrigon Wildlife Management Area (WMA)

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$25,394 / CBFWA Funding Recommendation = \$25,394
Recommendation:

Fund for one year. Subsequent funding contingent on a better description of monitoring and restoration objectives and methods

Comments:

See Programmatic Comments on wildlife projects in general in Volume I of the ISRP's FY2000 Report. The monitoring program seems insufficient.

ProjectID: 20116

Securing Wildlife Mitigation Sites - Oregon, Horn Butte

Oregon Department of Fish and Wildlife

Short Description: Protect and enhance bunch grass and shrub-steppe habitats through alteration of land use practices and control of noxious weeds on acquired and eased lands. Develop cooperative management plan for adjacent BLM lands and ease other adjacent public lands.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$442,302 / CBFWA Funding Recommendation = \$42,302

Recommendation:

Fund for one year. Subsequent funding contingent on a better description of monitoring and restoration objectives and methods

Comments:

The discussion of costs is not adequate to judge whether steps have been taken to assure that a reasonable price was paid for the property. In fact, it is not clear whether the property was purchased in FY99, or negotiations are still underway. The question arises whether Phase II is needed or not. An explanation would help. (See Programmatic Comments.)

ProjectID: 20074

Eagle Lakes Ranch Acquisition And Restoration

U.S. Fish and Wildlife Service, Columbia National Wildlife Refuge

Short Description: Protect wetland and shrub steppe habitats from imminent development. Restore proper function to wetland and upland habitats.

ISRP Recommendation - Delay Funding / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-until corrected

Sponsor Funding Request = \$853,500 / CBFWA Funding Recommendation = \$287,134

Recommendation:

Delay funding until they provide more information on the priority of the project within the watershed, and a more complete explanation of negotiations over the price.

Comments:

The proposal needs more information on price and value of the property. Outyear costs are substantial. The proposal would benefit by a better description of monitoring and restoration objectives. The amount requested is an estimate, and the final amount is left open for the Fish and Wildlife Service to negotiate. The proposal gives a historic account of the ownership of the property without indicating what effects this history might have on the price of the land. One wonders, for example, what the effect on price might be in response to the owner's wish to retain part of the property in the face of bankruptcy. There is no discussion of this. (See Programmatic Comments in the ISRP's FY2000 Report, Volume I)

ProjectID: 20082

Rainwater Wildlife Area Operations & Maintenance

Confederated Tribes of the Umatilla Indian Reservation

Short Description: Protect, enhance, and mitigate wildlife habitat impacted by McNary and John Day hydroelectric projects. Rainwater Wildlife Area developed as a Columbia Basin Wildlife Mitigation Project under Washington Wildlife Mitigation Agreement (BPA et al., 1993).

ISRP Recommendation - Delay Funding / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-until corrected

Sponsor Funding Request = \$274,966 / CBFWA Funding Recommendation = \$274,966

Recommendation:

Delay funding until they provide more information on the priority of the project within the watershed, and more details on monitoring and evaluation.

Comments:

From the description, the property seems to be in poor condition, requiring expensive rehabilitation. How was the priority for acquisition set? The monitoring and evaluation program does not appear to be well planned. (See Programmatic Comments in the ISRP's FY2000 Report, Volume I)

ProjectID: 9009200

Wanaket Wildlife Mitigation Project Operations & Maintenance

Confederated Tribes of the Umatilla Indian Reservation

Short Description: Protect, enhance, and mitigate for wildlife habitats impacted by the McNary Hydroelectric Project. Achieve NPPC wildlife mitigation objectives in a cost efficient manner with in-kind habitats located on-site where original habitat inundation occurred.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$200,000 / CBFWA Funding Recommendation = \$200,000

Recommendation:

Fund for one year. Subsequent funding contingent on a better description of monitoring and restoration objectives and methods.

Comments:

The proposal needs a better description of monitoring and restoration objectives and methods. Operation and maintenance costs are about \$250,000 per year into the future, which seems like a large commitment.

ProjectID: 20035

Water Right Acquisition Program (Multi-Year Fy 2000-2002)

Oregon Water Trust

Short Description: Acquire existing consumptive water rights from willing sellers and transfer to legally protected instream water rights to increase streamflows and restore salmonid habitat and water quality. Work with agencies to monitor and protect instream rights.

**ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA:
Agree-fund**

**Sponsor Funding Request = \$130,000 / CBFWA Funding Recommendation =
\$130,000**

Recommendation:

Fund (high priority among new proposals). Review next year to determine if there are actual increases in streamflow.

Comments:

The rationale for this project was clearly defined and well justified. The proposal appears well worth funding, although it would have been helpful to project the percent increases in flow for each stream in which acquisitions have been targeted. The objectives were clearly laid out, but it was not clear how sure some of the negotiations for purchases were at this time. This uncertainty lessens the feasibility of this fairly unique proposal.

Effectiveness is questionable if enforcement is not good, and the feasibility of that was not addressed. Also unclear were the permanency of these arrangements and, therefore the long-term impact of any expenditure. The monitoring component of the project is not adequately described. The proposal suggests that other agencies may provide biological monitoring, but the reviewers would like to see a monitoring program in place.

Specifically, it was not clear how one person with a flow meter would be able to adequately monitor the amount of water at all the acquired sites, even with the assistance of state agencies, tribes, etc. It seems possible, but the particulars were not given in the proposal. Coordination with other agencies is identified as important, but the commitment of those agencies is unclear. Activities in the past in this area apparently moved forward without BPA funding; it was not entirely clear why BPA funding should now be directed here. Also unclear is what is currently being done (if anything), and by whom. Nevertheless, the proposal makes a convincing case for acquiring water rights in over-appropriated streams and long-term funding requirements appear minimal.

ProjectID: 20126

Habitat Enhancement Within Transmission Corridors

USDA Forest Service, Zigzag Ranger District, Mt. Hood National Forest

Short Description: Change vegetation management practices to retain more tree and shrub cover; increase short and long-term coarse woody debris levels and input; reduce terrestrial and riparian habitat impacts; improve connectivity between upland and riparian habitats.

**ISRP Recommendation - DNF / CBFWA Tier 3 / ISRP Comparison with CBFWA:
Agree-DNF**

Sponsor Funding Request = \$308,500 / CBFWA Funding Recommendation =

Recommendation:

Do not fund. The direct benefits to fish and wildlife are not clearly explained.

Comments:

The proposal failed to provide an adequate justification of managing the vegetation in power line corridors for the benefit of fish and wildlife. Specifically, what is the evidence that temperature increases or sediment inputs were significant factors for fish populations in streams traversed by the power lines? To what extent do these corridors restrict wildlife migration or dispersal? The worth of much of the proposed activities

seemed more short-range than many other proposals. How this proposal linked to others in the area was unclear and unstated. The proposed activities were laid out in a fair bit of detail, but appear very intrusive. A combination of passive management and active management where necessary would seem to be more appropriate.

They have a goal to be economically self-sufficient but the proposed activities do not appear to lead to this. It is far from clear that special forest products will eventually pay for all of these manipulations. How will Christmas tree farms provide connectivity over the long-term? These won't provide much cover except in the last year or 2 of the rotation. Other "special forest products" are discussed even less. Restoration of connectivity between late successional and old growth habitats is best measured by observing whether connections are provided for species of concern. This is unclear. It is unclear that thinning and pruning to enhance understory vegetation would maintain animal species diversity, or that that should be the goal in small areas. This depends on the species of concern and the scale at which diversity is a concern. They should better describe the actual location of the project. How much stream interaction is there? The biological monitoring was weak or non-existent. Some form of bioassessment could have been included in the monitoring program, not just stream temperature and forest stand surveys but also fish distribution and wildlife movements.

Much of the proposed activities seemed like the responsibility of other agencies, e.g., trimming vegetation around the power towers and much of the feasibility of the plan centered around one person being available and that was stated as unlikely. On page 24, they describe funding limits through the Forest Service that could jeopardize the implementation of the project.

The proposal's strengths include that it did a good job integrating fish and wildlife objectives and the emphasis on maintaining relatively natural vegetative communities in transmission corridors is admirable. Also admirable is the connection between the land management objectives of the Forest Service and the historical cultural objectives of the Warm Springs tribe.

ProjectID: 9405400

Bull Trout Genetics, Habitat Needs, L.H., Etc. In Central And N.E. Oregon

Oregon Department of Fish and Wildlife

Short Description: The goal of the project is to provide scientific information that will help develop a protection and recovery plan for bull trout in Oregon's proportion of the Columbia Basin.

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$424,608 / CBFWA Funding Recommendation = \$380,000

Recommendation:

Fund (high priority). OK for a multi-year review cycle through 2001 as proposed.

Comments:

The project is ongoing and productive with links to a number of other projects, even some outside of the basin. Continued success of this and some of the others depends upon continued activity. The problem is clearly identified and is significant; the project is providing key, critical data. It is likely the most comprehensive research project on bull trout ecology in Oregon. The information obtained will be useful across the region, as well as be a solid contribution to science in general. The proposal is excellent. The objectives are clearly explained with appropriate tasks designed to address them. The techniques to be used are state of the art, with the subcontractors being the most appropriate and best able to do the work.

The proposal had several shortcomings. They need to provide additional details concerning the metapopulation work. How will the results of the genetic analyses be linked to the findings on competition with bull trout or variation in migratory patterns? In other words, a little more detail was needed on how the different elements of the study fit together. It is good that they provide a clear listing of testable hypotheses. However, the hypotheses need to be tightened, i.e. temperature regime, hybridization, sampling regime in use versus available sites. Some of the hypotheses have obvious answers: "There is no significant difference between observed bull trout distribution and a random distribution." Surely by now we know something about the relationship between stream temperature and trout distribution. For each of the habitat-related objectives, the authors need to know something about where the fish do not spend time. If they are doing this it should be described in the proposal.

Under methods, the authors state they will focus on tasks from 1999-2001, yet objective 1.0 is done (isn't it?). The objectives under the Methods section aren't always parallel to proposal objectives (see 4.1, 5.2), and virtually no mention is made of the statistical tests to be used (other than "data will be analyzed . . ."). After five years, they need better reporting on results and more detailed description of methods. Despite some weaknesses, the proposal is certainly adequate and funding should be a very high priority.

ProjectID: 9802600

Document Native Trout Populations

Washington Trout

Short Description: Photo-Document native trout populations in Columbia Basin in WA state and collect tissue samples for DNA analysis.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 2 / ISRP Comparison with CBFWA: Agree

Sponsor Funding Request = \$60,701 / CBFWA Funding Recommendation = Recommendation:

Fund for one year (medium priority). Subsequent funding contingent on reporting of progress on results and further justification of the sampling design.

Comments:

This project is ongoing and productive. The objectives are clearly explained with appropriate tasks designed to address them. The techniques to be used are state of the art, with the subcontractors being the most appropriate and best able to do the work. Continued success in setting baseline standards depends upon continued activity. The type of work described in this proposal should be done, and it is unfortunate that more scientists are not involved in identifying genetically pure native trout populations. The information obtained will be useful across the region, as well as be a solid contribution to science in general. However, there is insufficient description of native trout assessment efforts in the state. How would the study be linked to WDFW's inland native fish identification and management program? Are efforts redundant?

The proposal could be strengthened in several ways. First, they should have explained how the study sites were identified, e.g., was a comprehensive survey of headwater streams undertaken in the subbasin of interest to establish these sites as candidate areas for remnant populations? All fish sampled in each stream seem to come from a very small region. Second, they should have explained why angling (the usual sampling method) will produce a representative sample of the population, e.g., why "fishable" stream reaches were assumed to contain the full range of genotypes and morphotypes present in the system. (This is not a traditional way of collecting samples.) Third, they should have gone into more detail on how the photographs will be used to establish morphological uniqueness, e.g., will body proportions or meristic features such as scale counts be possible from the photographs, or will the emphasis be mainly on coloration? Finally, they should have provided a justification for the sample size and indicated what age groups within the sample will be used for genetic testing. Some justification for this would be good, as would a justification for 20 samples. Some emphasis is placed on samples fitting a normal distribution based on length, but normal distributions, by themselves, don't tell us much without variance. They should test some of their sampling assumptions.

ProjectID: 9902400

Bull Trout Population Assessment in the Columbia River Gorge, WA

Washington Department of Fish and Wildlife

Short Description: Provide critical information to determine status of bull trout populations in the Wind, Little White Salmon, White Salmon, and Klickitat Subbasins and to develop and implement required management actions to ensure healthy populations are restored and main

ISRP Recommendation - DNF / CBFWA Tier 2 / ISRP Comparison with CBFWA: Disagree-DNF

Sponsor Funding Request = \$200,000 / CBFWA Funding Recommendation = Recommendation:

Do not fund. Proposal was technically inadequate and lacking in detail.

Comments:

This proposal is wholly lacking in detail, and hence cannot be said to be based on sound science principles. There is no mention of the status of their management plan. The proponents do not describe who would perform the genetic analysis and how. In addition, the proposal is lacking in methodological details. CBFWA notes that bull trout are not known to exist in two of the four watersheds, and that the area is managed for anadromous, not resident fish. For each of the five objectives in section 8.f. there is no description of methods and, at best, a reference to another report. This does not provide the information needed to properly evaluate the proposal. In addition, sections 8.b., 8.c., 8.d. (which was completely blank), 8.g., 8.h., section 9, and section 10 contained inadequate detail for evaluation. How will snorkeling, foot surveys, and electrofishing be combined and used for statistical purposes? This proposal and 9802600, both ongoing, have broad overlap of subject matter but seem totally oblivious of one another. In contrast, project 9405400 is an example of how research efforts should be coordinated. Even if they have been on the ground for two months or waiting for initial funding, at a minimum they should have explained this, listed personnel, and described relation to and coordination with other bull trout studies. This proposal appears to be last year's proposal.

ProjectID: 9801900

Wind River Watershed Restoration

Underwood Conservation District (contact agency), U.S. Forest Service, U.S. Geological Survey, and Washington Department of Fish and Wildlife

Short Description: Restore habitat within the Wind River subbasin to support healthy populations of wild steelhead and salmon.

ISRP Recommendation - Fund in Part / CBFWA Tier 1 / ISRP Comparison with CBFWA: Partially agree-fund in part

Sponsor Funding Request = \$1,146,412 / CBFWA Funding Recommendation = \$553,717

Recommendation:

Fund in part. Objectives 1, 3, and 5 should be supported, followed by objective 2. Objective 4 should follow completion of objective 3. Unless the prioritized plan (objective 3) is completed funding should not exceed FY99 funding level. Complete the watershed assessment before funding any implementation.

Comments:

This was a very broad project with many different aspects. It was good to see such a comprehensive attempt to deal with a number of watershed issues. The high school monitoring program can be a good approach. However, there was not a very clear explanation of the biological justification for both previously funded and proposed projects. The objectives were stated fairly clearly, but their relative importance and level of needed funding was not argued all that effectively. There was a heavy dose of

buzzwords and rhetoric, but actual substance was quite lean. It appeared that the Forest Service's watershed analysis was responsible for identifying the roads to be decommissioned and the section of stream for LWD placement, but what process was used to identify this year's projects? Were they identified by the Technical Advisory Committee, and if so, what was the process and the basis for assuming they would benefit steelhead? More details need to be provided on the make-up of and methods used by the Technical Advisory committee. What are their criteria for selecting and prioritizing projects?

Linkage to other projects was not at all clear. Progress to date, given two years of not insignificant funding, was very hard to visualize. The proposed budget is not justified. Prioritization of objectives would seem to be necessary. At several points in the proposal, the authors state the importance of full funding and the fact that only 39% and 52% of requested funding was received during the first 2 years of the project. It is unclear what is/was lost by this reduction in funding. Instead of using the appropriated monies to actually meet a reduced set of objectives under that new level of funding, the authors seem to have accomplished very little and have used the reduced funding as an excuse to explain lack of any progress. Much of the money in this budget goes for salaries and indirect costs, but the proposers do not specify what will happen (i.e., what project elements will be dropped) if the project is not fully funded.

Hood, Fifteenmile and Deschutes

ProjectID: 20513

Hood River / Fifteenmile Creek Umbrella

Oregon Department of Fish and Wildlife / Confederated Tribe of the Warm Springs Reservation

Short Description: Re-establish Hood River spring chinook salmon population and restore depressed Fifteenmile Creek winter steelhead and Hood River winter and summer steelhead populations by supplementation, using native fish stocks, and/or habitat restoration. Wildlife wi

ISRP Recommendation - na / CBFWA Tier na / ISRP Comparison with CBFWA: Umbrella Proposal

Sponsor Funding Request = \$ / CBFWA Funding Recommendation =

Recommendation:

NA - Umbrella Proposal

Comments:

This is an example of a complete, well-written description of an umbrella project. It lays things out clearly, concisely, and logically. It shows the importance of each of the components well. The only thing lacking, was a summary of the current escapement of salmon and steelhead.

ProjectID: 20519

Multi-Year Hood River Anadromous Fish Plan

Columbia Basin Fish & Wildlife Authority

Short Description:

**ISRP Recommendation - na / CBFWA Tier na / ISRP Comparison with CBFWA:
Umbrella Proposal**

Sponsor Funding Request = \$ / CBFWA Funding Recommendation =

Recommendation:

NA - Umbrella Proposal

Comments:

This umbrella was incomplete and does not provide adequate justification for the proposed work; almost no details are provided as to how objectives would be met.

ProjectID: 20026

Evaluate Status Of Coastal Cutthroat Trout Above Bonneville Dam

Oregon Department of Fish and Wildlife

Short Description: Survey Columbia River tributaries above Bonneville Dam to determine status of coastal cutthroat trout and to identify limiting factors and anthropogenic impacts.

ISRP Recommendation - DNF / CBFWA Tier 2 / ISRP Comparison with CBFWA: Disagree-DNF

Sponsor Funding Request = \$255,053 / CBFWA Funding Recommendation =
Recommendation:

Do not fund. Resubmit the proposal next year with a more comprehensive study plan that includes better sampling design and a justification for lethal sampling methods.

Comments:

Although this proposal was fairly well written, there are too many uncertainties and needed alterations to recommend it for funding. There is doubt concerning the nature of the work to be done. For example, it is stated that four populations of trout are to be genetically analyzed, then the results integrated with others, but how that is to be accomplished is not stated. While this project is linked to many others, it is unclear who will perform what functions, so linkages are murky. The uncertainty over methodology, including who is to do genetic analysis, is a clear weakness. A potential major problem is the proposal to sacrifice 50 individuals from each population for protein electrophoretic analyses and aging. Other techniques should be substituted. In fact, the authors state that one day they may employ some newer DNA based techniques. Reviewers believe that day should be now. The proponents also need to describe the sites where they will collect samples or at least the criteria they will use to select the sites. Four streams are an insufficient subset. For the above reasons, the reviewers judge that the proposal is not based on sound science principles.

The hypothesis proposed to be addressed is trivial. Why not also define status as 'abundance of cutthroat trout as a proportion of abundance the current habitat could support' (if exploitation is a possible problem). The 2 definitions of status should both be evaluated (rather than or). The reviewers are not convinced that questionnaires would provide abundant or useful information on genetic purity unless the surveys encompass those who have done the analyses.

Test 2a – How will relative abundance be determined? How will appearance, external diseases, and overall health be determined? Scales and tissues will be taken as a statistical sample for what?

Task 2b – Aren't all streams potentially accessible for sampling? Is there a potential for bias here? How do the authors intend to record qualitative and quantitative data on other fish species to establish the role of species interactions in limiting production.

Task 2c – Why do so many tissue samples need to be collected for allozyme electrophoresis? The sample size of 50 seems high.

ProjectID: 8805303

Hood River Production Program - M&E

Confederated Tribes of the Warm Springs Reservation of Oregon

Short Description: Implement, monitor, and evaluate actions outlined in the Hood River and Pelton Ladder Master Plans pertaining to smolt production, acclimation, and habitat. Coordinate Pelton Ladder production.

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$499,888 / CBFWA Funding Recommendation = \$499,888

Recommendation:

Fund (high priority). OK for multi-year funding; review on an annual basis for progress towards meeting objectives.

Comments:

Overall, this was a complete and well-detailed proposal. This program is integrally linked to a large number of other projects; together with 8805304, it serves as the backbone of the evaluation of the HRPP. Its continuation seems imperative for a successful program. The objectives and activities were clearly explained, even though this is a large and complex project. Past progress has been clearly demonstrated; feasibility and value of continuation seems very high. The progressive nature of this project warrants publication in peer-reviewed journals. They should have included more results of previous studies by ODFW and CTWSRO. They need better description of their sampling effort and sample size. Are the sample sizes large enough to test the hypotheses? Other areas the proposal could have better addressed include the methods under objective 1, e.g. how will the hypothesis be tested? What will be done under objectives 2 and 3? Under objective 9, statistical tests for comparing survival rates are not mentioned. When will this project be complete?

ProjectID: 8805304

Hood River Production Program - ODFW M&E

Oregon Department of Fish and Wildlife

Short Description: Monitor and evaluate actions taken to re-establish spring chinook salmon, and improve wild production of summer and winter steelhead, in the Hood River subbasin. Data will be used to develop, and refine, management objectives for the HRPP.

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$424,000 / CBFWA Funding Recommendation = \$424,000

Recommendation:

Fund (high priority). OK for multi-year funding; review on an annual basis for progress toward meeting objectives.

Comments:

This was a very well documented proposal. This program is integrally linked to a large number of other projects; together with 8805303, it serves as the backbone of the evaluation of the HRPP. Its continuation seems imperative for a successful program.

Objectives were clearly explained, even though this is a large and complex project. The proposal had several weaknesses. The abstract doesn't suggest any further work is necessary. They should have provided a more complete summary of findings to date, even though these may be preliminary. In most cases, the methods do not describe criteria by which hypotheses will be accepted or rejected. Statistical methods are not discussed in any hypotheses. Sample sizes are not mentioned. It is not clear (sub-obj. 3) how the authors will determine to what extent any changes would be due to hatchery supplementation. How will sub-objective 7 be done? Monitoring and evaluation is great, but criteria for evaluating success or failure is critical. Despite those weaknesses, the project's feasibility and value of continuation seems very high.

ProjectID: 8902900

Hood River Production Program-Pelton Ladder-Hatchery

Oregon Department of Fish and Wildlife

Short Description: Incubate and rear Hood River destined spring chinook at Round Butte Hatchery and Pelton Ladder. This is a project to re-establish a self-sustaining spring chinook salmon population in the Hood River subbasin.

Broodstock is collected at the Powerdale Fish

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$115,029 / CBFWA Funding Recommendation = \$115,029

Recommendation:

Fund (high priority). OK for multi-year funding; review on an annual basis for progress toward meeting objectives.

Comments:

This is integrally linked to a number of the other key ongoing projects. The fish production herein is critical to the HRPP as it stands defined. The original concerns of using non-native fish have been addressed - unless there are some difficulties that are not apparent from the narrative. Objectives are well delineated, although the technical details of methodology is not always so detailed. If procedures are not changing, the details may not be all that necessary. The methods could better line up with the objectives.

According to the proposal, the average smolt-to-adult return since 1993 has been ~0.2% (240 adults divided by 125,000 smolts). This is far below the 0.68% SAR target, which suggests that there may be opportunities to improve survival of hatchery smolts. Perhaps taking 50% of the returning adults for broodstock is a bit risky until the performance of hatchery releases can be demonstrably improved. There doesn't seem to be a mechanism in the set of proposals to say we are making a mistake here. The completion date is not mentioned. The budget is unclear (section 5). The requested budget from BPA is \$115,029, but under cost-sharing this is listed as \$148,645?

ProjectID: 9301900

Powerdale, Parkdale, and Oak Springs O&M

Oregon Department of Fish and Wildlife / Confederated Tribe of the Warm Springs Reservation

Short Description: Restore depressed populations of summer and winter steelhead and re-establish a self-sustaining spring chinook salmon population in the Hood River subbasin. Broodstock will be collected at the Powerdale Facility. Broodstock will be held and spawned at th

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$486,805 / CBFWA Funding Recommendation = \$486,805

Recommendation:

Fund (high priority). OK for multi-year funding; review on an annual basis for progress towards meeting objectives.

Comments:

The fish production herein is critical to the HRPP as it stands defined. The original concerns of using non-native fish have been addressed - unless there are some difficulties that are not apparent from the narrative. Objectives were well delineated, although the technical details of methodology were not always so detailed. This proposal went into a lot of detail about the rationale for the HRPP, but contained insufficient detail about performance to date, specifically, what aspects of operation and maintenance have changed since 1993 to improve performance? The description of the actual operation and maintenance procedures, and how they have improved, was inadequate. Budgetary strategies are well explained; however, no out-year costs are estimated. The completion date is not mentioned. Isn't the long-term goal of supplementation to phase these hatcheries out?

ProjectID: 9500700

Hood River Production Program - Pge: O&M

Portland General Electric

Short Description: This project reimburses PGE for those maintenance, operations, upgrades, and repairs of existing equipment and facilities at the Pelton Ladder Project needed to rear about 225,000 Spring chinook for release in the Hood and Deschutes Rivers.

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$50,010 / CBFWA Funding Recommendation = \$50,010

Recommendation:

Fund (high priority). OK for multi-year funding; review on an annual basis for progress towards meeting objectives.

Comments:

This is integrally linked to a number of the other key ongoing projects. The fish production herein is critical to the HRPP as it stands defined. It appears that the original concerns of using non-native fish have been addressed - unless there are some difficulties that are not apparent from the narrative. The objectives are listed only in tabular form and aren't really objectives, and measurable biological objectives aren't really biological objectives, either (they at least are not clearly stated). This proposal does not follow the standard write-up. No completion date is given, though the budget goes out through at least FY 2004. This proposal was not as well justified as the other HRPP proposals.

ProjectID: 9802100

Hood River Fish Habitat Project

Confederated Tribes of the Warm Springs Reservation of Oregon

Short Description: Implement habitat improvement actions that will support supplementation efforts within the Hood River subbasin as approved by the NPPC and supported by the BPA Environmental Impact Statement (EIS) for the Hood River Production Program (HRPP).

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$227,934 / CBFWA Funding Recommendation = \$227,934

Recommendation:

Fund (medium to high priority). OK for multi-year funding but review on an annual basis for progress towards meeting objectives, particularly the monitoring methods.

Comments:

This is a very complex project involving substantial funding from a large number of sources. It is linked to a number of other projects and the cost share looks good, as does the rationale. It is a fairly complete proposal, but it needs more detail in several critical areas: (1) how will the results of watershed assessment be used to identify habitat restoration priorities? (2) has passive restoration been considered as a viable alternative to bioengineering? (3) what is being done to reduce the source of damage to streambanks and riparian vegetation?, and (4) how will results of salmon and steelhead life history studies be used to identify potential habitat limitations to production (e.g., what is the biological basis for believing that creation of a spawning channel will significantly increase production)? In addition, they list four site-specific projects in the objectives but describe three of the four in the narrative. The weakest part of the proposal is the lack of a clear evaluation methodology for assessing long-term success of the alterations. How will success/failure be defined? For example, "spawning ground surveys will be completed annually to assess the upstream passage/spawning benefits." Will one more fish define success? How will variability be addressed? Time lags? At this cost, they need to assure that the work is providing measurable benefits to fish and wildlife. They need to better document the interaction of this project with 8805303 the monitoring and evaluation component of the HFPP. The emphasis on improving the water diversion screens looks good.

ProjectID: 20004

White Salmon River Watershed Enhancement Project

White Salmon River Watershed Management Committee c/o Underwood Conservation District

Short Description: A comprehensive, five-year plan aimed to improve fish habitat, riparian and upslope watershed conditions, and land stewardship through direct restorative actions, cooperative work with stakeholders, and promoting education and citizen involvement.

ISRP Recommendation - DNF / CBFWA Tier 3 / ISRP Comparison with CBFWA: Agree-DNF

Sponsor Funding Request = \$205,527 / CBFWA Funding Recommendation = \$
Recommendation:

Do not fund. Location and priority of restoration activities are not adequately justified.

Comments:

The tasks were well laid out, but why these tasks in these locations at this time? They failed to make clear why the specific restoration projects were chosen (10 miles of decommissioned roads, 5 miles of riparian fencing, riparian forest thinning, etc.) as top priority items or what species would benefit from them. For example, under objective 2, why these 40 miles of stream? How were they chosen? Will all be well within the White Salmon River Watershed when these 40 miles are restored? The need for the actions in Objective 3 was not clear. Reducing roads can be good, but why these roads? Thinning of riparian vegetation was not well justified. How were the results of previous watershed assessments used in the project identification process? The priority of activities was not justified in terms of benefits to fish and wildlife. There was little evidence for linkage of this proposed project with others either new or ongoing. It was difficult to assess what the real product was going to be at the end and what benefit that product might have. After doing Objectives 2 & 3, how will success be evaluated? There was a great deal of rhetoric and use of buzzwords with little real substance. As a result, true goals were difficult to visualize. Strengths of the proposal include that the watershed advisory committee participation was great, as is the expanded public involvement and environmental education. This project would seem to have good cost-sharing.

ProjectID: 20520

Multi-Year Plan Fifteen Mile Anadromous Fish Plan

Columbia Basin Fish & Wildlife Authority

Short Description:

**ISRP Recommendation - na / CBFWA Tier na / ISRP Comparison with CBFWA:
Umbrella Proposal**

Sponsor Funding Request = \$ / CBFWA Funding Recommendation =
Recommendation:

NA - Umbrella Proposal

Comments:

This was a very incomplete umbrella project description. Sections 1, 2, 4, 5, 7, 8a, 8d, 8f, 8g, 8h, 9, and 10 are incomplete or lacking. The history of the project was inadequately described. The proposal provided little or no justification of why funding is warranted, either by describing the problem adequately or giving evidence that existing restoration measures are working. The proposal also did not describe component studies in sufficient detail.

ProjectID: 9304001

Fifteenmile Creek Wild Steelhead Smolt Production

Oregon Department of Fish and Wildlife

Short Description: Estimate subbasin smolt production for the wild population of winter steelhead in Fifteenmile Creek and collect information on selected life history and biological characteristics of downstream migrant fishes endemic to Fifteenmile Creek.

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$27,180 / CBFWA Funding Recommendation = \$27,180

Recommendation:

Fund (high priority). OK for multi-year funding; review on an annual basis for progress towards meeting objectives.

Comments:

This was a well written, reasonable proposal, which addressed an important issue in Fifteenmile Creek (tracking wild winter steelhead smolt production). The technical aspects seemed well covered. The relationship to the rest of the program was clear, as was the importance and value of this ongoing project. Information obtained from continued funding will be quite valuable. Objectives were clear and quite substantive. Activities planned would address them well and seem highly feasible. The narrative was very well written and showed how effort and personnel would be shared among agencies and projects. There was an honest assessment explaining how weather conditions could impair some components of the project, indicating a clear grasp of the real level of feasibility. However, it is not clear from the proposal why there is a reason that mean fork length, weight, and condition are being collected. What will be done differently if these numbers are high or low? What will be done with the results? How long must these data be collected? What is the programmatic value of the information gained? What will it tell us? No project completion date was given.

ProjectID: 9304000

Fifteenmile Creek Habitat Restoration Project (Request Multi-Year Funding)

Oregon Department of Fish and Wildlife

Short Description: Provide for continued operation and maintenance of all completed fish habitat treatment measures within the Fifteenmile basin. Provide continued education & demonstration of BMP to landowners throughout the basin.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$246,856 / CBFWA Funding Recommendation = \$246,856

Recommendation:

Fund for one year. Subsequent funding contingent on justification of the budget and correction of other shortcomings. Project's emphasis should be focused on identification of limiting factors and benefits to fish from past activities, less on the operation and maintenance.

Comments:

The first portions of this project, need, etc., are explained much better than most other proposals. The linkage to the overall program and to ongoing and previous projects was clear. Proposal strengths lie in the efforts of previous segments that constructed the various habitat improvement structures. However, the proposal still did not reference studies critical of the use of in-stream structures. (see Kauffman and Beschta, OSU; ISRP's FY99 report Appendix A, page 37). There needs to be an assessment of what are

the limiting factors and benefits to fish and wildlife. The proposal did not give a clear explanation of how a watershed assessment or comprehensive habitat survey within the subbasin was used to prioritize restoration efforts. The estimated improvement in smolt production was not adequately justified and seemed overly optimistic, especially because the assumed current smolt production potential is a lot more than the estimate given in proposal 9304001. The objective to identify limiting factors (objective 2) – monitor stream temperatures and provide photo documentation – is monitoring, not limiting factor analysis. The project has been going on since 1987. The authors will document the number of fish screens installed, habitat work done, etc. but what has this done for the fish?

Other weaknesses lie in the level of expense and the argument centered around whose responsibility is the maintenance of those same structures. The need for continuing the work is explained, but the budget is staggering for what the authors propose to do. The validity of the warning in boldface type as to the dire consequences of failing to fund this proposal is unclear. How much of the doomsday scenario is true?

ProjectID: 20521

Multi-Year Plan Deschutes Anadromous Fish Plan

Columbia Basin Fish & Wildlife Authority

Short Description:

ISRP Recommendation - na / CBFWA Tier na / ISRP Comparison with CBFWA:

Umbrella Proposal

Sponsor Funding Request = \$ / CBFWA Funding Recommendation =

Recommendation:

NA - Umbrella Proposal

Comments:

This was a very incomplete umbrella project description. Sections 1, 2, 4, 5, 7, 8a, 8d, 8f, 8g, 8h, 9, and 10 are incomplete or lacking. The history of the project was inadequately described. The proposal provided little or no justification of why funding is warranted, either by describing the problem adequately or giving evidence that existing restoration measures are working. The proposal also did not describe component studies in sufficient detail. As with most of these umbrella proposals, this is a thin, very weak proposal.

ProjectID: 20511

Deschutes River Umbrella Proposal

Oregon Department of Fish and Wildlife / Confederated Tribe of the Warm Springs Reservation

Short Description: Restore the depressed Deschutes River summer steelhead population by restoring and protecting stream habitat. Wildlife will be enhanced and wildlife habitat will be enhanced or acquired.

ISRP Recommendation - na / CBFWA Tier na / ISRP Comparison with CBFWA:

Umbrella Proposal

Sponsor Funding Request = \$ / CBFWA Funding Recommendation =

Recommendation:

NA - Umbrella Proposal

Comments:

This was one of the better umbrella proposals. This umbrella proposal lays out the various linkages fairly well, including the need for the program to include all of these activities. This is a very complex set of project interactions, and this proposal explains that well. It did not appear that the extensive restoration measures described in the proposal were preceded by a comprehensive habitat assessment that indicated which restoration projects should receive priority. Why, for example, did the Buck Hollow restoration begin at the headwaters and proceed downstream instead of building outward from a known spawning and rearing location? Under project history, the number of habitat structures created/produced/maintained is impressive, but what was the resulting impact on fish populations? How much have the steelhead and bull trout populations increased since project implementation. This lack of reporting of results suggests that monitoring efforts to date have been weak.

ProjectID: 20025

Deschutes River Stray Summer Steelhead Assessment

Oregon Department of Fish and Wildlife

Short Description: Review available information to determine the magnitude and cause of stray summer steelhead entering the Deschutes River, Oregon, and identify potential solutions.

ISRP Recommendation - DNF / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-DNF

Sponsor Funding Request = \$65,337 / CBFWA Funding Recommendation = \$65,337
Recommendation:

Do not fund. Proposal was technically inadequate due to lack of methodological detail, but reviewers encourage resubmission of a more complete proposal next year.

Comments:

If done properly, this proposal offers the potential to meet an important biological need. The objectives are fairly clear, but technical details of the activities are inadequate and pose a challenge in establishing the dimensions of the task and whether or not one year and this budget are sufficient. Reviewers are left to speculate, then, if the proposal is based on sound scientific principles and if the objectives are fully defined. The proponents should offer more information on analytical methods and in describing individual tasks under objectives 1 and 2. Most are simply one sentence declaratives, e.g., "Determine the...." without adequate explanation. Why this activity is not being done already by some agency is unclear. The need for BPA funding should be more clearly established.

ProjectID: 9404200

Trout Creek Habitat Restoration Project - Multi Year Funding Proposal

Oregon Department of Fish and Wildlife

Short Description: Operation and Maintenance of instream and riparian habitat improvement; Monitoring and Evaluation of Basin SSt smolt production and habitat recovery; coordination for basin long range plan; resulting in increased native salmonid and wildlife production.

**ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA:
Agree-fund**

**Sponsor Funding Request = \$380,697 / CBFWA Funding Recommendation =
\$358,847**

Recommendation:

Fund (high priority). OK for a multi-year review cycle; review again in FY2003 to verify demonstrated benefits to fish and wildlife.

Comments:

This is a well-defined and needed project. This proposal is especially good because they clearly describe that habitat assessments preceded implementation of restoration actions. The linkages with other projects is quite clear. The continuation of the planning process was well explained and effective. The objectives were clearly explained, and they fit within the obvious framework of the study based on past accomplishments. The past accomplishments were well explained and potentially substantial although there was not enough monitoring of past activities to make a convincing case that they had significantly improved conditions in Trout Creek. The proposal could better describe results to date such as pool area added, changes in riparian growth. The level of budgetary detail was excellent, but the budget seems very high for the work scheduled. The abstract is too long. Overall, this is an example of a well-written habitat restoration proposal.

ProjectID: 20070

Water Conservation And Stream Enhancement Project

Tumalo Irrigation District

Short Description: Enhance in-stream flows to improve fish and riparian habitat in the Middle Deschutes River and Tumalo Creek by constructing pipeline systems to replace existing leaky irrigation canals which also pose a higher public safety risk.

**ISRP Recommendation - DNF / CBFWA Tier 3 / ISRP Comparison with CBFWA:
Agree-DNF**

Sponsor Funding Request = \$18,382,000 / CBFWA Funding Recommendation =

Recommendation:

Do not fund

Comments:

This proposal does not adequately demonstrate that there will be benefits to fish and wildlife. It is unclear how this proposal fits into the overall program. The need for this project, as described, is that some water users object to the reallocation/purchase of water rights to in-stream uses. At \$18.3 million, this project is very expensive and the reviewers could not find the rationale for spending this much money (actually \$26.2 million total project cost) for saving 74 cfs of water versus, e.g., drilling wells and replacing river diversions with groundwater. Also, there was no attempt to estimate quantitatively the biological benefit of this water savings, which made it even more difficult to figure the cost-benefit ratio. How do we know that modernizing the water delivery system will actually reduce the volume of water appropriated from the river? The benefits of the proposal relative to the costs is not addressed, especially relative to the purchase of in-stream uses. Compared to the purchase of instream water rights in other proposals (e.g. 20035) this is not cost effective. Long-term maintenance is not addressed. The builders

have not yet been identified, but the engineers have been. There is no construction schedule or provision for delays.

ProjectID: 9802400

Monitor Watershed Conditions On The Warm Springs Reservation

The Confederated Tribes of the Warm Springs Reservation of Oregon
Short Description: Monitor stream conditions including macroinvertebrate populations and sediment; evaluate fish passage at culverts and stream crossings; and inventory fish habitat in streams on the Warm Springs Reservation.

ISRP Recommendation - Fund in Part / CBFWA Tier 1 / ISRP Comparison with CBFWA: Partially agree-fund in part

Sponsor Funding Request = \$160,917 / CBFWA Funding Recommendation = \$35,402

Recommendation:

Fund in part to cover culvert inventory and fish habitat survey; Do not fund macroinvertebrate and sediment components of the proposal until detailed methods are provided.

Comments:

There were some very worthwhile parts of this project, e.g., road crossing/culvert inventory and fish habitat inventories in the Warm Springs River. However, why various activities are planned is unclear. The macroinvertebrate and sediment sampling elements were weak. There were no apparent reference sites for the macroinvertebrate samples and there was no mention of biological metrics used to interpret invertebrate data (e.g., IBI, EPT, RIVPACS, etc.). The author used a lot of acronyms (e.g., EDT and CIA) without explaining them or convincing the reviewers that these techniques apply well here. The sediment study employed McNeil samplers, which suffer from inaccuracies compared with tri-tube freeze core methods. Also, there was no description of fractionation methods or expression of results, e.g., % fines, geometric mean diameter, median phi, etc. Section 3 was blank. The fact that the abstract and the proposal were worded in such a way that past activity was unclear was disconcerting and did not help clarify just how this relates to other activities. The greatest weakness of this proposal was the chronic lack of explaining how this proposed project would benefit fish and wildlife. They could spend a lot of money and get equivocal data that is not readily applicable. The reviewers had several other questions. Under objective 1, what will the authors compare these samples to (for determining least impacted streams)? Under objective 2, what will constitute a barrier? Under, objective 3, what criteria will be used to assess “quality” of spawning gravel? Under objective 4, what will the habitat data be compared to (to support fish populations)? Who are the subcontractors? Do they have criteria for selecting the subcontractors?

ProjectID: 9802800

Trout Creek Watershed Improvement Project Multi Year Funding Proposal

Jefferson County Soil & Water Conservation District

Short Description: Implementation of practices that will enhance smolt production and habitat recovery. A Coordinator to work with the watershed Council and local landowners to develop a Long Range Plan and strategies for implementation.

**ISRP Recommendation - DNF / CBFWA Tier 1 / ISRP Comparison with CBFWA:
Disagree-DNF**

**Sponsor Funding Request = \$483,795 / CBFWA Funding Recommendation =
\$231,126**

Recommendation:

Do not fund, technically inadequate. The authors still have not addressed shortcomings identified in FY99 ISRP review.

Comments:

There is insufficient detail to biologically justify this proposal. It does not appear that an adequate assessment has been performed to document the extent of the habitat problem these measures address, nor is there evidence that previous restoration efforts have produced significant improvements that directly benefit fish and wildlife. The proposed activities are not placed in the context of limiting factors in the watershed. Although references are given, they are general in nature; too few apply to Trout Creek. Methods are not described in sufficient detail. For example, the proposal calls for 300 acres of brush control: how will this occur, where, out of how many acres that “need” this treatment, etc.? The methods for Objective 3 are uncertain. How will these objectives be achieved? This proposal shares text with 9404200, but no coordination is described between the two. The abstract should be edited and abbreviated, and the budget better justified and described. The completion date is listed as August 2001, yet out year budget costs continue to increase through 2004.

ProjectID: 9900600

Restoration Of Riparian Habitat In Bakeoven / Deep Creeks

Wasco County Soil and Water Conservation District

Short Description: Implement riparian restoration plan developed during FY1999 planning. Initial efforts will emphasize riparian fencing, active revegetation, and off stream water developments. Initiate detailed monitoring at selected sites

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$80,000 / CBFWA Funding Recommendation = \$80,000

Recommendation:

Fund for one year. Subsequent funding contingent on completion of the detailed restoration plan identified in the proposal.

Comments:

The scope of this project fits well into the objectives of the program, is quite straightforward, and even small in scale. This proposal does a good job of getting landowner participation and the emphasis on passive restoration looks good. However, the restoration efforts have not been preceded by an adequate watershed assessment, nor is there sufficient indication of biological evaluation of project success, e.g., survival of replanted riparian vegetation. A comprehensive assessment should take place before further activities are undertaken. After which the sponsors should be able to answer how and why areas were chosen for fencing/restoration, what percentage of the entire stretch is affected, how will monitoring occur, and how will success be defined/quantified? Further, both the objectives and methods are vague and insufficiently described. Project coordination may necessarily be that way, but the other 2 objectives and methods need more detail. The completion date is listed as FY 2002; funding, albeit at lower levels, goes through 2004.

ProjectID: 20113

Securing Wildlife Mitigation Sites - Oregon, South Fork Crooked River

Oregon Department of Fish and Wildlife

Short Description: Maintain enhanced wetland, shrub-steppe, and riverine/riparian habitats on a 2,000-acre eased property on the South Fork of the Crooked River

ISRP Recommendation - Fund / CBFWA Tier 3 / ISRP Comparison with CBFWA: Disagree-fund

Sponsor Funding Request = \$13,877 / CBFWA Funding Recommendation =

Recommendation:

Fund (medium priority).

Comments:

This was a well-written proposal, especially the justification. The narrative is well laid out and convincing. The objectives and tasks seem reasonable. The cost benefit ratio of this project appears very high, and one that might set an example for other private landowners. This project, although small, is linked to a number of other ones. The proposal would have benefited from a little more effort to connect it to fisheries-related projects. They identify this as a highly ranked site for purchase of an easement, but do not describe why it is priority site. The methods are extremely general and how success or

failure will be assessed is unclear. For example, what are the success criteria in objective 2, task A? The techniques for monitoring are weakly explained. Despite these weaknesses, the proposers made a good case for funding.

John Day

ProjectID: 20522

Multi-Year John Day Anadromous Fish Plan

Columbia Basin Fish & Wildlife Authority

Short Description:

**ISRP Recommendation - na / CBFWA Tier na / ISRP Comparison with CBFWA:
Umbrella Proposal**

Sponsor Funding Request = \$ / CBFWA Funding Recommendation =

Recommendation:

NA - Umbrella Proposal

Comments:

Many of the criticisms of Project No. 20514 are appropriate here. Reviewers have numerous reservations concerning this umbrella proposal. Principal among them is its neglect in integrating projects one with the others. Scientists should be able to link cause and effect and determine which projects have succeeded, or are succeeding, in cost-effectively achieving biological objectives. Projects are scientifically evaluated for that purpose, and this proposal neglects to emphasize that type of framework. The presentation leads one to believe that the projects are only loosely associated. This umbrella proposal and the John Day River Umbrella submitted by the Oregon Department of Fish and Wildlife appear to be developed along agency lines rather than to integrate or explain interrelationships of proposals.

A comprehensive plan for monitoring of current and future use by anadromous and resident fish should be developed in cooperation with an expanded Oregon Department of Fish and Game Proposal No. 9801600. Most proposals for projects in the John Day Basin suffer from the lack of adequate baseline data and monitoring for effectiveness.

The proposal is unclear what proportion of the watershed these projects collectively address.

In addition, reviewers noted that the proposal neglects to include a task directed at measuring and sampling egg deposition rates, hatching rates, and survival, health/morbidity and population size of juveniles. Each of these life stages needs to be measured/sampled in order to evaluate cause-and-effect and the success or failure of projects. Indirect measures may not necessarily be an acceptable proxy for actual growth and survival.

The proposal invites greater clarity and specifics in advancing such comments as: "Monitoring results indicate that the fences are 98 percent effective in excluding livestock."

Eliminating introduction of hatchery fish can reduce disease and competition and eliminate mixed breeding. Hence Objective No. 3 might better read, "Improve health and survival of all life historic stages and improve genetic integrity and diversity.

ProjectID: 20514

John Day River Umbrella

Oregon Department of Fish and Wildlife

Short Description: Increase egg to adult survival of wild salmonids and decrease pre-spawning mortality of adult spring chinook. The research portion of this proposal is to aid in development of bull trout recovery strategies.

ISRP Recommendation - na / CBFWA Tier na / ISRP Comparison with CBFWA: Umbrella Proposal

Sponsor Funding Request = \$ / CBFWA Funding Recommendation =

Recommendation:

NA - Umbrella Proposal

Comments:

Many of the criticisms of Project No. 20522 are appropriate here. The proposal is too general and neglects to adequately identify and define the listed objectives. While it provides some useful background information, the proposal might better explain the interrelationships of an array of complex projects. Failing this, it is difficult to scientifically assess objectives and proposals. The presentation leads one to believe that the projects are only loosely associated. This umbrella proposal and the Multi-Year John Day Anadromous Fish Plan submitted by the Columbia Basin Fish & Wildlife Authority appear to be developed along agency lines rather than to integrate or explain relationships of proposals.

A comprehensive plan for monitoring of current and future use by anadromous and resident fish should be developed in an expansion of Proposal No. 9801600 and in cooperation with all other projects in the John Day Basin. Most proposals for projects in the John Day Basin suffer from the lack of adequate baseline data and monitoring for effectiveness.

The proposal makes no mention of success in spawning and security of egg deposits. Adults may return to their native streams, but may not successfully spawn and deposit eggs. Alternatively, gravel and flow conditions may be inadequate for holding/securing eggs in the redd before hatching. The proposal should include some discussion of these elements.

Objectives (particularly No. 1) seem overly broad, and include sub-objectives and associated strategies beyond project control (e.g., ocean escapement and ocean productivity). These should be narrowed to measurable goals that are clearly within the scope of the projects (e.g., increase numbers and densities of successful redds relative to number of adult chinook which enter the watershed each year).

The authors describe project results and note increased redd counts and increased neotropical bird counts, thus inferring causality. There should be greater documentation or science-based evidence, however.

ProjectID: 9306600

Oregon Fish Screening Project - Fy'00 Proposal

Oregon Department of Fish and Wildlife

Short Description: Install 25 new fish screening devices in critical chinook spawning and rearing areas in John Day basin. Construct and install one fish passage improvement (removable diversion structure/fish screen system/ladder) in Trout Creek (Deschutes River basin).

ISRP Recommendation - Delay Funding / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-until corrected

Sponsor Funding Request = \$641,621 / CBFWA Funding Recommendation = \$641,621

Recommendation:

Delay funding until the authors provide methods for determining priority of screen placement (or replacement) and monitoring of effectiveness. (medium priority)

Comments:

The proposal would be improved with greater discussion of the need for the project, expected benefits and plans for monitoring. Reviewers suggest that monitoring plans might be developed in cooperation with an expansion of the Proposal No. 9801600. Because this is a continuing effort, this project may not require annual review and may be appropriate for multi-year funding based on a more detailed and comprehensive proposal, with annual review of past work.

Specific comments and questions that should also be addressed are:

Objectives as presented here are somewhat too general. For example, they neglect to mention criteria/priorities to determine screen placement and do not adequately describe evaluation methods used to determine fish screen efficiency. Priority listing criteria relative to expected increases in survival should be described. Further, there is inadequate description of methodology used for the Trout Creek fishway project in this proposal.

More specific information is needed on juvenile mortality associated with outdated or poorly operating screens (relative to NMFS-designed screens that are properly maintained). With this information, the cost-effectiveness of the projects could be better assessed and prioritization schemes could be better evaluated. The proposal should expand in detail and offer some provisions for delays. It should also describe possible contingencies and a time-line.

Several statements in the proposal are unclear:

Proposed fish screens are in the vicinity of improved habitat projects. How near? And is this siting by design or otherwise?

There is no correlation cited between stream productivity and areas proposed for screening. The proposal should provide estimates of the numbers of fish lost to irrigation diversions in the area and compare those numbers to other basins, to indicate the relative importance of this effort. The benefits of previous screening are not reported. In the immediate past two years, many new screens were installed, but the proposal makes no mention of monitoring and evaluation of their performance. The proposal acknowledges water quality problems in these basins (sedimentation, flood events, low summer flows,

heavy irrigation use, high water temperatures, etc.), but neglects to report if they have been corrected. Failing this, the value of expensive diversion screens may be negated. The proposal notes the development of a priority listing of screens in need of replacement during 1997 and 1998, but includes a funding request for still another priority listing. The reviewers ask why another such listing is sought, and what specific sites are proposed for screen installation.

ProjectID: 9801600

Monitor Natural Escapement & Productivity Of John Day Basin Spring Chinook

Oregon Department of Fish and Wildlife

Short Description: Monitor and assess natural escapement and productivity of John Day River Basin spring chinook salmon. This project is in direct response to recommendations and needs of the PATH project.

ISRP Recommendation - Delay Funding / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-until corrected

Sponsor Funding Request = \$179,800 / CBFWA Funding Recommendation = \$159,800

Recommendation:

Delay funding until the survey procedures are expanded to include basin wide valid finite sampling procedures.

Comments:

The proposal is considered appropriate for multi-year funding, if expanded to include a basin-wide valid sampling procedure. One reviewer balked at funding for the current year because of the statement “Extensive surveys will cover all areas where spawning is believed to occur”, but endorsed multi-year funding if adequate sampling plans are developed to cover potential spawning areas. If spawning activity and smolt production can be successfully sampled, expansion of the project should afford better comprehension of production in various reaches and watersheds over time and space in the last major subbasin without dams.

One of the most vital aspects of the proposal is the PIT tagging element, which warrants expanded description to better determine representative smolt-to-adult survival for the entire watershed. Further, as written it is unclear that this project will provide optimum monitoring for effectiveness of other John Day projects. The proposal is short sighted and inadequate by seeking to survey only areas where spawning is believed to occur, as opposed to a basin-wide effort that would include monitoring of future increases as habitat is improved and escapement numbers increase. As habitat is improved in the John Day Basin, it is anticipated that the number of spawners will increase and migrate to presently unoccupied reaches.

Specific comments and questions that should also be addressed:

The sampling plan should include PIT-tagged adults returning to spawning grounds, given that PIT-tagged adults can avoid detection at mainstream dams and straying occurs. Should not plans be expanded to include valid sampling for spawning and production of steelhead?

More detail is required regarding sampling methodology and calculating smolt-to-adult survival rates that would be representative for the entire watershed. How frequently will high stream flows be expected to impact sampling and observations of smolts and adults? Are counts of adults adequate to estimate parent-to-progeny production? What about other factors that impact success including stress, egg quality, condition index, etc.

While this effort appears to collect and analyze aggregate data for the entire subbasin, many of the other projects apply to discrete reaches. There should be an attempt to coordinate this research with other projects and to provide useful disaggregated data to researchers on those projects. In Objective No. 1, why is the Imnaha River to be used for estimates of fish per redd?

ProjectID: 8402100

Protect And Enhance Anadromous Fish Habitat In The John Day Subbasin

Oregon Department of Fish and Wildlife

Short Description: Establish long term riparian, fish habitat and tributary passage improvement on private lands within the John Day Subbasin.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$426,046 / CBFWA Funding Recommendation = \$426,046

Recommendation:

Fund for one year with medium priority. Subsequent funding contingent on demonstration of biologically measurable results and future monitoring plans.

Comments:

The Council should determine if the continued installation and annual operation and maintenance are cost effective in terms of benefits to fish and wildlife. Reviewers invite a summary of results from some 15 years of stream fencing and other improvements to establish some level of success: In short, the proposal should be able to demonstrate biologically measurable results. They should use science-based quantitative data to demonstrate cost-effective gains toward the primary objective. The reviewers urge more complete measurements of quantity/quality of all life stages of fish species of concern, documented and analyzed, with appropriate comparisons with unfenced areas for statistical analysis. The costs of fencing and protecting riparian corridors, combined with the politics of fencing issues, require comprehensive science-based analysis, which then can be used to plot successful long-term, cost-effective strategies. Effectiveness of this project might be monitored in cooperation with an expanded survey in Project No. 9801600.

State and Federal Government should seek incentive systems that appropriately motivate and reward landowners who protect riparian habitat. This would afford an improved economic policy and complement other studies in the basin.

Specific comments and questions that should also be address are:

The author(s) offer no comparative cost data from other subbasins or methods in behalf of habitat protection. Measures of success for past restoration activities are expressed in non-biological terms (number of leases, acres of riparian vegetation fenced, stream miles, etc.). About 8.4 miles of a total of 542 miles of stream in the John Day Subbasin are proposed for enhancement/protection in this proposal, but too few data are offered to document how this 1.5 per cent of the total stream length was selected. Noting the claim that 8 projects have met the objective and 27 are said to be improving, quantitative criteria are absent. These would be useful to confirm that “objective” and appropriate criteria and standards were used in computing this record.

Objective No. 4 (monitoring and evaluating) relies on indirect measurement of larval and juvenile salmon productivity indexes, including redd counts. Because adult salmon returns are influenced by many factors other than stream improvement, this is not an adequate indicator unless accompanied by appropriate statistical analysis and comparisons to relevant controls (unimproved areas).

The proposal argues persuasively for 15-year leases and continued maintenance, but there is inadequate information on what may follow. Are there appropriate incentives for landowners to continue maintenance?

The proposal cites increased redd counts as evidence of program success in some streams, but credible science-based evidence is lacking. Increased redd counts could be due to other factors or projects, including random error.

ProjectID: 9303800

North Fork John Day Area Riparian Fencing

USDA Forest Service, Umatilla National Forest

Short Description: Protect riparian vegetation on 60 miles of streams in the North Fork John Day drainage that has recovered due to past project work. Primary project activities are resetting seasonal electric fence and construction of barbwire riparian exclosures.

ISRP Recommendation - Delay Funding / CBFWA Tier 2 / ISRP Comparison with CBFWA: Disagree-until corrected

Sponsor Funding Request = \$68,000 / CBFWA Funding Recommendation =

Recommendation:

Delay funding until evidence is provided that the project is succeeding and monitoring plans are developed. (low priority)

Comments:

This technically inadequate proposal does not reassure that the project (commencing in 1993) is succeeding, habitat is improving and the project is contributing to increased numbers of spawning anadromous fish. Given adequate supporting data, this project may be entitled to consideration for funding over a longer period of time but only with provisions for science-based assessments at suitable intervals, perhaps three to five years. Effectiveness of this project might be monitored in cooperation with an expanded survey in Project No. 9801600.

Specific comments and questions that should also be addressed are:

Streams or reaches of streams where fencing is to be installed are not specifically identified. Why does not the Forest Service itself fund the work? There is no explanation why these streams or reaches of streams are accorded high priority. Are all streams on Forest Service land fenced? The presumed relationship of this project with other Bonneville projects is not articulated. The claim that this project has “maximized the desired result per dollar spent” is not corroborated by science-based evidence.

No evidence is offered to support the claim that this project is “an example of adaptive management.” The proposal is silent on past efforts to measure salmonid populations in affected reaches of the stream(s) involved. No evidence of benefits to riparian vegetation or salmonids is provided from the presumed 98 percent efficiency claimed from installation of electric fencing.

ProjectID: 9605300

Upper Clear Creek Dredge Tailings Restoration

USDA Forest Service, Umatilla National Forest; Confederated Tribes of the Umatilla Indian Reservation

Short Description: Restore floodplain function to dredge minded reaches of the North Fork John Day River tributaries by rehabilitating areas with tailing piles that restrict river flow.

ISRP Recommendation - Delay Funding / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-until corrected

Sponsor Funding Request = \$85,000 / CBFWA Funding Recommendation = \$85,000

Recommendation:

Delay funding until potential adverse side effects of fine sediments and contaminated sediments, details on monitoring for use by salmon and steelhead, and details on their engineering plan are provided. (low priority)

Comments:

This technically inadequate proposal acknowledges earlier restoration work (1993-1997), but does not establish evidence of improved water quality or fish production as a result of those efforts. Conflicting estimates of dredged sediment to be redistributed are cited (30,000 cu. yd. on Page 3, 170,000 cu. yd. on Page 5), some of it to be used to fill depressions in the stream channel, but the possible consequences of this action are given little acknowledgement. Are the tailings contaminated? Will fine sediments be flushed out, to impact fish and aquatic invertebrates in previously restored downstream areas? What percentage of the tailings may be deposited in the river, and what percentage will be deposited on the stream bank or hauled offsite?

Specific comments and questions that should also be addressed are:

Among four objectives listed by the author(s), few details are offered to explain how restoration is to be conducted, for what specific purposes, and with what analysis. Further, there is inadequate presentation of the intended engineering and landscape design techniques to be employed. The project does not establish a relationship with other Bonneville activities. The proposal should be coordinated with Project No. 9703400. Monitoring plans for use by salmon and steelhead are inadequate. Effectiveness of this project might be monitored in cooperation with an expanded survey in Project No. 9801600.

ProjectID: 9703400

Monitor Fine Sediment And Sedimentation In John Day And Grande Ronde Rivers

Columbia River Inter-Tribal Fish Commission

Short Description: Monitor surface fine sediment and and overwinter sedimentation in cleaned gravel in spawning habits in the Grande Ronde and North Fork John Day rivers, analyze potential trends, investigate potential relationships in data, and relate to salmon survival.

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$32,145 / CBFWA Funding Recommendation = \$32,145

Recommendation:

Fund. OK for a multi-year review cycle with high priority. The project should be reviewed at the midpoint, FY2002, for reporting of results.

Comments:

This five-year study appears to relate to goals of other resource-related organizations in the Basin. Its expected results should be able to integrate readily with other John Day projects, although five years may be too little time to address all of the stated goals and objectives. It is unclear whether the number and variety of sites chosen for the study provide the range of potentially important variables in order to successfully model their relationships to sedimentation.

Specific comments and questions that should also be addressed are:

The proposal should identify how many sites and monitored reaches are intended for the study, and on what basis they were selected. One reviewer seeks assurance that ten gravel containers placed in simulated redds (at least two to be collected in mid-winter) are adequate to ensure detection of statistically significant sedimentation rates. Are the same simulated redds to be used during the five-year study period to assure comparability?

The proposal could benefit as well from an assessment of the relative importance of the sources of fine sediments encountered in the study sites. Lacking this information, it will be difficult to know how to further remedy conditions in the watershed if the five-year trend indicates that sedimentation is increasing. Similarly, if conditions improve, it will be difficult to know which remediation actions are responsible and should be amplified or applied elsewhere. In fairness, the author(s) note that this would require a substantially expanded effort and budget.

To determine the most cost-effective approach in measuring over-winter sedimentation, the author(s) plan to use regression analysis to model the relationship. There is only limited explanation, however, of which variables are to be evaluated in influencing the relationship (flow velocity, substrate type, gradient, river width and depth, etc.). The proposal would benefit from further detail on how salmon egg survival is to be estimated. The experimental design might be improved by including valid sampling procedures of two strata (heavily impacted sections of the two rivers and not heavily impacted) as opposed to the method proposed: That is, a comparison between a relatively unimpacted area of the John Day with heavily impacted sections of the John Day and Grande Ronde might provide important comparisons as well as the range of variables required for regression modeling.

ProjectID: 9901000

Mitigate Effects Of Runoff & Erosion On Salmonid Habitat In Pine Hollow

Pine Hollow Watershed Council, c/o Sherman Soil and Water Conservation District

Short Description: Will implement practices to reduce erosion and flooding, allowing natural recovery of riparian vegetation and channel type. Phase 2 will focus on replanting or protecting critical areas within the stream corridor.

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$33,937 / CBFWA Funding Recommendation = \$33,937
Recommendation:

Fund. OK for a multi-year review cycle with high priority. The project should be reviewed in 3 years for reporting of results.

Comments:

The involvement of watershed-related groups is a notable strength of this proposal, which has the potential to yield measurable results at modest cost. It also has the potential to integrate readily with other studies to measure sediments, smolts and juvenile fish in the John Day Basin.

While the proposal is well written, it could benefit from additional detail and explanation. Reviewers note that much of it is expressed in very general and qualitative terms that make the proposal somewhat difficult to evaluate. Success in this enterprise hinges in large part on the voluntary compliance of landowners, and it will be difficult to evaluate when and at what rate objectives can be achieved. Objectives are not well quantified and are very long-term in nature. It is unclear what incentive(s) may be necessary or appropriate for landowners to maintain their efforts for an extended period, and some evaluation will of course be required of their management practices. It is likewise unclear if the proposal includes built-in enforcement and monitoring costs.

Methodology is very qualitative, lacks adequate timelines and is not explicitly bound to objectives. The size and extent of fencing, range management and other elements are inadequately defined, and it is unclear how much of the watershed will be affected by the improvements. It is unclear how Phase 1 activities (cropland conservation measures and range management plans) are to be implemented over a sufficient time to demonstrate expected benefits, and what inducement(s), if any, will be provided to landowners to maintain their efforts on a prolonged basis. The authors do not indicate to what degree rearing and spawning habitat are limited compared with "historical" levels. Contemporary extremes in flow variability are not quantified relative to some target of an ideal level.

There is little evidence to support the claim that this comprehensive approach is the most cost effective. Further, cost effectiveness normally includes a time element to demonstrate benefits (improvements) on a temporal scale. The proposal offers inadequate plans to survey juvenile steelhead and salmon or to cooperate with other projects for monitoring of results. Redd counts may be deficient because they are too few, and adult populations are impacted by conditions beyond the watershed (fishing mortality, ocean

conditions, etc.). Effectiveness of this project might be monitored in cooperation with an expanded survey in Project No. 9801600. Because the goals are very broad and long-term, reviewers caution that this project may, and possibly will, exceed the term of planned BPA funding.

ProjectID: 20134

Acquire Oxbow Ranch -- Middle Fork John Day River

The Confederated Tribes of the Warm Springs Reservation of Oregon

Short Description: Acquire, protect and enhance 1,022 acres of riverine, riparian, meadow, and forest habitat on the Middle Fork John Day River.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$2,628,064 / CBFWA Funding Recommendation = \$1,300,000

Recommendation:

Fund for one year with medium priority. Subsequent funding contingent on adequacy of baseline data and monitoring plans.

Comments:

The proposal is well written and is accorded medium priority as a mitigation purchase, but it might well discuss what other options may be available to achieve the same benefits at lesser cost. The narrative describes the Middle Fork of the John Day River as a high priority mitigation site, but it should better identify the unique qualities of this 1,022-acre parcel.

Specific comments and questions that should also be addressed are:

Reviewers note the inadequate baseline data and plans to monitor vegetation parameters. An additional 5 cfs of additional instream water rights is referenced in the proposal, but it is unclear if that is significant to improve habitat for anadromous fish. The impacts of mining, grazing and logging are cited only in passing. Even if these considerations are to be left to future surveys, estimates would be helpful in establishing if restoration of this ranch parcel with habitat improvements is to become unduly expensive and long-term. A management plan apparently does not exist for this project, yet the authors estimate one per cent of the overall budget is committed to the plan's implementation. Future funding requirements and potential funding sources are not discussed.

ProjectID: 20015

Characterize And Assess The John Day Watershed Using Landsat Tm Imagery

Northwest Habitat Institute

Short Description: Characterizing and assessing landscapes within watersheds will allow for better planning of habitat enhancement and mitigation projects.

Also, linking landscapes with wildlife habitats enhances a system approach and strengthens the design of a project.

ISRP Recommendation - DNF / CBFWA Tier 3 / ISRP Comparison with CBFWA: Agree-DNF

Sponsor Funding Request = \$215,380 / CBFWA Funding Recommendation =

Recommendation:

Do not fund. The project has low programmatic value and insufficient ties to other projects.

Comments:

Though well written, the proposal fails to establish clear need, and there is inadequate linkage to other efforts to rehabilitate areas of the John Day Watershed. High-tech descriptive maps would be of value if coupled with a knowledge of processes that affect the landscape (e.g., erosion, over-grazing, rates of timber harvest etc.), but that provision is inadequate in this proposal.

Specific comments and questions that should also be addressed are:

The authors cite past work in this mapping technique, but their methods are relatively technical and would benefit from examples to assist in evaluation. There is insufficient detail to review field trial accuracy. The authors claim 70 per cent accuracy in depicting 1997 scenes, but it is unclear if that level of accuracy is meaningful or acceptable. The spatially explicit modeling work appears to be relatively experimental, with uncertain predictive ability. Should the authors submit the proposal in some future year, they may wish to expand it to include workshops to help acquaint heads of other BPA-funded projects with expected results and their application.

ProjectID: 20077

Inventory and Assessment of Irrigation Diversion Alternatives to Push-up Dams

U.S. Bureau of Reclamation, Lower Columbia River Area Office

Short Description: Perform an inventory and assessment of diversion structures in the John Day River basin in order to support Council Program measures 7.6 and 7.7, in particular, the re-establishment of fish habitat and passage lost to human activity associated with irrigation

ISRP Recommendation - DNF / CBFWA Tier 3 / ISRP Comparison with CBFWA: Agree-DNF

Sponsor Funding Request = \$187,500 / CBFWA Funding Recommendation =

Recommendation:

Do not fund. The reviewers noted that the authors should resubmit the proposal next year with better descriptions of methods, personnel, coordination with other projects and watershed councils.

Comments:

The proposal includes good background and rationale, but it is lacking in methodology. Further, its classification as Information Dissemination seems inappropriate. It may better be included under Implementation and Management, or possibly Research Criteria. It is surprising that this effort has not previously been engaged by the appropriate John Day Watershed Councils and the Bureau of Reclamation, and that the Bureau of Reclamation's potential sharing of costs is not addressed. The proposal should be coordinated with Proposal No. 9801700. Four clear objectives are stated, but discussion of methods and potential benefits should be expanded. In proposing to collect data on fish resources, for example, the proposal does not adequately establish what data are to be gathered, and how. The claim of the ability to design a diversion structure that meets the needs of the water-user while improving fish habitat invites elaboration.

Specific comments and questions that should also be addressed are:

Plans should be developed for continued monitoring of trends of use by juvenile and adult fish, particularly in those areas used for rearing anadromous fish. Effectiveness of this project might be monitored in cooperation with an expanded survey in Project No. 9801600. The proposal should further discuss its intent in behalf of better coordination (e.g., an outreach plan) with local groups and organizations, particularly in evaluating fish population and habitat factors at each diversion site, to help prioritize diversion alternatives.

The number(s) and type(s) of diversion dam structures in the John Day Basin are not identified. Quantitative values (cost savings versus biological benefits) of replacing the structures should be included if available. What biological benefits can be expected, and why might this proposal be more cost-effective than others? Given that habitat and biological benefits will vary and that costs will differ with various design alternatives, it is not clear how the "best" alternative is to be identified or how the authors expect to prioritize the benefits. How will data be collected on fish resources affected by existing push-up dams? Similarly, how will data be gathered on potential fish habitat, passage and survival gains associated with the new structures?

ProjectID: 20131

Enhance North Fork John Day River Subbasin Anadromous Fish Habitat

Confederated Tribes of the Umatilla Indian Reservation

Short Description: Increase production of indigenous wild stocks of spring chinook salmon and summer steelhead within the North Fork of the John Day River Subbasin.

ISRP Recommendation - Delay Funding / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-until corrected

Sponsor Funding Request = \$205,544 / CBFWA Funding Recommendation = \$205,544

Recommendation:

Delay funding until a monitoring plan for anadromous fish is presented.

Comments:

A well-written proposal, with excellent background and generous coordination with some BPA projects. The project should be coordinated with the North Fork Watershed Council. Monitoring plans are inadequate. Effectiveness of this project might be monitored in cooperation with an expanded survey in Project No. 9801600.

Specific comments and questions that should also be addressed are:

It seems apparent that selected habitat enhancement projects would increase the potential for fish production, but one wonders if there would be greater benefit in the Middle Fork, South Fork or mainstem John Day River. An estimate of the extent of improvement expected from salmon and steelhead runs would be helpful. One stated objective is to obtain conservation easements with three or four landowners, yet there is little assurance they can be secured. The authors claim that high tensile fencing is very cost-effective relative to barbed wire, but offers no quantitative evidence. The proposal notes that “a one-per-reach” macro-invertebrate sample will be taken, but does not state how many in total. Will this sampling be adequate? The proposal would be improved with discussion of redd counts, larval, juvenile, and smolt salmonid counts as part of the assessment procedures. Similarly, it should include plans to estimate changes in stream morphology/hydrology.

ProjectID: 9801700

Eliminate Gravel Push-Up Dams On Lower North Fork John Day

North Fork John Day Watershed Council

Short Description: Modify irrigation pumping stations by replacing above-ground suction screens with sub-surface collectors. Eliminate flow modification, migration impediments, and vegetation disruption and destruction inflicted during construction of gravel push-up dams.

ISRP Recommendation - Delay Funding / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-until corrected

Sponsor Funding Request = \$90,250 / CBFWA Funding Recommendation = \$90,250

Recommendation:

Delay funding until biological monitoring questions beyond water quality are addressed.

Comments:

This is potentially a good project with a strong chance of success, but the proposal should include greater detail and further describe the methods intended to accomplish seven broadly stated objectives. It appears to rely heavily on the voluntary efforts of many different entities, all without assurance of their participation.

Specific comments and questions that should also be addressed are:

The proposal should discuss alternatives to the construction of infiltration galleries. The project should be coordinated with Proposal No. 20077. The proposal does not indicate the level of cooperation between the North Fork John Day Watershed Council and the Bureau of Reclamation. Baseline data are needed on how many dams exist along the Lower North Fork, their locations or the identities or potential support of the affected landowners. The extent or significance of habitat damage as a consequence of spring washouts should also be documented. Reviewers suggest that baseline data collection and monitoring for trends in use by anadromous and resident fish be coordinated with an expanded survey in Project No. 9801600.

Additional detail would be welcome on methods by which push-up dams would be replaced and the effects monitored. Can expected benefits to water quality and fish stocks be quantified? How many miles of stream are expected to be improved? How much salmonid habitat will result from replacing the push-up dams? What is the scope and extent of water temperature problems associated with the push-up dams? Might replacement infiltration galleries produce any negative effects? How are water quality and turbidity to be monitored, how frequently, and where, above or below the pools? How many sites are to be monitored, and during what periods (e.g., during the irrigation season)? How many landowners are expected to participate?

ProjectID: 9801800

John Day Watershed Restoration

Confederated Tribes of the Warm Springs Reservation of Oregon

Short Description: Implement protection and restoration actions to improve water quality, water quantity, and fish habitat, and eliminate passage barriers for anadromous and resident fish.

ISRP Recommendation - Delay Funding / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-until corrected

Sponsor Funding Request = \$459,918 / CBFWA Funding Recommendation = \$424,575

Recommendation:

Delay funding until specific engineering plans and monitoring efforts are presented. (low priority)

Comments:

This proposal provides abundant background information on John Day Watershed projects, but should include details about proposals for future work. The methods section is particularly abbreviated and expressed in general terms. Quantification of past benefits should be spelled out more fully.

Specific comments and questions that should also be addressed are:

Projects requiring BPA funds for operation and maintenance on private lands should be reviewed carefully. Preference should be given to new projects that demonstrate a commitment from private landowners to operate and maintain capital improvements. Each of six objectives is accompanied by a sub-set of objectives, but the intended methodology is described only briefly. The proposal includes a good description of relationships to other projects. The introduction and rationale are well written and comprehensive, but some quantification should be made for improvements in survival or environmental parameters as a result of altered water diversions or improved habitats. There is some redundancy of information in the presentation.

Collection of baseline data should be included as well as monitoring for trends in use by anadromous and resident fish in areas improved by this project. The claim is made that there will be extensive monitoring at each site, including fish species distribution, but more details should be provided on how this is to be accomplished. Effectiveness of this project might be monitored in cooperation with an expanded survey in Project No. 9801600.

The cost-sharing budget includes BPA grant monies, and may not be calculated correctly. Mortality of summer steelhead related to sport fishing is assumed to be negligible. The statement appears questionable. More data of past monitoring for temperature and flow should be provided to demonstrate biological and cost-effectiveness of these diversion and water use strategies. The proposal would benefit from expanded documentation to assure cost-effectiveness of each diversion project. Without explanation, the proposed budget is doubled from Fiscal 1999. Why?

ProjectID: 20064

Upstream migration of Pacific lampreys in the John Day R: behavior, timing
U.S. Geological Survey, Biological Resources Division, Columbia River Research Laboratory

Short Description: Using radiotelemetry and tagged lampreys, we will determine timing and movement patterns of upstream migrating Pacific lampreys. Physical characteristics of overwintering and spawning habitats of Pacific lampreys in the John Day River Basin will be measured

ISRP Recommendation - Fund / CBFWA Tier 2 / ISRP Comparison with CBFWA: Disagree-fund

Sponsor Funding Request = \$298,700 / CBFWA Funding Recommendation =
Recommendation:

Fund

Comments:

The project is well justified, and the proposal is well written and succinct. The authors are commended for collaboration with other projects and for standardizing methods. Techniques for tracking lamprey and assessing their habitats seem reasonable. The project, if funded, appears to have a good chance of developing critically needed data about movements and habitat preferences of the Pacific lamprey.

Specific comments and questions that should also be addressed are:

Hypotheses to be tested are somewhat unclear. For example, does the expression “consistent temporally” mean between months or years or longer? Also, because two years of fieldwork are proposed, does this suggest only that the authors will determine if migration and spawning occur at about the same dates in two successive years? It is unclear how lampreys are to be randomly selected for tagging. The proposal could be improved by additional detail to explain temporal and spatial evaluation of lamprey migration and spawning. These factors may be impacted by water diversion devices and other anthropogenic impacts such as water flows, depths, stream temperature etc.

ProjectID: 9802200

Pine Creek Ranch Acquisition

The Confederated Tribes of the Warm Springs Reservation of Oregon
Short Description: Operations and Maintenance, Monitoring and Evaluation of Pine Creek Ranch.

ISRP Recommendation - Delay Funding / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-until corrected

Sponsor Funding Request = \$98,336 / CBFWA Funding Recommendation = \$94,600
Recommendation:

Delay funding until the sponsor provides evidence that the land is purchased. Review the proposal next year paying particular attention for adequacy of baseline fish and wildlife data, objectives, and methods.

Comments:

The proposal is lacking in detail. Operation and maintenance activities could be better described, and details of other elements -- fencing, type and extent of fencing and evaluation of the most sensitive areas should be expanded.

Specific comments and questions that should also be addressed are:

The authors should indicate what riparian improvements are anticipated, and over how large an area. Inadequate details are provided for improving riparian habitat or monitoring and assessment. Objectives and methodology should be address in greater specifics. Rather than to purchase the property outright, greater cost-effectiveness might result if the existing property owner were contracted to repair riparian habitat and adjust management practices.

Umatilla, Walla Walla, and Rock Creek

ProjectID: 20119

Rock Creek Watershed Assessment and Restoration Project

Yakama Indian Nation - Fisheries

Short Description: Conduct Watershed Analysis in Rock Creek drainage to determine conditions of the stream habitat, adjacent riparian stands, limiting factors to fish and wildlife production, and land management effect.

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$240,317 / CBFWA Funding Recommendation = \$156,206

Recommendation:

Fund. Review next year.

Comments:

Next year's proposal should address the following questions: What economies of scale could be achieved if these efforts were undertaken in a set of watersheds of this size? A description of the watershed that would give the reviewers an idea of its size should be supplied. Where is this work likely to lead? What is the biological priority of the watershed?

ProjectID: 9506001

Protect & Enhance Wildlife Habitats In The Squaw Creek Watershed.

Confederated Tribes of the Umatilla Indian Reservation

Short Description: This project proposes operations and maintenance for protecting and enhancing habitats for selected HEP target species in the Squaw Creek Watershed. It is a continuation of a 1998 watershed project that provides dual benefits for fish and wildlife.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$200,589 / CBFWA Funding Recommendation = \$200,589

Recommendation:

Fund for one year. Subsequent funding contingent on a better description of monitoring and restoration methods and the criteria used for evaluation.

Comments:

It was encouraging to note that fish were included with wildlife in the proposal. In the case of wildlife habitat enhancement projects, it would be helpful to know how the particular project fits into a “big picture”. What is the overall plan, and what portion of the plan is to be accomplished by this project? The proposal includes a considerable amount of continuing operation and maintenance costs.

ProjectID: 20523

Multi-Year Plan Umatilla Subbasin Anadromous Fish Plan

Columbia Basin Fish & Wildlife Authority

Short Description:

ISRP Recommendation - na / CBFWA Tier na / ISRP Comparison with CBFWA: Umbrella Proposal

Sponsor Funding Request = \$ / CBFWA Funding Recommendation =

Recommendation:

NA - Umbrella Proposal

Comments:

A subbasin programmatic review is needed prior to multi-year funding of individual projects. The measure of success currently specified for individual projects does not provide a means of true evaluation. “Success” needs to be specified in the context of the overall program. For example, the individual projects under this umbrella ought to include the following 12 projects: 1) (20523) Multi-Year Plan Umatilla Subbasin Anadromous Fish Plan; 2) (20516) Umatilla Subbasin Umbrella; 3) (8903500) Umatilla Hatchery Operation and Maintenance; 4) (9000500) Umatilla Hatchery Monitoring and Evaluation; 5) (8343500) Operate and Maintain Umatilla Hatchery Satellite Facilities; 6) (8805302) Plan, Site, Design and Construct Neoh Hatchery – Umatilla/Walla Walla Component.; 7) (83443600) Umatilla Passage Facilities O & M; 8) (8902700) Power Repay Umatilla Basin Project; 9) (8902401) Evaluate Juvenile Salmonid Outmigration and Survival in the Lower Umatilla; 10) (9000501) Umatilla River Basin Natural Production Monitoring and Evaluation; 11) (8710001) Enhance Umatilla River Basin Anadromous Fish Habitat; 12) (8710002) Protect and Enhance Anadromous Fish Habitat in the Umatilla River Subbasin.

The relationships among many of these projects are described in the Multi-Year Plan Umatilla Subbasin Anadromous Fish Plan. The Umatilla Subbasin Umbrella specifies that the goals of the overall program are returns of 4,000 naturally produced and 5,670 hatchery produced steelhead, 1,000 naturally produced and 10,000 hatchery produced spring chinook, 11,000 naturally produced and 10,000 hatchery produced fall chinook, and annual return of 6,000 coho. The Umbrella identifies six strategies to be used in attaining the objectives. The 12 projects are associated with the strategies.

The problem with the current system of evaluation is that each project has its own independent measure of performance, and that measure, while it may be inferred to have a relationship to the specified subbasin objectives, has no explicit relationship. For example, the Power Repay Project (8902700) reports accomplishments in terms of dollars spent to pump water from the Columbia River, purportedly to replace water that might have been withdrawn for irrigation at Three Mile Dam. But there is no report of the amount of water pumped, nor more particularly of the amount of water that was made available in the Umatilla River as a result of this supposed substitution. Similarly, taken in the context of Project 8802200, the “trap and haul” operation in which adult salmon and steelhead are trapped at Three Mile Dam and hauled either upstream or to the hatchery for use as brood stock, it seems insufficient to report on the numbers of fish trapped and hauled, when the question is whether or not it is still necessary to haul the fish upstream – if there is water in the river. That brings up the question of why no fish passage facilities are provided at McKay Dam at river mile 6. And if there are no fish passage facilities at McKay Dam why bother to put water in the river below Three Mile Dam? And if there is not water in the river, then why pay to pump water from the Columbia River into the irrigation canal? The reviewers are left attempting to develop a reasonable scenario out of acts that do not seem to fit together as they should.

The entire subbasin effort should be included in one project, with one person in charge who is responsible for annual evaluation of the measures included under the strategies being employed (now separate projects with their own independent lives)/ Progress toward attaining the subbasin objectives should be evaluated in terms of the overall objectives, rather than narrow project accomplishments, e.g. number of smolts released by the hatchery. The person in charge should make decisions about whether or not it is productive to continue a particular approach now being followed as part of a particular strategy. That person could also evaluate prospects of success in achieving the objectives given external limiting factors. For example, a key limiting factor in restoration efforts might be the high (80%) fishing rate on fall chinook in the ocean and mainstem Columbia that was reported. There is no mention of regulation of fisheries among the six strategies identified for restoration.

ProjectID: 20516

Umatilla Subbasin Umbrella

Oregon Department of Fish and Wildlife

Short Description: The purpose of this document is to provide an overview of all FWP funded projects within the basin. The biological goal and objectives for the

basin will be linked to specific strategies and tasks to be completed by the proposed new and on-going projects

ISRP Recommendation - na / CBFWA Tier na / ISRP Comparison with CBFWA:

Umbrella Proposal

Sponsor Funding Request = \$ / CBFWA Funding Recommendation =

Recommendation:

NA - Umbrella Proposal

Comments:

This “umbrella” proposal does a good job of providing the context for some of the proposals in the Umatilla Basin. It spells out the objectives in terms of numbers of fish, and identifies strategies for achieving the objectives. The Umatilla Plan was presented to the NPPC in 1989 as an experimental approach. Research, monitoring and evaluation were incorporated to address the uncertainties in the experiment. References to monitoring and evaluation reports are cited.

Umbrella proposals should include a project designed to integrate the information from the projects it covers and evaluate effectiveness of the unified plan and its objectives. This evaluation would be in terms of numbers of fish before and after implementation of the plan.

No explanation is given for not proceeding with an option being explored to pump Columbia River water into McKay reservoir as a possible measure to provide for fish passage in the river below and as a means of temperature control. Presumably, it would be quite expensive.

ProjectID: 8903500

Umatilla Hatchery Operation and Maintenance

Oregon Department of Fish and Wildlife

Short Description: Restore Umatilla River Chinook and steelhead fisheries and populations through release of subyearling and yearling smolts produced at Umatilla Hatchery

ISRP Recommendation - Delay Funding / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-until corrected

Sponsor Funding Request = \$895,346 / CBFWA Funding Recommendation = \$850,000

Recommendation:

Delay funding until the proposal addresses the specific deficiencies noted in the comments. The project should be included in an Independent Programmatic Review of the Umatilla and Walla Walla hatchery programs.

Comments:

The proposal notes that the hatchery water supply is only one-third the volume that formed the basis for planning and design of the facility and its associated projects. The experience of the reviewers is that overestimating available water supplies is not an uncommon occurrence. It reflects undue haste in proceeding with construction without necessary “ground truth” information. Water supplies should be assured prior to construction of any hatchery or satellite facilities.

The entire Umatilla Program should be reviewed by Council to see whether it is time to shift its emphasis. The hatchery water supply is warmer than anticipated. Survival of hatchery fish is one-tenth of that expected. There appears to be more weight in fish released than returning. This could result as a natural process in response to a focus on measurement of success in terms of smolts released, rather than adult contributions.

ProjectID: 9000500

Umatilla Hatchery Monitoring And Evaluation

Oregon Department of Fish and Wildlife

Short Description: Evaluate juvenile rearing, marking, tagging, survival, stock life history, fish health, mass marking, straying, sport fishing and catch contribution for salmon and steelhead reared in oxygen supplemented and standard raceways at Umatilla Hatchery.

ISRP Recommendation - Fund in Part / CBFWA Tier 1 / ISRP Comparison with CBFWA: Partially agree-fund in part

Sponsor Funding Request = \$721,588 / CBFWA Funding Recommendation = \$650,000

Recommendation:

Fund in part at reduced level. Incorporate internal hatchery monitoring into routine operations. Establish termination dates for some procedures

Comments:

Enough information now exists to make a decision about oxygen supplementation (Michigan raceways) without any further studies. There comes a time to make a decision. The monitoring and evaluation procedures described within the hatchery are routine, and ought to be a part of normal operations (e.g. monitor hatching success, growth, fish health, DO and temperature). The hatchery personnel should be collecting the information and a regionally coordinated body should be evaluating the data. The number of full time personnel requested in this proposal seems high. The Michigan raceway study takes one-third of the project budget and offers to produce little or no additional information that would affect a decision. Straying rates of these hatchery fish ought to be discussed. It is not clear that “acclimation” is accomplishing its objective; perhaps alternatives should be explored or acclimation omitted. The level of proposed field monitoring seems high. Standardized procedures should be established that are coordinated regionwide. The analysis needs to be tied to a decision analysis framework that addresses both naturally produced and hatchery fish.

ProjectID: 8343500

Operate And Maintain Umatilla Hatchery Satellite Facilities

Confederated Tribes of the Umatilla Indian Reservation

Short Description: Acclimate juvenile salmon and steelhead prior to release in the Umatilla Basin. Collect, hold and spawn broodstock and provide eggs to ODFW and other hatcheries for incubation, rearing and later release into the Umatilla Basin.

ISRP Recommendation - Delay Funding / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-until corrected

Sponsor Funding Request = \$822,161 / CBFWA Funding Recommendation = \$775,000

Recommendation:

Delay funding until the proposal addresses specific deficiencies noted in the comments. This project should be included in an Independent Programmatic Review of the Umatilla and Walla Walla hatchery programs.

Comments:

A number of objectives listed here are also covered in other proposals, which raises the question of whether there is duplication of effort or a lack of coordination. The budget is not satisfactorily justified. The number of full time personnel seems high. No explanation is given for increased out-year costs. In fact, the proposal says it expects costs to reach a maximum of \$661,000 in FY 1999, but shows \$1,486,000 in FY 2000, increasing to \$1,675,000 in FY 2004. It is not clear, given the high rate of straying of returning adults, that the acclimation facilities are accomplishing their presumed objective of encouraging return of adults to upstream areas. Is there any evidence that fish held in acclimation ponds are any more likely to return to the area as adults than fish released directly from the trucks?

ProjectID: 8805302

Plan, Site, Design And Construct Neoh Hatchery - Umatilla/Walla Walla Component

Confederated Tribes of the Umatilla Indian Reservation

Short Description: Add incubation/juvenile rearing to the Walla Walla brood facility to rear summer steelhead and spring chinook salmon for acclimation/release in the Walla Walla and Umatilla Basins. Construct acclimation facilities to accommodate all juvenile salmon and steelhead

ISRP Recommendation - DNF / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-DNF

Sponsor Funding Request = \$6,400,000 / CBFWA Funding Recommendation = \$2,800,000

Recommendation:

Do not fund. The proposal is not scientifically sound. The project needs to be included in an Independent Programmatic Review of the Umatilla and Walla Walla hatchery programs.

Comments:

It seems premature to proceed with another hatchery patterned after the Umatilla Hatchery and its associated satellite facilities until that program has undergone a review. The information now available to us suggests there are perhaps possibilities in the approach, but significant adjustments will be required. As one example, it seems fruitless to attempt to establish naturally reproducing populations of salmon in the face of high fishing rates that now occur in the ocean and mainstem Columbia River. This requires either an adjustment in the objectives or an enlarged strategy to bring the harvest managers into the picture. The project seems to be rushing into design and construction without adequate information. We have concerns about the absence of an analysis that examines the feasibility of the hatchery approach in this situation. It is unfortunate that hatchery programs can not begin with pilot projects to test their feasibility. This one budgets \$6.4 million for FY 2000 with no out-year costs, but there would be O&M costs in out years.

ProjectID: 20138

Design And Construct Neoh Walla Walla Hatchery

Confederated Tribes of the Umatilla Indian Reservation

Short Description: Add incubation/juvenile rearing capabilities to the existing S. F. Walla Walla brood facility to produce 350,000 spring chinook salmon for release in the Walla Walla River and construct an adult broodstock collection facility.

ISRP Recommendation - DNF / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-DNF

Sponsor Funding Request = \$1,380,000 / CBFWA Funding Recommendation = \$250,000

Recommendation:

Do not fund. The proposal is not scientifically sound. The project needs to be included in an Independent Programmatic Review of the Umatilla and Walla Walla hatchery programs.

Comments:

This proposal and project 8805302 should be combined. This proposal requests an additional \$1.38 million for what appears to be part of the previous proposal. No out-year costs are shown.

ProjectID: 20022

NE Oregon Hatchery Planning & Coordination - WDFW

Washington Department of Fish and Wildlife

Short Description: As co-manager of fishery resources in these basins, assist with development and implementation of the Walla Walla and Grande Ronde Master Plans. Participate in NEOH planning/coordination meetings and development of hatchery supplementation plans, facility.

ISRP Recommendation - DNF / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-DNF

Sponsor Funding Request = \$12,942 / CBFWA Funding Recommendation = \$10,000

Recommendation:

Do not fund. The project needs to be included in an Independent Programmatic Review of the Umatilla and Walla Walla hatchery programs.

Comments:

Some proposals appear to be advanced more from an institutional desire to be engaged in the decision making process than to meet a technical need. Decisions on funding therefore become policy matters. The ISRP can evaluate the technical adequacy of proposals, but the council needs to determine whether there are policy elements involved. This proposal seems motivated by an agency's wish to participate in a planning process where it has a legitimate and commendable role to play from a policy standpoint. From a purely technical standpoint, this proposal would probably add a different perspective on the evaluation of need for hatcheries on the Walla Walla River. We also note that CBFWA itself proposes a general reduction in the intended scope of the project.

ProjectID: 8802200

Umatilla River Fish Passage Operations

Confederated Tribes of the Umatilla Indian Reservation

Short Description: Increase survival of migrating juvenile and adult salmon and summer steelhead in the Umatilla Basin by operating passage facilities, flow enhancement measures, trap facilities, and transport equipment to provide adequate passage conditions.

ISRP Recommendation - Delay Funding / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-until corrected

Sponsor Funding Request = \$379,000 / CBFWA Funding Recommendation = \$360,000

Recommendation:

Delay funding until a thorough evaluation of success to date is completed. This project should be evaluated together with projects 8343600 and 8902700.

Comments:

The project's objective is to increase survival in a trap and haul operation. Yet, the proposal states that the project is not responsible for evaluating survival rates. It is true

that another project exists to measure survival rates (8902401), but this points again to our programmatic comment that there is a need for evaluation at a higher level than individual projects—at the umbrella level. An example of the kind of disconnect that is liable to occur without the higher level evaluation is illustrated in this proposal’s report of the numbers of fish transported. The proposal says that from 3,800 to 6,300 adults have been trapped at Three Mile Dam each year over the last 12 years. Of these, 400 to 3,800 have been hauled upstream and 135 to 1,100 have been hauled for brood stock to the hatchery (proposal p. 10). The reviewer naturally wonders what became of the rest of the fish. There are at a minimum 1,400 fish unaccounted for. The success of this project is evaluated on the basis of whether passage facilities meet established engineering requirements. This is certainly not an adequate measure for biological effectiveness. (See our previous comments on the Umatilla Umbrella.)

ProjectID: 8343600

Umatilla Passage Facilities O & M

Westland Irrigation District

Short Description: Maximize the survival of migrating juvenile and adult salmon and summer steelhead in the Umatilla Basin by operating and maintaining passage facilities, trapping facilities, spawning facilities and acclimation facilities according to agency guidelines.

ISRP Recommendation - Delay Funding / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-until corrected

Sponsor Funding Request = \$703,106 / CBFWA Funding Recommendation = \$502,000

Recommendation:

Delay funding until a thorough evaluation of success to date is completed. This project should be evaluated together with projects 8802200 and 8902700.

Comments:

This proposal like some others is “operational in nature rather than research oriented”. Therefore, “...specific data related to success of the project is limited.” Neither is specific information provided on the facilities operated and maintained. The reviewer is referred to an annual report for that information. The result is that there is no basis for evaluating this proposal on its own. On the basis of the facts presented, it is not clear whether the fish passage facilities are located in stretches of river that are dewatered or in stretches of river that are bypassed by the truck and haul operation. Again, this argues for an umbrella project that would provide an evaluation of project success. This project is only necessary as part of a larger effort. If the larger effort is not achieving its objectives, there is no point in continuing this one.

ProjectID: 8902700

Power Repay Umatilla Basin Project

Bonneville Power Administration

Short Description: Provide power or reimbursement for power costs for Bureau of Reclamation Umatilla Basin Project pumping plants that exchange Columbia River water for Umatilla River water.

ISRP Recommendation - Delay Funding / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-until corrected

Sponsor Funding Request = \$650,000 / CBFWA Funding Recommendation = \$550,000

Recommendation:

Delay funding until a thorough evaluation of success to date is completed. This project should be evaluated together with projects 8802200 and 8343600.

Comments:

This project belongs under an umbrella. It is not a stand-alone project. Its accomplishments need to be evaluated in terms of the subbasin objectives. Accomplishments are stated in terms of dollars spent to pump water from the Columbia River to (apparently) substitute for water that would have been withdrawn from the Umatilla River. No information is provided on the amount of water provided, or more particularly how much was left in the Umatilla River as a result of this project. No standards are mentioned for decisions about flow conditions that would call for decisions to pump or not to pump. The reviewer naturally wonders whether this pumping simply provides water to irrigators that otherwise might not even be available for withdrawal from the Umatilla River. The net effect could be zero benefit for fish. In fact, the proposal indicates that it was necessary to blast a channel in the river below Three Mile Dam in order to concentrate whatever water might reach that area.

ProjectID: 20139

Walla Walla River Fish Passage Operations

Confederated Tribes of the Umatilla Indian Reservation

Short Description: Increase survival of migrating juvenile and adult salmon and summer steelhead in the Walla Walla Basin by operating passage facilities, trapping facilities, and transport equipment, to provide adequate passage conditions.

ISRP Recommendation - Delay Funding / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-until corrected

Sponsor Funding Request = \$83,400 / CBFWA Funding Recommendation = \$73,000

Recommendation:

Delay funding until detailed methods and site specific actions are provided and an independent comprehensive review of the Walla Walla program is done.

Comments:

Although the reviewers don't doubt the lack of water in the Walla Walla, the specifics of the problem and the activity are poorly explained. What is this proposal about? What is the specific location of the collection facility and release sites? The watershed effort needs to address the lack of water as the primary limiting factor.

ProjectID: 8902401

Evaluate Juvenile Salmonid Outmigration And Survival In The Lower Umatilla

Oregon Department of Fish and Wildlife

Short Description: Determine migration patterns, migrant abundance, and survival of hatchery and natural juvenile salmonids in the Umatilla basin using PIT tag and radio telemetry technology and investigate effects of environmental variables on fish migration.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$300,499 / CBFWA Funding Recommendation = \$250,785

Recommendation:

Fund for one year. Subsequent funding contingent on a proposal that clarifies relationships to other projects and better describes methodology.

Comments:

This proposal is not a stand-alone project. It needs to be evaluated in the context of an umbrella project that would establish how it is contributing (or not) to achieving the subbasin objectives. A goal-directed workshop would probably be of value to those responsible for planning and directing projects described in these proposals. An example of what results when a proposal (or project) is considered in isolation is provided on page 9 of this proposal where it is stated "Increases in diverse populations of Umatilla River salmon and steelhead have resulted from artificial and natural production (CTUIR and ODFW 1990)." Numbers of adults are not given, perhaps because this project has responsibility only for evaluating juvenile survival and the author did not think it appropriate to include information on adults. The reviewers had to glean such information from several different proposals, not all of which contained consistent numbers.

The potential application of information from this project is not clear. How will the information on juvenile survival be used? Further, from the information given in the proposal it is not clear that the study objectives, to measure differences in survival, can be achieved. For example, there is indication of an interest in measuring differences in survival between groups of fish released at different locations in the river. But no details of the experimental design are given. It is not clear whether differences in survival between years might obscure the effects of release location. Numbers of recoveries required to detect differences of various magnitudes ought to be specified and evaluated in terms of the likelihood the experiment can be carried out successfully.

ProjectID: 9000501

Umatilla River Basin Natural Production Monitoring And Evaluation

Confederated Tribes of the Umatilla Indian Reservation

Short Description: Monitor and evaluate natural spawning, rearing, migration, survival, life histories, age and growth characteristics, and genetic characteristics of adult salmon and steelhead and their natural progeny in the Umatilla River Basins.

ISRP Recommendation - Fund in Part / CBFWA Tier 1 / ISRP Comparison with CBFWA: Partially agree-fund in part

Sponsor Funding Request = \$609,191 / CBFWA Funding Recommendation = \$480,000

Recommendation:

Fund in part at a reduced level. Improve the focus. Review next year.

Comments:

There is overlap of tasks within two proposals: 9000501 and 8902401. Both projects intend to measure survival of juvenile salmon and steelhead using PIT tag technology. Proposal 9000501 proposes to go a step further and estimate smolt-to-adult return ratios. All of the monitoring and evaluation proposals for the Umatilla Basin describe objectives to monitor natural production. There should be some monitoring of natural production, but this proposal seems overly broad. With respect to monitoring potential spawning sites, the workload seems formidable. Perhaps some of the questions could be answered in smaller bites. There is a need to streamline the activities. Monitoring at index sites could answer the same questions. Improved coordination among the projects may assist in this.

To be realistic, the proposal to estimate smolt-to-adult return rates should include an analysis of the numbers of juveniles that would need to be tagged and the corresponding numbers of adults to be recovered in order to accomplish a useful estimate. It is likely that these numbers can not be achieved, given the circumstances involved, i.e. small population, low detection rate of adults, etc. The harvest numbers provided (38 steelhead, 183 chinook in the river fisheries) do not suggest a high degree of success under the present strategies.

ProjectID: 8710001

Enhance Umatilla River Basin Anadromous Fish Habitat

Confederated Tribes of the Umatilla Indian Reservation

Short Description: Increase natural production potential of summer steelhead, chinook salmon and coho salmon in the Umatilla River Basin.

ISRP Recommendation - Fund in Part / CBFWA Tier 1 / ISRP Comparison with CBFWA: Partially agree-fund in part

Sponsor Funding Request = \$305,000 / CBFWA Funding Recommendation = \$260,000

Recommendation:

Fund in part at a reduced level. Review next year for reports of results and application of monitoring.

Comments:

This is not a stand-alone proposal. It can only be evaluated in the context of the Umatilla Subbasin program. The proposal provides a substantial list of data to be collected, but there is no mention of analysis or interpretation of the data. Who will be responsible for analysis? It is not clear from the list of monitoring activities that the needed knowledge will be obtained. What information is needed? For example, the reviewers were not able to discern the value of macroinvertebrate sampling. How will that information be used to relate to the subbasin goals? Response variables need to correspond with the objectives.

If the objective is to produce more smolts, this project needs to be closely coordinated with the natural production studies.

ProjectID: 8710002

Protect And Enhance Anadromous Fish Habitat In The Umatilla River Subbasin

Oregon Department of Fish and Wildlife

Short Description: Protect and enhance coldwater fish habitat on private lands in the Umatilla River basin in a manner that achieves self-sustaining salmonid populations and their associated habitat by utilizing natural stream functions to the fullest extent.

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$465,158 / CBFWA Funding Recommendation = \$353,000

Recommendation:

Fund. Review next year for reporting of results.

Comments:

This proposal is not a stand-alone project. It needs to be evaluated within the Umatilla Subbasin umbrella. The concept is good, but it is noted that only 3 of 13 projects are on schedule. Reviewers wondered how much of the budget goes for lease agreements.

ProjectID: 20524

Multi-Year Plan Walla Walla Anadromous Fish Plan

Columbia Basin Fish & Wildlife Authority

Short Description:

ISRP Recommendation - na / CBFWA Tier na / ISRP Comparison with CBFWA: Umbrella Proposal

Sponsor Funding Request = \$ / CBFWA Funding Recommendation =

Recommendation:

NA - Umbrella Proposal

Comments:

It seems premature to fund any projects for multiple years until their need and effectiveness have been documented through an umbrella project that evaluates them in a larger context such as a subbasin plan. It would be helpful to have BPA fund 6 or 8 regional evaluators who oversee and report on results of subbasin activities. These individuals should be well trained in science and independent from the entities funded by BPA. Perhaps they could be viewed as extensions of the ISRP. Questions to be addressed would be to what extent is the collection of subbasin activities benefiting fish and wildlife? Is there fiscal accountability? Are the most cost-effective alternatives being implemented? Have limiting factors been identified and addressed? Prior to full implementation of the Walla Walla Anadromous Fish Plan the underlying limiting factors that have been identified, i.e. water quality and quantity, should be dealt with.

ProjectID: 9601100

Walla Walla River Juvenile And Adult Passage Improvements

Confederated Tribes of the Umatilla Indian Reservation

Short Description: Provide safe passage for salmonid fish at several irrigation diversion dams and associated irrigation canals within the Walla Walla River Basin.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$2,840,000 / CBFWA Funding Recommendation = \$2,840,000

Recommendation:

Fund for one year. Subsequent funding contingent on independent review of a comprehensive plan that shows priority of sites and actions.

Comments:

As with the Umatilla Subbasin effort, the individual portions of the Walla Walla River effort are not stand-alone projects. They need to be reviewed in the context of an umbrella plan that provides a larger context for these proposals. It is not clear how many such irrigation diversions in the basin will require fish passage facilities, thus it is not clear how much progress is represented by this project. It is not clear to what extent priorities have been set for action, nor what criteria were used to select the actions that are mentioned.

ProjectID: 9604601

Walla Walla Basin Fish Habitat Enhancement

Confederated Tribes of the Umatilla Indian Reservation

Short Description: Protect and enhance riparian habitat with particular emphasis on the holding, spawning, and rearing areas of salmonid fishes, thus improving water quality and quantity and promoting natural ecological functions.

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$275,000 / CBFWA Funding Recommendation = \$240,000

Recommendation:

Fund.

Comments:

This proposal needs to be evaluated in the context of an umbrella plan for the Walla Walla and Touchet Rivers. This appears to be a good project that seems to be reasonably well coordinated with others. It should be reviewed further in the context of the subbasin plan for the Walla Walla and Touchet rivers.

ProjectID: 20145

Evaluate Little Walla Walla Screening Facility

Oregon Department of Fish and Wildlife

Short Description: Evaluate juvenile salmonid passage and migration at the newly constructed Little Walla Walla Bypass and Trapping Screening Facility. Investigate fish injury, delay, and entrainment, and measure water velocities at facility structures.

ISRP Recommendation - Fund in Part / CBFWA Tier 2 / ISRP Comparison with CBFWA: Agree

Sponsor Funding Request = \$242,677 / CBFWA Funding Recommendation = Recommendation:

Fund in part for one year at reduced level.

Comments:

The project seems like more than is necessary to evaluate performance of the screen. It should be possible to obtain the necessary information within part of one year. It is not clear that a full-time person would be required for the tasks involved.

ProjectID: 9901100

Assess Fish Habitat & Salmonids in the Walla Walla Watershed in Washington

Washington State Department of Fish and Wildlife

Short Description: Determine fish passage, rearing, spawning conditions, and identify limiting factors for steelhead and for potential reintroduction of chinook salmon, and assess steelhead and bulltrout distribution, densities, and genetic composition in the Walla Walla Watershed.

ISRP Recommendation - Delay Funding / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-until corrected

Sponsor Funding Request = \$184,723 / CBFWA Funding Recommendation = \$169,723

Recommendation:

Delay funding until an independent comprehensive review of the Walla Walla program is done. The review needs to be coordinated with related projects (20021, 20127) to identify overlap and collection of unnecessary data.

Comments:

Several proposals for the Walla Walla address freshwater production, (9901100, 20021, 20127). Their objectives are not readily distinguishable. It is not clear whether they are coordinated or duplicative. For example, both 9901100 and 20021 include genetic components. The proposal mentions that Lyons Ferry stock steelhead are currently being used for mitigation in the Walla Walla River basin. It expresses a concern that several other stocks of steelhead may be identified in the basin, and that a different brood stock may be needed. The DNA information proposed for collection will not be critical for development of the broodstock, if a broodstock is even needed.

ProjectID: 20021

Estimate natural steelhead production in two tributaries of the Walla Walla

Washington Department of Fish and Wildlife

Short Description: Estimate adult escapement and natural production of wild steelhead in Mill Creek and Touchet River (tributaries of the Walla Walla River) to determine whether steelhead populations above four Columbia River dams can be sustained without hatchery supplementation.

ISRP Recommendation - DNF / CBFWA Tier 2 / ISRP Comparison with CBFWA: Disagree-DNF

Sponsor Funding Request = \$332,850 / CBFWA Funding Recommendation =

Recommendation:

Do not fund. Incorporate into project 9901100.

Comments:

Results of this work should be available prior to the design and construction of the NEOH hatchery. The sequencing of projects is important. If the region intends to proceed with construction of the hatchery and supplementation to lessen the risk of extinction, then this study is not needed. This project should be closely related to the other regional studies, with an expanded description of its relationship to the Lower Snake River Compensation Program and assurance of PIT tagging coordination with regional efforts. Given the numbers of fish available, PIT tagging may not lead to the desired results.

Further analysis should help the decision. Objectives related to estimates of escapement, egg-to-smolt survival and smolt-to-adult survival are worthwhile but ambitious, particularly the smolt-to-adult survival. Details of stock-recruitment analysis, brood tables and the connection to management are not clear. Reviewers judge that this project does not clearly establish benefits to fish and wildlife.

ProjectID: 20127

Walla Walla River Basin Monitoring and Evaluation Project

Confederated Tribes of the Umatilla Indian Reservation

Short Description:

ISRP Recommendation - Delay Funding / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-until corrected

Sponsor Funding Request = \$156,931 / CBFWA Funding Recommendation = \$134,000

Recommendation:

Delay funding until an independent comprehensive review of the Walla Walla program is done. The review needs to be coordinated with related projects (9901100, 20021) to identify overlap and collection of unnecessary data.

Comments:

This project needs close coordination with 20021, which has similar objectives. This proposal has to do with collection of baseline data, with no explanation of the goal, purpose or endpoint. Analysis and interpretation of the data are not adequately described. The proposal is similar to 20021.

Yakima and Klickitat

ProjectID: 20510

Yakima/Klickitat Fisheries Project -- Umbrella

Yakama Indian Nation

Short Description: Umbrella proposal describing YKFP activities in four major work areas: Monitoring and Evaluation; Operation and Maintenance; Management, Data and Habitat; and Design and Construction.

ISRP Recommendation - na / CBFWA Tier na / ISRP Comparison with CBFWA: Umbrella Proposal

Sponsor Funding Request = \$ / CBFWA Funding Recommendation =

Recommendation:

NA - Umbrella Proposal

Comments:

The projects within this umbrella proposal largely emphasize administrative processes and do not provide the scientific rationale for the proposed actions. For example, an entire project is devoted to administration (8812025). The project proposals within the umbrella should address specific technical activities directly related to the two objectives, rather than bureaucratic functions. Insufficient technical background is given to evaluate the scientific merit of the proposed measures relative to other measures that might have been selected. The umbrella proposal should explicitly discuss relevant habitat restoration so the relationship between habitat and supplementation activities is clear. The objective

to "optimize natural production of spring chinook with respect to abundance and distribution" is unclear. The selection of numerical escapement objectives is not explained. The objectives do not define how natural production should be distributed in the basin.

The description of the problem relating to fish and wildlife is inadequate and poorly documented. Justification of the project references previous Council decisions with little technical explanation for how the components of this umbrella are expected to address the problem. For example, it is not clear why supplementation is being tested in the Yakima or the basis for the critical uncertainties. For a reviewer with little knowledge of fish in the Yakima Basin, too little information is provided to judge the merits or organization of these proposals. In general, much of the detail that could have been presented through the umbrella proposal was left to individual proposals and the ability of the reviewer to synthesize the information. To understand the importance of project #8811525 for design and construction, for example, it was necessary to read the monitoring and evaluation proposal first and piece together the relationship between these two projects. Why shouldn't most of the administrative activities included in project 8812025 be funded through the overheads collected on this group of projects?

ProjectID: 8811525

Yakima/Klickitat Fisheries Project Design And Construction

Yakama Indian Nation

Short Description: Design/construction re:

1. Cle Elum: a) M&E Facility, b) Interpretative Center c) Employee Housing
2. Prosser: a) Rearing/Settling Ponds, b) Employee Housing c) Alternative Water Supply
3. Klickitat: Design of Lyle Trap

ISRP Recommendation - Delay Funding / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-until corrected

Sponsor Funding Request = \$1,565,000 / CBFWA Funding Recommendation = \$1,565,000

Recommendation:

Delay funding until the entire set of proposals under umbrella 20510 have been reorganized to provide the scientific rationale for the two stated objectives to test supplementation and to provide a harvestable surplus.

Comments:

This proposal focuses on the use of supplementation to restore natural production because habitat improvement will take a long time. But the umbrella (and this sub-proposal) does not describe the relationship between the supplementation and habitat work. If it will take decades to improve habitat and to develop normative conditions, how will supplementation succeed as a "stopgap?" If there is not sufficient habitat to sustain natural reproduction of salmon, then presumably supplementation will not work in the short term either.

Construction of facilities per se does not address a fish and wildlife problem but is simply a means to some other end. According to the objectives, this subproposal will be judged

successful if the facilities are constructed, but the merits of construction must be judged in relation to the ecological risks and benefits of supplementation. That information is not provided.

The proposal describes the history of decisions leading to facility construction. It states that all major research results to date are available in the final EIS. But the proposal does not summarize information needed to judge whether this project should be completed. The proposal relies on the history of prior decisions to justify the work rather than detailing the rationale that presumably supported these decisions. A full description of how each facility will function (e.g., interpretive center, Monitoring and Evaluation building, etc.) and how collectively these facilities will meet the supplementation goal is not provided.

The proposal emphasizes the role of adaptive management and considers the rearing and release of each batch of smolts as tests of the latest supplementation theory. Yet the specific tests and experimental designs to be conducted are not described. Therefore it is not possible to evaluate them. The construction of permanent facilities takes for granted that the success of supplementation is a forgone conclusion. What will happen to these facilities if supplementation does not work? What criteria will be used to judge success or failure of supplementation, and over what time period are results required to make this determination?

The umbrella proposal states: “Its ultimate goal is to sustain naturally spawning populations with a high enough survival range to be able to phase out artificial propagation when critical habitat improvements have reached a point that artificial enhancement is no longer necessary.” This proposal should explain how permanent facilities are consistent with that goal. Why are the authors not following the NRC’s recommendation in Upstream to employ temporary facilities? Somewhere in the suite of supplementation or habitat proposals those critical habitat improvements should be identified along with a description of how they will be addressed.

This proposal is closely tied with the monitoring & evaluation proposal. It was necessary to read the M & E proposal before judging this one, because neither proposal nor the umbrella proposal provided enough detail and justification. The proposal contained few details about the qualifications of the builders, costs, or construction schedules. The completion date of 2048 is not explained. Is this interpretive center different from the one that they already have?

ProjectID: 8812025

Ykfp Management, Data And Habitat

Yakama Indian Nation

Short Description: This proposal describes the YKFP’s management and administrative support requirements for Project operations in the Yakima and Klickitat River basins.

ISRP Recommendation - Delay Funding / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-until corrected

Sponsor Funding Request = \$750,000 / CBFWA Funding Recommendation = \$750,000

Recommendation:

Delay funding until the entire set of proposals under umbrella 20510 have been reorganized to provide the scientific rationale for the two stated objectives to test supplementation and to provide a harvestable surplus.

Comments:

This is primarily a bureaucratic subproposal. It describes the committee structure and coordination processes for the plan. It does not address the technical implementation of the project. This is an awkward organization (separating project management as a distinct subproposal). It would make more sense to fold management into a more complete description of the technical program. Contrary to the title, it has very little to say about data or habitat. This project seems parallel to the WDF proposal, Policy and Technical Involvement (9506425), but the title implies data and habitat work that it does not specifically address.

The relationship to habitat improvement projects discussed on p. 4119 is not clear and seems indirect at best. The proposal notes that a vast amount of data have been collected in previous years. But it does not say whether these data were useful, how they were analyzed, or how this proposed management structure will improve on information management. It does not evaluate alternative management or data structures or indicate why the proposed structure is preferred.

The umbrella proposal (20510) lists over \$1 million in indirect costs. This project should be reviewed by appropriate financial experts at BPA to determine if some of the tasks described here should be funded as part of the indirect. The project history section must include explicit examples of adaptive management as it has been used in this basin. For example, were the findings listed on pages 3-5 of the M&E proposal incorporated into the program through adaptive management? The proposal should include an explicit description of the adaptive management process as it is employed in the basin. Dave Fast is budgeted for more than 36 months for FY 2000 in this set of proposals.

Neither the proposal nor the umbrella proposal presented adequate information on the fishery problem that this proposal addresses. This had to be inferred by reading other proposals within this group or relying on the reviewers' previous knowledge. The technical background on the need for project management and decision making was logical but lacked any citations or documentation. In general, the proposal did not address the Category II questions asked of this kind of proposal very well. It is not clear how the success of this project has been determined or will be determined. The description and justification for the budget section was inadequate.

ProjectID: 9506325

Yakima/Klickitat Fisheries Project Monitoring And Evaluation

Yakama Indian Nation

Short Description: Monitors YKFP in terms of natural production, harvest , ecological and genetic impacts, guides adaptive management within the project and provides detailed information on supplementation to the region.

ISRP Recommendation - Delay Funding / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-until corrected

Sponsor Funding Request = \$4,639,934 / CBFWA Funding Recommendation = \$4,309,934

Recommendation:

Delay funding until the proposals are separated into smaller subproposals: 1) monitoring directly related to evaluating the objectives, 2) research projects such as the species interactions study, and 3) projects designed to develop new methods. The entire set of proposals under the umbrella needs to be reorganized to explicitly address the two stated objectives to test supplementation and to provide a harvestable surplus.

Comments:

Among the projects within the umbrella (20510) this proposal provided the best description of the project need and technical background. Table 1 was useful and could be improved by adding a symbol to indicate whether the results are expected to apply to only the Yakima or can be generalized for supplementation throughout the Columbia River basin. Task and objective descriptions were good, but it was not clear whether the assumptions were assumptions that were being tested by the project or assumptions that will not be tested but are necessary to infer from the project's results. The proposal encompasses a large number of objectives, which were described in very fine print and were laborious to read. It is not always clear how they fit together, or were chosen. The Busck et al. (1997) monitoring plan, which probably provides some of this explanation, was not cited in the references. The timeline (one year) for some objectives seems unrealistic, because the project will not be able to address interannual variation.

The proposal lists a very large number of research and monitoring activities, but does not develop an overarching strategy to explain why these particular activities were chosen or how all of these results are to be integrated to make an assessment of overall success/failure. While this rationale may well exist, it is not described. How do these various elements collectively lead to the evaluation of the supplementation objectives?

This subproposal lists monitoring activities but does not define the criteria by which supplementation results will be judged effective or ineffective. Clearly, a lot of useful ecological information is being collected. But for a multi-million dollar monitoring effort, a better explanation of the problem and the strategy should be provided. The proposal appears to combine research, M & E and methods development into one proposal. Those three categories should be in separate proposals. The proposal provides an overview of the scope of activities, but inadequate description of methods. Last year, the separate proposals that have been combined here were generally better.

ProjectID: 9506425

Ykfp - Wdfw Policy And Technical Involvement In The Ykfp

Washington Department of Fish and Wildlife

Short Description: Manage policy and technical oversight of the Yakima/Klickitat Fisheries Project through participation on the project's Policy Group and Scientific and Technical Advisory Group as delineated in the agreed-upon project management structure.

ISRP Recommendation - Delay Funding / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-until corrected

Sponsor Funding Request = \$275,000 / CBFWA Funding Recommendation = \$275,000

Recommendation:

Delay funding until the authors justify why this should not be covered under indirect costs from other proposals in project 20510. The set of proposals needs to be reorganized to explicitly address the two stated objectives to test supplementation and to provide a harvestable surplus.

Comments:

This proposal emphasizes the process of adaptive management but does not identify the specific experiments that are being tested, the management response that has/will be made, or the criteria that will be used to determine if management changes are needed. This proposal is a description of the current bureaucratic structure. It does not discuss the need or problem solved by this structure. It is awkward to review the management portion of supplementation as a distinct subproposal. The staff proposed for this work have primarily technical expertise associated with data analysis or hatcheries. There seems to be little ecological expertise represented.

Like most of the other projects in this group, this proposal provided only minimal background or technical detail on the fishery problems that it was to address. These had to be inferred by reading other proposals within this group or relying on the reviewer's previous knowledge. The technical background on the need for project management and decision making was logical but lacked any citations or documentation. The major criticism of this proposal is that it is not clear how success will be measured. The proposal has an adequate description of the progress reports and planning documents that are produced, but it defines success by "effective participation" without any elaboration on what that means. Why aren't these activities covered by the indirect costs?

ProjectID: 9701325

Yakima/Klickitat Fisheries Project Operations And Maintenance

Yakama Indian Nation

Short Description: This proposal provides for the operation and maintenance of the YKFP's fish production facilities. These facilities are:

1. Cle Elum Supplementation and Research Facility;
- 2, Prosser Fish Facility; and ,
3. Marion Drain Fish Facility.

ISRP Recommendation - Delay Funding / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-until corrected

Sponsor Funding Request = \$2,260,160 / CBFWA Funding Recommendation = \$2,260,160

Recommendation:

Delay funding until the entire set of proposals under umbrella 20510 have been reorganized to provide the scientific rationale for the two stated objectives to test supplementation and to provide a harvestable surplus.

Comments:

Like most of the other proposals in this group, this proposal provided only minimal background or technical detail on the fishery problems the project was to address. These had to be inferred by reading other proposals within this group or relying on the reviewer's familiarity with the Yakima Basin. The proposal notes that broodstock collection is not to exceed 50% of spawner escapement. It does not give a rationale for this number. It is not clear whether this proportion will minimize genetic risks. What are the risks that catastrophic loss of the hatchery population will result in the loss of half of the wild spawners?

Thermal acceleration of 40,000 fall chinook is not described. What is the experiment and when are the fish released? This proposal lists production levels but does not give a rationale for the numbers used, the tests planned, or the results to date (other than meeting hatchery production goals). The proposal states it is consistent with chapter 2 of Return to the River. It should explain how it is consistent.

The need for O & M funds is clearly an essential part of the overall program to restore fisheries and test supplementation. The methods of operation, however, were only generally described without documentation or reference. For example, the description of general operating methods is "currently accepted hatchery practices." Depending on the reviewer's previous experience currently accepted hatchery practices might be considered entirely inappropriate for this program. A detailed manual for hatchery operations, which was developed for the YKFP, was not cited. Likewise, both internal YKFP planning documents and published literature could have been cited for brood stock collection methods, spawning and rearing protocols, and acclimation and release. The success of the fish culture funded by this proposal is clearly linked to the monitoring and evaluation study. Although this link was acknowledged, it could have been developed more.

D. Fast is budgeted for 12 months on each of 3 different proposals (this one, 8812025 and 9506325). M. Sampson is budgeted 12 months on each of 2 different proposals (this one and 8812025).

ProjectID: 20525

Multi-Year Plan Klickitat Anadromous Fish Plan

Columbia Basin Fish & Wildlife Authority

Short Description:

ISRP Recommendation - na / CBFWA Tier na / ISRP Comparison with CBFWA: Umbrella Proposal

Sponsor Funding Request = \$ / CBFWA Funding Recommendation =

Recommendation:

NA - Umbrella Proposal

Comments:

This umbrella proposal provided little information to reviewers. It contained a brief but poorly documented description of the Klickitat watershed and some of the habitat problems facing fish. There appears to have been very little effort to provide any detail to reviewers or to proof read what was provided. Many sections were left undone or incomplete. The problem addressed by this umbrella is not clearly stated. The objectives are vague statements that do not provide much guidance for evaluating success. The proposal does not review the technical literature to provide the scientific context or need for the work. The umbrella does not describe how the separate projects tie together to address a common goal. The specific projects included under this umbrella are not clear. For example, projects 20150-20155 all list this as their umbrella proposal, but none of these projects are described or listed in the umbrella.

ProjectID: 9705600

Lower Klickitat River Riparian & In-Channel Habitat Enhancement Project

Yakama Indian Nation - Fisheries

Short Description: Watershed assessment, improve riparian conditions for steelhead and coho with cattle exclosure fencing, land aquisitions, LWD addition, enhance pool formation, capture spawning gravels, revegetation of riparian areas, augment summer flows, reduce sediment.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$300,000 / CBFWA Funding Recommendation = \$269,666

Recommendation:

Fund for one year. Subsequent funding contingent on correction of deficiencies identified in ISRP comments.

Comments:

This proposal provided useful background information about the general problems affecting fish in the Klickitat watershed and a good general description of the need for the different project elements. It could have been vastly improved, however, by including documentation and references and by proofreading. Beyond the general descriptions, the proposal does not offer a rationale for how the particular restoration activities were

identified and why they are the highest priority. What factors are the greatest impediments to salmon recovery and why? If a baseline survey was completed in 1997 (Swale Creek), then the results should be summarized and used as justification for this work. In section 8a the proposal states that current conditions limit spawning opportunities. What conditions? They should be explicitly stated. What are the specific habitat problems and how will this project correct them? The objectives do not contain measurable performance criteria. How will success be determined? There is a good description of project history, but a poor tie back to problems and measurable objectives.

It is difficult to reconcile the decision for ongoing restoration work (for which no rationale is given) and the proposed watershed assessment, presumably to evaluate restoration needs. If watershed assessment still needs to be completed then how can specific restoration measures be identified and a budget developed? If results of prior assessment work are available, then they should be presented to provide a rationale for the ongoing habitat work. It is not clear what level of watershed assessment has been done in the basin and how the results have been incorporated in proposal. Watershed assessment was identified as one of the objectives, but the description of the methods is minimal.

The monitoring design and performance measures are not clear. The adequacy of the budget cannot be evaluated because the limiting factors and priority restoration needs (and therefore reasonable costs) are not defined. The use of land acquisition is potentially very important but was not described in any detail. The involvement of landowners and the public in the process is a strength of the proposal.

ProjectID: 20118

Klickitat River Sub-Basin Assessment

Yakama Indian Nation

Short Description: Compile and evaluate existing fisheries and watershed information and perform field verification to prioritize protection, restoration and analysis needs throughout the Klickitat River subbasin, based on potential benefit to the fisheries resources.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$235,059 / CBFWA Funding Recommendation = \$141,035

Recommendation:

Fund for one year as proposed. Subsequent funding contingent on correction of deficiencies identified by ISRP. In addition to the problems discussed in the comments, there is a need to describe the relation to 20117 and 9705600 especially the assessment activities described in 9705600.

Comments:

In general, the intent and reasoning behind this proposal are good. Unfortunately, the explanation of the programmatic need was poorly developed or documented, because it did not address the kinds of criteria by which information dissemination and database proposals were to be evaluated. The proposal had a good description of the watershed

but a very weak description of the fishery problems in the watershed. This might have been provided by the umbrella proposal, but the umbrella proposal was equally weak. This proposal was submitted as an information dissemination proposal, but it did not address the criteria developed for this kind of proposal. These include quality control for the information, assessment of public demand for information, expected changes in public behavior, and methods for assessing impacts. Watershed assessment is clearly needed and should have preceded the habitat/supplementation effort. The watershed assessment should be complete before restoration activities proposed in 9705600 are implemented. However, they do not describe the relation to 9705600. 9705600 also lists completion of a watershed assessment. Is there a difference between the watershed assessment described here compared to that in 9705600?

The proposal provides some useful background information but not a sufficient description of the technical methods to be used. The proposal should review similar assessments tried elsewhere as a justification for the approach that will be taken here. The Proper Functioning Condition methodology, which relies on expert opinion, needs to be discussed and evaluated relative to alternative stream/riparian assessment techniques that are available. Considerable work has been done on evaluating stream and riparian habitat conditions throughout the Pacific Northwest. There is not scientific consensus about the PFC approach.

The budget for the subcontract needs to be spelled out. It is the bulk of the project, yet the elements of the subcontract are not itemized. Most of the personnel assigned to this work would be hired under the subcontract. It is not possible to evaluate qualifications because the individuals have not been chosen. Would two different teams or a single team be used for the work proposed under the Klickitat and Yakima subbasin assessments?

ProjectID: 20526

Multi-Year Plan Yakima Anadromous Fish Plan

Columbia Basin Fish & Wildlife Authority

Short Description:

**ISRP Recommendation - na / CBFWA Tier na / ISRP Comparison with CBFWA:
Umbrella Proposal**

Sponsor Funding Request = \$ / CBFWA Funding Recommendation =

Recommendation:

NA - Umbrella Proposal

Comments:

This umbrella proposal was inadequate. It provides a short description of the Yakima Basin and some of the fishery problems existing there but no documentation or references. Many sections of the proposal are incomplete or not addressed. These include lists of critically dependent projects, past accomplishments, schedule constraints, completion dates, and budgets. The proposal does list the relationship of these projects to others in the basin in addressing these needs. Objective 1 seeks to restore "ecosystem integrity/function throughout all life history phases by implementing a "normative" or historical river ecosystem as an overall goal." Yet the only task under this objective

involves increased enforcement and public awareness. Public awareness seems only a small part of what is needed to fulfill Objective 1.

It is unclear how all the actions to define limiting factors and make habitat improvements can be defined if a watershed assessment (e.g., Project #20118) has not been completed. The relationship among habitat work, planning, and production facilities under this umbrella to habitat projects in the Yakima Subbasin Habitat/Watershed Project Umbrella (#20547) is unclear. Are these various projects related or were they developed independently? Assuming they are coordinated at the subbasin level, how were priorities chosen? How will results from separate projects be integrated? How will effectiveness be monitored? This is not an adequate umbrella document. It is primarily a list of activities. The umbrella gives no clear description of the rationale, technical approach, or integration and sequencing of projects.

ProjectID: 8506200

Passage Improvement Evaluation

Pacific Northwest National Laboratory

Short Description: Evaluate the biologic and hydrologic effectiveness of juvenile fish passage facilities constructed to correct structural problems at irrigation diversion dams, canals and ditches that interfere with the passage of anadromous fish

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$100,000 / CBFWA Funding Recommendation = \$100,000

Recommendation:

Fund. Group the fish screening projects into a set (8506200, 9105710, 9107500, 9200900, 9503300) and fund for four years. The ISRP should review again in 2003.

Comments:

This is a good proposal. It clearly describes the work to be accomplished, the underlying assumptions, and methods. This proposal had a good general description of the programmatic need for this work and the relationship to other projects. The difference between Phase I and Phase II sites/activities should be explained early in the document. The specific purpose of the strobe and ultrasound experiments could be better defined. The proposal should indicate the specific amount of time each individual is budgeted. Are there a known number of designs to be tested or is technical support under Task I-B simply for work to be provided on an as-needed basis?

The proposal should describe the context of the passage improvement project within the overall program. The writers refer vaguely to “many problems” that need to be evaluated without providing much detail. The methods section did not offer much more detail. The stated objectives were measurable, however. The proposal writers did a convincing job of describing the usefulness of their facilities to address this research and communicate the results. In the future, all the fish screening projects in the Yakima Basin should be placed in an umbrella proposal.

ProjectID: 9105700

Yakima Phase 2 [Fish] Screen Fabrication

Washington Department of Fish and Wildlife, Yakima Screen Shop

Short Description: YSS fabricates and installs fish screens and all miscellaneous metalwork for Yakima Basin Phase II screen projects. New fish screens prevent mortality and/or injury of juvenile anadromous and resident fish in gravity irrigation diversions.

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$293,113 / CBFWA Funding Recommendation = \$293,113

Recommendation:

Fund. Group the fish screening projects into a set (8506200, 9105710, 9107500, 9200900, 9503300) and fund for four years. The ISRP should review again in 2003.

Comments:

This proposal did a convincing job of describing the need and benefits of the project. The relationship to other projects and project history was brief but adequate. The proposal objectives were specific and measurable. The methods section, however, was vague and could have used better development. In particular, the writers included little information on provisions for delays, cost overruns, or expected long-term maintenance needs. This project is tightly linked to project #9105700 and closely related to project #920900. All the project descriptions shared the same introductory material. This suggests that these proposals could have been introduced under an umbrella proposal, which would have reduced the repetitive material and provided an opportunity to specifically describe the functional relationship among these projects.

The next time this project comes up for review the following areas should be improved:

1. The difference in activities between this and the screen construction project should be made clearer. Given the amount of overlap in the projects and the repeat of information in each proposal, it might be reasonable to combine these proposals.
2. More detail is needed in the budget and schedule. What are the estimated costs of the individual projects? Since delays last year had an affect on this year's proposal, how might delays in the civil works construction schedule affect the proposed fabrication plans and budget?
3. Additional detail is needed regarding the budgeted activities, sequence of work, and contingencies. The linkage to project 9107500 creates some problems due to the lack of specificity in that budget and schedule (see comments).

ProjectID: 9107500

Yakima Phase II Screens - Construction

U.S. Bureau of Reclamation

Short Description: Install new fish screens at all significant diversions in the Yakima River Basin to keep juvenile salmon and steelhead from being diverted and lost in canals during outmigration. Improve adult upstream passage at selected sites.

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$1,000,000 / CBFWA Funding Recommendation = \$1,000,000

Recommendation:

Fund. Group the fish screening projects into a set (8506200, 9105710, 9107500, 9200900, 9503300) and fund for four years. The ISRP should review again in 2003.

Comments:

This proposal did a convincing job of describing the need and benefits of the project. The relationship to other projects and project history was brief but adequate. The proposal objectives were too brief and needed better development. Although specific projects were identified, it was difficult to judge the relative effort and expense these

would incur without breaking the objectives down into more descriptive tasks. The proposal should have given more detail on measurable tasks where the objective was predesign and design work. The proposal is requesting \$1,000,000, but the budget section did not provide much explanation or justification for that amount. The proposal does a good job of explaining the critical link to project #9105700 and the need to coordinate the two projects to avoid delays and cost over runs. What specific activities are associated with each construction project? What projects will be completed first? Personnel requirements cannot be evaluated without more information about the work to be completed within the period of this proposal. Some context on the selection of project sites and their priorities relative to alternative sites would be helpful.

This project in large part sets the schedule for the screen fabrication project, but there is no timetable given, and the possibility of delays is noted. How will unforeseen changes in construction plans affect the screen fabrication project or the personnel needs for this proposal? How will cost overruns be avoided? The next time this project comes up for review the deficiencies noted above should be corrected.

ProjectID: 9200900

Yakima [Fish] Screens - Phase 2 - O&M

Washington Department of Fish and Wildlife, Yakima Screen Shop

Short Description: YSS performs preventative maintenance and operational adjustments on completed Yakima Phase 2 fish screen facilities to assure optimal fish protection performance and to extend facility life, thereby protecting BPA's capital investment.

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$133,591 / CBFWA Funding Recommendation = \$133,591

Recommendation:

Fund. Group the fish screening projects into a set (8506200, 9105710, 9107500, 9200900, 9503300) and fund for four years. The ISRP should review again in 2003.

Comments:

The proposal is the third in a series of proposals for screening. This proposal, which addresses maintenance needs, did a convincing job of describing the need and benefits of the project. The relationship to other projects and project history was brief but adequate. The proposal objectives are clearly defined. Although the description of the project history and success were brief, the proposal provided enough documentation that a reviewer could track down more detailed evaluations if necessary. Rather than listing all of the progress reports (p. 4322), a table would help to summarize generally the work to date by location. This might provide a better idea of how much maintenance has been needed and may be required in the future. The proposal does not evaluate the adequacy of past maintenance efforts or provide evidence for the frequency of maintenance expected in the future.

ProjectID: 9503300

O&M Of Yakima Phase II Fish Facilities

U.S. Bureau of Reclamation

Short Description: Operate and maintain BPA owned Yakima River basin Phase II anadromous fish passage, protection and trapping facilities.

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$99,520 / CBFWA Funding Recommendation = \$99,520
Recommendation:

Fund. Group the fish screening projects into a set (8506200, 9105710, 9107500, 9200900, 9503300) and fund for four years. The ISRP should review again in 2003.

Comments:

This project proposal is the weakest of the set of screen proposals. It was often short and to the point and lacked important detail and documentation. Technical background needed to be better developed and documented. Objectives were very general and could have been broken down into specific tasks or schedules. It was difficult to determine how the performance of the project might be measured. Although monitoring and evaluation were addressed, the project history provided little information on the success of this program or the results of past monitoring. Much of the work is subcontracted to local irrigation districts, but the proposal provided little detail on the quality control for this work.

The information provided is not adequate to evaluate the budget. Won't the personnel costs continue to increase as more projects are completed? How were personnel costs estimated? How do past/future budgets relate to the number of sites requiring O&M? It is not clear how O&M costs for Phase II projects will be estimated as more projects come on line. The proposal does not list measurable biological objectives but indicates biological results will be monitored and reported by other agencies. But if these results will measure the success of O&M, then the objectives and evaluation criteria should at least be defined here. It is appropriate to include this project with the other screening proposals and place the whole set on a four year funding track. The difficulties noted must be corrected for the next review.

ProjectID: 9405900

Yakima Basin Environmental Education

Educational Service District 105

Short Description: Provides training for area teachers and students allowing them the opportunity to participate in the maintenance and restoration of their local watershed, through Integrated, hands-on curriculum that meets the essential learnings mandated the state of WA.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$125,186 / CBFWA Funding Recommendation = \$125,186

Recommendation:

Fund for one year. Subsequent funding beyond FY 2000 contingent on correcting the deficiencies.

Comments:

We believe environmental education is an important purpose and support the need for it. However, this proposal makes a weak case for the project as described in the proposal. The proposal states that there are a number of education programs offered by various resource agencies in the Columbia Basin, but in Section 8c (relationship to Other Projects) it fails to mention these other projects and how this projects interacts with them. This shortcoming was identified last year. The proposal has six objectives but appears to have only one measurable criteria for success and that is the number of teachers trained. That performance measure does not adequately address the range of objectives described in the text. There are a large number of projects funded by BPA in the Yakima Basin that could be related to this education program. The proposal does not mention any of them and leaves the reviewers wondering how familiar the project leader is with the ongoing environmental and fisheries work in the basin. As mentioned in last year's review, this proposal should provide more information on the curriculum.

Additional comments include:

Since it has already operated for a number of years and there was an audit in 1998, the proposal should provide an assessment of the results to date, what has and has not worked well, and any changes needed in the future.

A more specific listing/description of the curriculum would be helpful for reviewers to relate what is being taught relative to the objectives of the overall Yakima program. (e.g., is the restoration program providing a useful context for environmental education?)

The proposal describes the results of research showing the benefits of environmental education, but does not cite the references for these studies. The proposal needed to deal with the issues of data availability and data quality more directly.

Do the large number of student/teacher visits to spawning grounds constitute an excessive disturbance for spawning fish? What actions are taken to minimize these effects?

The use of \$17,000 for a subcontractor (EcoNorthwest) is not spelled out.

The proposal discusses presumed benefits of the program but does not specify how the program results will be evaluated.

The proposal needed to address how to assess the expected impacts of the education in more detail. Assessing the success of these projects in terms of changed behavior is clearly important. This might be very difficult to measure in a rigorous way, and very few environmental education specialists have either the time, training, or money to conduct such assessments in addition to teaching.

The lack of information on the curriculum was noted in last year's review. Shown here in bold.

ISRP Evaluation: Inadequate proposal, adequate purpose

The proposal needs to better describe its curriculum and the expected benefits to fish and wildlife in the basin. The proposal is not adequately related to watershed councils or other education programs.

Roza-Sunnyside Water Quality and Habitat Proposals

The ISRP recommends not to fund this set of proposals. This set of proposals needs an umbrella document that should include maps that show the location of the proposed projects in relation to the distribution of salmonids in the basin. Planning should be separated from implementation in the proposals. The implementation proposal should be submitted only after the planning has been completed and it can be shown that implementation is justified. Staff from Roza-Sunnyside need to coordinate with fishery biologists in the basin and explicitly show how their projects are going to benefit fish and wildlife in the basin.

ProjectID: 20150

Evaluate Return Flow Recovery

Roza-Sunnyside Board of Joint Control

Short Description: Evaluate the feasibility of recovering water from the Granger Drain for reuse in the irrigation distribution system.

ISRP Recommendation - DNF / CBFWA Tier 3 / ISRP Comparison with CBFWA: Agree-DNF

Sponsor Funding Request = \$35,000 / CBFWA Funding Recommendation = Recommendation:

Do not fund

Comments:

This proposal is the first in a series submitted by the Roza-Sunnyside Board of Joint Control. Many of these proposal contain potentially good ideas for improving the water quality in the Yakima River. All these proposals, however, suffer from common weaknesses. The objectives, relationship to other projects, methods, and description of the facilities and personnel are too poorly developed to convince reviewers that the projects will use the best available science and have a high likelihood of success. Many of these projects are logical and necessary steps for improving and monitoring water quality from irrigation districts. Unfortunately, this has been left to the reviewers to synthesize rather than making a strong argument for the projects.

This proposal provides no context for why this particular site is the highest priority for a feasibility study relative to all other irrigation return flow problems in the basin. How was this particular site chosen? How big is the problem at this site relative to others throughout the basin? Would it be better to have a basin-wide assessment of the irrigation return flow problem and use that to select one or more sites for feasibility studies? Or does such an assessment already exist but was simply not discussed here?

The budget is impossible to assess from the information given (e.g., the relationship between dollars and activities is not shown). The proposal as written does not address

three potential negative impacts. First, if return flows account for 80% of the summer flows, what impact will the diversion of some of that return water have on total flow in the river and how will that impact fisheries? Second, if the water quality of the Granger Drain was better than other return water drains, then the diversion of the Granger Drain could concentrate pollutants and increase the problem. Third, if the return flow in the Granger Drain were reused for irrigation, would it eventually enter the river in a more polluted state? The proposal should show explicit relationships to other projects in the Council's program being funded in the basin. The author should at least try to address the questions that are asked in the proposal evaluation form. The proposal did not provide adequate detail about the scientific techniques to be used, the possibility of alternative solutions to the problem, the ability of a contractor (unidentified) to do the work, or unwanted side-effects of the proposal.

ProjectID: 20151

Landowner Communication Program

Roza-Sunnyside Board of Joint Control

Short Description: Provide water quality and conservation information to landowners through an expanded newsletter, new release, and workshop program. Technical assistance will be make available.

ISRP Recommendation - DNF / CBFWA Tier 3 / ISRP Comparison with CBFWA: Agree-DNF

Sponsor Funding Request = \$11,500 / CBFWA Funding Recommendation = Recommendation:

Do not fund

Comments:

This proposal seems to assume that the benefits of the work are self explanatory. It is difficult or impossible to evaluate the proposal from the small amount of information that is provided. For example, the plan to "show the relationship between water quality and irrigation" is unclear. The specific message intended for the communication program is not described. The relationship to the larger Fish and Wildlife Program is also not adequately discussed. The proposal is a list of products with little explanation of their content or benefit to fish and wildlife.

The abstract describes a communication program that appears to be entirely focused on agricultural problems. We question whether the Council's fish and wildlife program should fund projects that are not explicitly tied to a benefit for fish and wildlife.

Objective 2 states, "The workshops are intended as a mechanism to set the implementation process in motion." What implementation process does this refer to? It should be described in the proposal. Objective 3 appears to be a responsibility of agricultural agencies. The expected results in terms of change of behavior or practices is not clearly stated. How will the impact of the information be assessed?

The proposal needs references or documentation to support the idea that this kind of program would be effective. Of the three main objectives, only the first was specific. The second and third objectives could have been better described by explaining more about the topics and presenters for the workshops and by describing the content of the video

“Water, Food, and You.” In addition, the proposal needs a better description of the audience (number of people being contacted), the public demand for the information, and how to judge whether the project is successful or not.

ProjectID: 20152

Improve Yakima River Water Quality By Incorporating Buffer Strips

Roza-Sunnyside Board of Joint Control

Short Description: Improve the water quality discharging to the lower Yakima River from the RSBOJC service area. This will enhance the quality of the existing wetlands and wildlife habitat areas that have developed in the lower Yakima River Basin.

ISRP Recommendation - DNF / CBFWA Tier 3 / ISRP Comparison with CBFWA: Agree-DNF

Sponsor Funding Request = \$161,000 / CBFWA Funding Recommendation = Recommendation:

Do not fund

Comments:

This proposal does a good job of describing the water quality problems created by irrigated agriculture in the Yakima River. It does not clearly show why buffer strips are a solution to the problem. How much of the water quality problems are due to surface runoff and erosion that would be improved by buffers? The RSBOJC has collected baseline data on water quality (Section 8 f of the proposal) and that baseline information should have been presented in the proposal along with a quantitative target for improvement. The objects are really tasks—the purpose of the project is not to define buffer strips but to improve water quality. The author should review the proposal evaluation criteria and try to answer or at least acknowledge the questions asked. This is probably a good idea but it is not adequately explained or justified.

The proposed criteria for identifying problem areas and establishing priorities for enhancing buffer strips are not specified. The lack of information provided makes it impossible to judge whether the applicants do, in fact, have the technical expertise to carry out the work. It is not clear why this particular area within the basin is the appropriate place to focus riparian efforts. Its significance relative to the rest of the basin and the distribution of salmonids is not clear. The proposal states that filtration by buffer strips is working well in parts of the system but gives no details of how this effectiveness has been or would be evaluated. The methods for surveying drainageways, identifying problem areas, ranking priorities for the work, or developing prescriptions for vegetative recovery at each site are not given. Goals for vegetative recovery (e.g., species) and width of buffers necessary to be effective are not described.

The proposal states that some temporary employees may be hired. However it is unclear how the budget was developed if the staff needs, land purchase requirements, and amount of land to be restored are unknown. The proposal needs to discuss alternative approaches to the problem and why the proposed approach is the best given the potential for unwanted side effects. Although the staff appears to have engineering expertise, the proposal did not indicate that they would have the necessary biological expertise or

familiarity with the appropriate methods to conduct the initial biological assessment or the subsequent monitoring. It seems a more reasonable approach would be to first complete an inventory and mapping of problem areas, restoration inadequacies, priorities, and necessary land acquisitions. These results, in turn, could be used to prepare a subsequent proposal and a more detailed budget based on specific recovery prescriptions for each high-priority site.

ProjectID: 20153

Construct Sediment Settling Basins

Roza-Sunnyside Board of Joint Control

Short Description: Improve the quality of water discharged into the Yakima River from major drainage channels within the RSBOJC service area by construction of sediment settling basins.

ISRP Recommendation - DNF / CBFWA Tier 3 / ISRP Comparison with CBFWA: Agree-DNF

Sponsor Funding Request = \$264,500 / CBFWA Funding Recommendation =
Recommendation:

Do not fund

Comments:

This project is probably a good idea and if successful might have a positive impact on the Yakima's water quality. However, it is not adequately explained or justified. Projects 20150, 20152, and 20153 all involve improvements in water quality. An umbrella proposal is needed to provide a rationale for the selection and sequence of proposed projects expected to provide the greatest benefits. The fact that the same rationale is repeated for each of the RSBOJC projects indicates both the need for an umbrella and the lack of detail justifying the individual projects under the general idea of improved water quality. How do these projects collectively constitute the best approach for addressing water quality problems? What alternatives were considered and why were these particular projects chosen?

The proposal predicts the amount of silt that could be retained by settling ponds but provides no documentation or references for where the numbers came from. There was not enough detail in the objectives or methods to determine whether the project was using the best available scientific methods.

Like the previous proposal (20152) this one seems to build a budget for design and construction of projects before enough planning has been done to choose the sites and to identify the site-specific requirements and costs for the work. The proposal merely states that designs will be made for "2 to 3 prototype basins." Why this number? Where should they be located and why are these the best sites of all possible sites in the basin? How can personnel, land acquisition, and design and construction costs be projected in the proposed budget if the number of sites, locations, land ownership, etc. are unknown? As in #20152, it would seem more appropriate to first propose an information collection/planning phase for this project and then submit a subsequent proposal based on the identification of site-specific engineering and construction requirements developed in the plan.

The proposal indicates that water quality results will be monitored and compared to baseline data. But it does not specify what parameters will serve as indicators, how the monitoring would be designed, or what sites and information will constitute a baseline for comparison. The author should review the proposal evaluation criteria and at least try to answer or acknowledge the questions. The RSOBJC has collected water quality information (mentioned in other projects). Some of that information should have been presented and target reductions in sediment loads given.

ProjectID: 20154

Improve Water Quality Monitoring Program

Roza-Sunnyside Board of Joint Control

Short Description: Enhance the water quality monitoring program that is being conducted by RSBOJC. By increasing the sampling locations, frequency of sampling, and analytical work, the effectiveness of the water quality improvement programs can be monitored better.

ISRP Recommendation - DNF / CBFWA Tier 3 / ISRP Comparison with CBFWA: Agree-DNF

Sponsor Funding Request = \$161,000 / CBFWA Funding Recommendation = Recommendation:

Do not fund

Comments:

This project is a good idea. This proposal does an adequate job of describing the fishery problem they are trying to address and the background for the proposed solution. The major weakness of this proposal is that it does not support the ideas in the proposal with enough detail and documentation to convince reviewers that the project has been well thought out and will succeed. The availability of water quality data could be useful to a variety of other projects in the basin. However, we question the appropriateness of BPA funding through the Fish and Wildlife Program. Possibly part of it could be funded through the FWP, but it seems agricultural agencies have a responsibility to monitor their contribution to the pollution of the Yakima River. The sampling program should be described better. In addition, there needs to be a better description of how the information will be specifically used. The project should be explicitly related to the needs of the other RSOBJC projects and to other projects in the basin.

If this project is needed primarily because of the proposed water conservation and water quality projects, then funding of this work should be contingent upon acceptance of those proposals. Again this and the other projects should be integrated in an umbrella proposal. The umbrella should assess alternative approaches and build a rationale for a particular combination and sequence of proposed water quality activities by the RSBOJC.

This project like others of the RSBOJC is described as a demonstration project. But it does not specify why a "demonstration" is needed, who the audience will be, or why a limited demonstration is the best approach to improve conservation over the long term. The small proportion of the budget (5%) allotted to compiling and publishing results suggests data analysis and interpretation are not a high priority, which raises questions

about use and accessibility of the results. It is not self-evident that expanding the RSBOJC effort is necessarily the most cost effective alternative as opposed to relying on other agencies (p. 4401), particularly if outside consultants must be hired to do the analyses. While the proposal may represent the best option, more information should be given to show why other agencies are not better equipped to do the work.

The design of the monitoring program is only vaguely described. While some of the major questions of the monitoring effort are discussed, the current monitoring design that this proposal would augment is not described. How are sampling sites chosen? What level of replication is required? What is the frequency of sampling? Are there any results from the current monitoring effort to demonstrate the kind of analyses that are intended and the utility of the results to date? More technical details and references should have been included in the methods section to show the project would use the best available scientific techniques. Likewise, the future plans for using the baseline data to judge success or failure of the program should have been much more developed. Personnel for the project are listed by name, but information is not given that allow reviewers to evaluate their qualifications.

ProjectID: 20155

Inventory On-Farm Irrigation Practices

Roza-Sunnyside Board of Joint Control

Short Description: Take an inventory on present irrigation practices to determine number of acres that are rill and flood irrigated. This inventory will determine which areas that need to be targeted with informational and educational material.

ISRP Recommendation - DNF / CBFWA Tier 3 / ISRP Comparison with CBFWA: Agree-DNF

Sponsor Funding Request = \$9,600 / CBFWA Funding Recommendation = Recommendation:

Do not fund

Comments:

The major weakness of this proposal is that it does not support the ideas in the project with enough detail and documentation to convince reviewers that the project has been well thought out and is justified. The technical background for collecting this information needs to be much better developed. For example, the objectives move directly into comparing rill versus flood irrigation, but the significance of these different kinds of techniques on the problem was never introduced. The programmatic justification could have been much improved by including more detail on the technical background and the linkage to other projects. This project seems to be a critical part of the whole package submitted by the Roza-Sunnyside Board of Joint Control but this relationship is not described. This should have been described in both the rationale sections of the proposal and in the section on information transfer. The proposal also fails to discuss alternative approaches and unwanted side effects of the project, if any, or the reason why BPA should fund this project.

The general rationale for this project suggests it should be a precursor, or at least a part of an overall planning phase for RSBOJC water quality projects. If this information is

needed to know how much sediment can be conserved and how much farming practices contribute to the problem, it would seem the inventory should precede those projects that presuppose which actions are most needed. This proposal might be another useful component of an initial planning phase for selecting sites and budgeting costs for RSBOJC water quality projects.

Unfortunately, the proposal does not provide sufficient information to evaluate how the survey will be conducted, how the information will be collected, or how the results will be analyzed or used to make decisions. What questions will be asked? Will this be a statistical sample survey or a census of all landowners? How will the survey be designed? Who will do the work? The explicit connection to project 20151 is good. The connection to the Fish and Wildlife Program and benefits to fisheries need to be more explicit.

ProjectID: 9901200

Coordinate/Facilitate Watershed Project Planning/Implementation

Kittitas-Yakima Resource Conservation and Development District

Short Description: Enhance Yakima River Watershed Interagency Council's cooperative efforts to implement Yakima River Watershed projects and activities which are compatible with biological needs of salmon, steelhead and other fish and wildlife.

ISRP Recommendation - Delay Funding / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-until corrected

Sponsor Funding Request = \$70,496 / CBFWA Funding Recommendation = \$70,496
Recommendation:

Delay funding until deficiencies are corrected. Specifically, if they are doing the coordination described in the proposal, why don't any of the habitat restoration proposals in the basin mention the YRWIC? What specific projects are being implemented under objective 2? They should list the limiting factors mentioned on page 12 and describe how the projects they endorse address those limiting factors.

Comments:

The proposal describes an important project that could have important positive effects on the salmonid habitat in the Yakima Basin. The proposal gives a good general description of the relationship to other projects. However, it lacks specificity. There are many habitat projects either ongoing or proposed in the Yakima Basin. The proposal should have stated some specific examples of its coordination and evaluation role with a few selected examples of those projects. The proposal should have given more explicit examples of accomplishments. For example some explicit information on the matrix would have been helpful. What gaps in habitat activities were identified through the matrix? What limiting factors have been identified and how are they being addressed? Although the idea is good, the proposal is not adequate.

It is not always apparent where the YRWIC has its own functions separate from those of the individual member agencies that participate. For example, does Objective 2 imply that the YRWIC is going to implement its own habitat projects or does it simply play a supportive role by endorsing those projects it considers best? Will the YRWIC develop its own planning strategy, and if so, how will this differ from those of the individual

member agencies? Will the YRWIC develop its own scientific criteria for monitoring effectiveness (e.g., Objective 5)? What process is used by the Interagency Council to make decisions, and how are conflicts resolved between the Council and the priorities of its individual members?

The proposal is primarily administrative in its focus. It does not provide an indication of the criteria it will use to set project priorities (other than a vague reference to "limiting factors analysis"), what scientific criteria will be used to monitor effectiveness of the projects, or how the results and activities of the Council itself will be evaluated. The emphasis of the Watershed Information Center seems to be a bookkeeping function (e.g., where projects have and have not been completed) rather than the evaluation function implied by Objective 5.

The council has been working for several years, but no concrete results are offered to illustrate how the council is providing important benefits that should continue to be supported through this proposal. The objectives imply some scientific role for the YRWIC, but most of the discussion focuses on an administrative and political (e.g., project endorsement) role. This makes it difficult to interpret what the YRWIC intends to provide other than "coordination."

Although it appears to have agency support, it is not clear whether the YRWIC has decision making authority, or is a clearing house for information or is a forum for public participation. This is further confused by the authors noting that the Yakima River Watershed Council, which the YRWIC is linked with, has been disbanded. We are not told what replaced it, and whether that changes the role of the YRWIC. It also was not clear until the very end of the proposal why the Ki-Yak was submitting this proposal as opposed to some other group. Most of the objectives identified in the proposal seem justified, but the provisions for evaluating the success of the project seem poorly defined.

ProjectID: 20547

Yakima Subbasin Habitat/Watershed Project Umbrella

Yakama Indian Nation

Short Description: Umbrella proposal summarizing nine projects intended to promote normative Yakima Subbasin ecosystem by protecting and restoring habitat for all life stages of anadromous fish and wildlife.

ISRP Recommendation - na / CBFWA Tier na / ISRP Comparison with CBFWA: Umbrella Proposal

Sponsor Funding Request = \$ / CBFWA Funding Recommendation =

Recommendation:

NA - Umbrella Proposal

Comments:

This umbrella described the relationship of this work to the Fish and Wildlife Program. However, it is unclear how the habitat projects under this umbrella relate to other habitat work described in other restoration proposals in the basin (e.g., see #20526) or to alternative restorative actions that could have been but were not chosen here. The proposal provides a brief overview of the individual projects included in this umbrella, but does not provide adequate background to understand why these particular projects were chosen or how they collectively will achieve some overall goal for the Yakima subbasin. Perhaps most significant is the fact that the umbrella provides no description of its goal or objectives other than listing the separate objectives or activities of each individual project.

No technical background is given for the projects chosen under this umbrella. Occasional statements about limiting factors within the individual project descriptions are not backed by data or references and appear as a general listing of problem areas rather than technical conclusions establishing the priorities for action. The proposed Yakima Subbasin assessment for this umbrella would seem to be a necessary prerequisite for defining limiting factors and identifying the highest priority restoration projects. In the case of the Satus watershed, an assessment was apparently completed in 1998, yet because the results are not discussed, it provides no technical support for the particular restoration activities proposed or previously completed. This raises doubts about whether the proposed subbasin assessment would in fact be used to support restoration planning.

The umbrella proposal should clearly state the long-term goal for the basin's salmonid resources using measurable performance criteria, what is preventing achievement of that goal, and the specific role of this set of projects in removing those obstacles. The umbrella proposal should explicitly show how the proposed habitat improvements will support the supplementation projects, that they address the high priority limiting factors identified in previous work, the relationship between those limiting factors and the distribution of naturally reproducing salmon and steelhead and the positive cumulative benefits expected when all the projects are completed. Habitat restoration projects appear to focus on steelhead, but supplementation is focusing on spring chinook. Does that mean habitat is not limiting natural production of spring chinook?

The hypothesis that “suitable but underutilized habitat will be available to supplementation fish returning to the Yakima Subbasin (p. 4438)” suggests that the number of returning spawners rather than the quality of juvenile rearing habitats currently limit fish production. What evidence supports this?

Project #9705100 listed as “Yakima Basin Side Channels” is the same number listed for a project on p. 4264 (Section 3) entitled “Improve adult spawning habitat and juvenile rearing/overwintering survival.”

ProjectID: 9603501

Satus Watershed Restoration

Yakama Indian Nation

Short Description: Enhance and protect summer steelhead spawning and rearing habitat by restoring the ecological function of the Satus Creek watershed.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$502,396 / CBFWA Funding Recommendation = \$472,252

Recommendation:

Fund for one year. Subsequent funding contingent on correcting the noted deficiencies.

Comments:

This was a well written and convincing proposal. The program appears to have many strengths, including broad scale interagency support, participation, and active monitoring and assessment. It also has several significant weaknesses. The proposal could have been improved by providing more scientific citations and documentation. The programmatic needs and goals could have been supported by citations supporting the decline in populations abundance, changes in the watershed, or the watershed assessment. The methods section contained good general descriptions, but could have been supported by scientific references to show that these were based on the best available scientific techniques.

A watershed assessment has been completed for the Satus Watershed, but the results are not summarized. The proposal also refers to historical data that have been analyzed showing “how land uses have contributed to fish habitat degradation” (p. 4455). But the findings of this analysis (e.g., which land uses have caused what kinds of problems) are not presented. From the information provided, it is unclear which limiting factors are most critical and, if corrected, would likely yield the greatest benefits. The rationale for the proposed array of treatments versus others that might have been chosen is not given.

Although the proposal lists many monitoring activities and variables, the specific questions to be answered are not identified. The proposal lumps methods for restoration with those for monitoring effects. The overall treatment design and monitoring design should be described individually so that the adequacy of the proposed activities can be evaluated. The proposal also does not provide enough information about the sampling design to know whether the monitoring program will be able to interpret the effects of the watershed treatments. How will the effects of restoration be distinguished from the effects of environmental change? How will the monitoring design allow evaluation of results from many different but simultaneous treatments? That is, how will effective treatments be distinguished from ineffective ones so that timely changes can be made in the restoration program? The proposal gives a laundry list of restoration and monitoring activities but does not provide an overall structure to indicate how these activities fit together.

The proposal notes that smolt populations have been monitored low in the system to estimate total steelhead production (p. 4457). But it is not clear whether this was a one-

time activity or whether this sampling will continue. The proposal implies that population changes will be monitored by density changes in a stream reach before and after treatment (p. 4458). Such results may simply document changes in fish distribution following habitat manipulations rather than actual changes in production. The project proposal would move large woody debris from the flood plain into the active channel. Is there information to suggest that these changes will be beneficial? Are there risks associated with the loss of large wood from the flood plain?

The project lists numerous ongoing restoration and monitoring activities (since 1996), but does not offer any assessment of the results. This proposal seems to identify many restoration activities that are likely to provide some benefits. But it does not provide sufficient detail to evaluate their overall effectiveness relative to other possible prescriptions. At a minimum, revision is needed to further discuss the proposed restoration and monitoring designs relative to the scientific literature, the results of the watershed assessment, and any initial findings from the work that has already been completed in the watershed.

The proposal adequately addresses questions 2,3,4,and 5 as requested in the proposal solicitation packet. Question 1 and 6 needs more explanation. The author does not give measurable performance criteria for the projects objectives. That should be corrected. The proposal states that Satus Creek “is one of the most intensely monitored watersheds of its size in the Western United States.” Given the apparent availability of information the proposal should provide some of that data in support of its proposed activities, or to show the results of past actions. Vague general statements about the condition of habitat and the improvements achieved should be replaced with real information. The proposal should state explicitly the goals for Satus Creek in terms of measurable criteria (fish numbers and water quality), what specifically is preventing the realization of those goals, and how the proposed activities will remove the obstacles.

ProjectID: 9705100

Yakima Basin Side Channels

Yakama Indian Nation - Fisheries

Short Description: Protect, restore and reestablish access to productive off-channel rearing habitats, and protect and reconnect floodplains associated with the mainstem Yakima and Naches Rivers.

ISRP Recommendation - Delay Funding / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-until corrected

Sponsor Funding Request = \$801,673 / CBFWA Funding Recommendation = \$601,673

Recommendation:

Delay funding until the proposal is redone including: (1) the technical justification for off-channel work relative to other potential restoration activities, and (2) an identification and description of priority off-channel sites through #9704700, #20117, and/or objective 1 proposed here. These results should be used to prepare implementation objectives based on the sites in greatest need of protection or restoration. The budget request for

easements/acquisition and construction work could then be tied to specific sites and actions.

Comments:

This proposal does an adequate job of identifying the fishery problem in the basin and explaining how this project will address that need. It also makes a good connection to the FWP and the goals of other fish restoration projects in the basin. The major weaknesses of the proposal are lack of detail and documentation. In particular, the proposal needs to do a better job of documenting the scientific foundations for the strategy that is being proposed. It also needs an explicit discussion of why this implementation strategy was the most appropriate for the area and whether there would be any unwanted side effects. The methods and monitoring sections could have also been supported by more reference to scientific methods. The discussion on the budget was inadequate.

The proposal seems to lay out a reasonable sequence of activities leading from planning and assessment to restoration to monitoring. But it is not clear how the budget can be proposed before the assessment is completed? How is the \$500,000 for purchases and easements defined if the areas in greatest need of protection or restoration have not been identified? This is particularly confusing when project #9704700 funded in 1997 was to “to quantify inaccessible off-channel habitat abutting the mainstem Naches and Yakima rivers....” If this is supposed to provide the “basis for habitat restoration and protection prescriptions,” why are the results not presented here to identify funding needed for project implementation under this proposal? The planning proposed in Objective 1 sounds like it overlaps with the information that #9704700 was supposed to provide. In addition, the overall assessment of off-channel habitats proposed in #20117 also seems to overlap with this proposal.

The lack of site-specificity for the proposed project is further confused by the abstract that lists five reaches for project activity. Yet none of these areas are even discussed in the main body of the proposal! The design of the monitoring program is not described. It is unlikely that fish surveys within reconstructed areas will provide much information about effectiveness. These data will only demonstrate whether or not fish use off-channel habitats. The amount of money dedicated to monitoring is not described in the budget.

While this project seems to offer what could be some very useful restoration work, it does not provide sufficient background to evaluate the budget, particularly the figures for conservation easements and land purchases. Moreover, the amount of effort to be directed toward restoration and construction versus simple purchase and protection is not spelled out. The relationship to other similar work proposed in this and other Yakima proposals is confusing. It is not clear whether there is redundancy between this and other proposals noted above or how these relate to one another. Assuming redundancy is not a problem (but needs to be clarified), this project would seem better designed if it were to be rewritten to focus on (1) the technical justification for off-channel work relative to other potential restoration activities, and (2) an identification and description of priority off-channel sites through #9704700, #20117, and/or Objective 1 proposed here. These results should be used to later prepare an implementation proposal based on the sites in

greatest need of protection or restoration. The budget request for easements/acquisition and construction work could then be tied to specific sites and actions.

The proposal indicates it is related to the supplementation project, however that connection is too vague. The project objectives do not include measurable performance criteria.

ProjectID: 20117

Yakima River Subbasin Assessment

Yakama Indian Nation

Short Description: Compile and evaluate existing fisheries and watershed information and perform field verification to prioritize protection, restoration and analysis needs throughout the Yakima River Subbasin, based on potential benefit to the fisheries resources.

ISRP Recommendation - Delay Funding / CBFWA Tier 3 / ISRP Comparison with CBFWA: Agree-DNF

Sponsor Funding Request = \$235,059 / CBFWA Funding Recommendation = Recommendation:

Delay funding until deficiencies are corrected

Comments:

A subbasin assessment is clearly needed. However, the proposal is vague about what it specifically plans to do. The proposal does not define the key questions or concepts that will be used to integrate disparate layers of information. For example, it is not clear how the list of social-economic studies, legislation, maps, etc. will be integrated with the other physical and biological information.

The background material on hydrologic conditions in the subbasin is not the most relevant information needed to justify this proposal. The background section should discuss the technical literature regarding watershed assessment procedures and results: Where have they been used, what alternative methods have been tried, which ones have been most and least successful? From this background, the proposal should define the kind of assessment most appropriate for the Yakima subbasin. It is unclear whether the watershed assessment proposed here would overlap with the assessment of off-channel habitats described in #9705100 or the 1997 work under #9704700.

The Proper Functioning Condition methodology, which relies on expert opinion, needs to be discussed and evaluated relative to alternative stream/riparian assessment techniques that are available. Considerable work has been done on evaluating stream and riparian habitat conditions throughout the Pacific Northwest. There is not scientific consensus about the PFC approach. The budget for the subcontract needs to be spelled out. It is the bulk of the project, yet the elements of the subcontract are not itemized. Most of the personnel assigned to this work would be hired under the subcontract. It is not possible to evaluate qualifications because the individuals have not been identified. Would two different teams or a single team be used for the work proposed under the Klickitat and Yakima subbasin assessments?

The criteria for establishing habitat priorities and “potential fisheries value” from the assessment data need to be described. The proposal should build a rationale for what data will be integrated to define high priority areas for protection. The use of the proposed assessment for developing future proposals and restoration activities should be discussed. Will ongoing projects be re-evaluated in light of the results? The proposal was submitted as a information dissemination/database proposal, but failed to directly address many of the criteria by which these kinds of proposal would be judged. These include describing the mechanism for assuring quality control, how widely used the assessment would be, and how the impact of the information would be measured.

The budgets for the Yakima and Klickitat assessments are the same, but the Yakima is significantly larger. Shouldn't the limiting factors have been determined before the supplementation program was implemented?

ProjectID: 9705000

Little Naches River Riparian & In-channel Enhancement Project

Yakama Indian Nation - Fisheries

Short Description: Improve and restore degraded habitat and riparian conditions in the Little Naches River through the placement of trees and boulders in the channel to enhance rearing area and retain spawning gravels, construction of bank deflectors to reduce erosion . . .

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 2 / ISRP Comparison with CBFWA: Agree

Sponsor Funding Request = \$96,142 / CBFWA Funding Recommendation = Recommendation:

Fund for one year. Subsequent funding contingent on correcting the noted deficiencies.

Comments:

This proposal does an adequate job of identifying the fishery problem in the basin and explaining how this project will address that need. It also makes a good connection to the FWP and the goals of other fish restoration projects in the basin. We could find no explanation, however, for why the Little Naches is most appropriate for these monies rather than some other tributary. The major weakness of this proposal was a failure to provide details, especially in discussing the use of supplemental monitoring, and how the success of the project will be measured. The proposal also did a less than adequate job of explaining how unwanted side effects, if any, were considered. The proposal needs measurable performance criteria.

The proposal notes that two watershed assessments and much monitoring data are already available. Instead of requesting funds for reviewing information that already exists, the results of this prior work should be an integral part of the proposal itself either to build a case for collecting new information in areas where data are lacking or to identify the particular limiting factors, restoration priorities, and sites that this proposal will now address. If more information is needed before limiting factors can be identified, then it may be premature to request funds for instream and riparian treatments.

Little information is given to evaluate whether the proposed instream or riparian activities would be the most beneficial relative to other actions that could be taken. It is unclear whether there are passive alternatives to the proposed restorative measures. The proposal does not indicate whether the sources of habitat/riparian losses have been corrected. The sampling protocols and designs that would be used to collect additional information about riparian and habitat conditions (“supplemental monitoring”) are not described. In this case “monitoring” refers to a characterization of the current status of habitat. The proposal also does not describe any longer term monitoring design or methods to assess basin-wide effectiveness of the restoration projects. No information is provided about the qualifications of the individuals who would be responsible for this work. While the proposed actions could well be beneficial, this cannot be determined from the information that is provided.

ProjectID: 9705300

Toppenish-Simcoe Instream Flow Restoration And Assessment

Yakama Indian Nation

Short Description: Identify extent of anadromous populations, identify land status, characterize habitat and discharge; model irrigation use; restore instream flows by land lease or purchase and/or water substitution; modify irrigation diversions to mimic natural runoff

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$231,978 / CBFWA Funding Recommendation = \$163,544

Recommendation:

Fund. OK for a multi-year review cycle, ISRP should review again for FY 2002.

Comments:

This is an example of a well-written habitat restoration proposal. It is a generally well written and convincing proposal. The program appears to have some strengths, and the programmatic needs and description suggest this project should have high priority. The synthesis of information collected from last year’s operation suggests that the project has a high likelihood of identifying and making necessary changes in the watershed. The proposal could have described more explicitly alternative approaches to the problem and why they were rejected, and unwanted side effects and how they were considered.

This proposal offers a well-integrated set and logical sequence of objectives based on a conceptual approach that relates food webs and survival of diverse steelhead life stages to the “natural” discharge regime. It provides a good technical review and rationale for the fishery problem and chosen research approach. However, more citations are needed. A summary of results from the project to date could have provided additional support for continuing the work proposed here. For example, if a baseline of age structure and population densities has been established, these results could have been reported as an example of the sampling methods and performance measures. The rationale and importance of this project relative to other ongoing or potential restoration activities in the basin is not evaluated. This is not a fatal flaw since the chosen research design is supported by a clear conceptual approach.

The specific methods chosen for each objective should be better defined and supported. It is not clear, for example, whether the Proper Functioning Condition is the best method for riparian assessment, what kind of spawner surveys will provide a reasonable estimate of adult steelhead, or what the difficulties might be in estimating juvenile abundance from snorkel counts. The tradeoffs of alternate methods should be discussed relative to the scientific literature or current project results to support the chosen alternatives. There is very little description of the sampling design or sensitivity of the analyses to evaluate whether the monitoring effort has a reasonable chance of detecting changes associated with improved flow. It is also not clear how the monitoring design will be able to distinguish the effectiveness of flow restoration measures proposed here from the effects of active restoration measures proposed for the upper Toppenish watershed (#9803300).

The rationale for the estimated budget for purchasing land is not clear, particularly since the priority lands and water for acquisition presumably will not be decided until the Project Management Plan is prepared.

ProjectID: 9803300

Restore Upper Toppenish Creek Watershed

Yakama Indian Nation

Short Description: Moderate flow regime in Toppenish Creek by increasing the retentiveness of natural soil water storage areas, such as headwater meadows and floodplains, following prioritized plan generated by FY98-99 analysis.

ISRP Recommendation - Delay Funding / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-until corrected

Sponsor Funding Request = \$207,003 / CBFWA Funding Recommendation = \$194,583

Recommendation:

Delay funding until a watershed assessment is complete and a site plan and systematic evaluation of the limiting factors to justify the activities has been prepared.

Comments:

The proposal provides some useful context regarding factors affecting the storage capacity of watersheds. However, it jumps from this textbook discussion of watershed processes to a list of objectives and specific methods for Toppenish Creek. The proposal does not identify the specific problem areas, limiting factors, or rationale for the particular activities listed. It is therefore impossible to evaluate whether the proposed actions are the most useful among all others that might otherwise have been chosen.

The proposal notes that a watershed assessment was initiated in late 1998. These results are needed to provide a site-specific restoration plan that is based on the limiting factors and source areas contributing to specific problems in Toppenish Creek watershed. The proposal does not discuss any potential risks of the treatment methods. The proposal should refer to the technical literature to give some indication whether the proposed methods have been effective elsewhere or are likely to be effective in this watershed. The proposal does not discuss whether there are passive alternatives to the proposed headcut stabilization activities and instream retention structures.

The program appears to have many strengths, including the expansion from the Satus Creek restoration efforts and emphasis on monitoring. The proposal could have been improved by providing more scientific citations and documentation. The programmatic needs and goals could have been supported by citations supporting the decline in populations abundance, changes in the watershed, or the watershed assessment. Objectives were stated in terms that were measurable, but they were primarily focused on structural changes in habitat. These are easier to measure in the short-term than population characteristics, but ultimately the success of the project must be judged by increases in the production, distribution, and diversity of fish in the watershed. The proposal could have described more explicitly alternative approaches to the problem and why they were rejected. It is not clear how a budget for this project could be developed without an explicit plan for the number of sites and treatments needed. It would seem logical that the watershed analysis should be completed first to provide a foundation for a detailed restoration plan. If these results are not yet available, then a plan development phase may be needed for this project before trying to implement the specific activities described here.

ProjectID: 9803400

Reestablish Safe Access Into Tributaries Of The Yakima Subbasin.

Yakama Indian Nation - Fisheries

Short Description: Reconnect over 100 miles of habitat in ten tributaries that have adequate flow, by building fishways and screens at human-made barriers.

Protect reaccessed habitat through fencing and property purchase.

ISRP Recommendation - Fund in Part / CBFWA Tier 1 / ISRP Comparison with CBFWA: Partially agree-fund in part

Sponsor Funding Request = \$771,918 / CBFWA Funding Recommendation = \$771,918

Recommendation:

Fund in part to finish objectives 1-4, development of a watershed assessment and an implementation plan. Upon completion of the plan, resubmit a proposal with specific activities fully justified by the information gained from objectives 1-4.

Comments:

This proposal does a good job of defining the fishery and related habitat problems and identifying a practical solution. Specifically, the proposal provides a strong rationale for restoring passage and defines priority areas where the work is needed. However, the rationale that reestablishing tributary habitat will replace lost mainstem habitat is not obvious (p. 4558). A discussion of the salmon life histories that would likely be restored as a consequence of tributary access is needed. The relationship between potential spawning and rearing habitat areas also needs to be clearer. A map of project/tributary locations is needed to better understand the proposed actions.

The monitoring design is not adequately described. There is also some confusion between local and basinwide measures of success. The proposal suggests that it will test the hypothesis that the ratio of adult recruits per spawner will increase as a result of the proposed work. But elsewhere the proposal states that “because project monitoring will

typically start with zero fish . . . only very basic monitoring is proposed.” This latter statement focuses on site-specific monitoring of the tributaries where passage is improved, while the hypothesis suggests a broader basinwide evaluation of salmon productivity. The proposal notes that survival estimates from outmigration data at the Chandler facility are possible but will be complicated by supplementation efforts underway in the basin. These problems raise doubt that the basinwide success of this effort can be fully evaluated due to other ongoing work in the basin. This may be more a reflection of the design and sequence of supplementation efforts than the passage work proposed here, but it raises concerns about the ability to learn from simultaneous treatments throughout the basin without adequate controls to evaluate the efficacy of each treatment effort. At the very least, the specific monitoring design proposed here needs to be described further.

Little or no information is provided to evaluate the adequacy of personnel/facilities for construction of screens and fishways. The proposal includes \$500,000 for construction costs and easements that cannot be defined (other than Wilson Cr.) until the barrier reports and action plans have been completed. It would seem more logical to divide this proposal into two phases, submitting a separate implementation proposal after the detailed assessments from objectives 1-4 have been completed.

The proposal was submitted as a watershed council/model watershed proposal, but it may be more appropriate as an implementation and management proposal or even as a construction project. Sixty-five percent of the total budget (\$500,000) was allocated to construction costs. The proposal could be improved by providing better references or citations for objectives where data were to be collected or analyzed. Given the large amount of money proposed for construction activities, the proposal should have also provided more detail on how the construction would be managed. This would help convince the reviewers that the best available scientific methods will be used and that construction contracting and scheduling would proceed as proposed.

ProjectID: 9206200

Yakama Nation - Riparian/Wetlands Restoration

Yakama Indian Nation

Short Description: Continue implementation of YIN Wetlands/Riparian Restoration Project by protecting and restoring riparian and wetland habitat along anadromous fish bearing rivers and streams in the agricultural area of the Yakama Indian Reservation (~2,500 acres/year).

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$1,750,000 / CBFWA Funding Recommendation = \$1,550,000

Recommendation:

Fund for one year. Subsequent funding contingent on correcting noted deficiencies.

Comments:

In terms of budget, longevity, and potential benefits, this seems to be one of the more important projects in the subbasin. The proposal provides a useful description of the

programmatic background and history of the project. But it is disappointing for its lack of technical detail, description of ecological objectives, and evaluation of the work completed to date. The proposal seems to define success primarily by the total number of acres that have been acquired and/or treated (e.g., doing what the plan said it would do) rather than by the effectiveness of the treatments (e.g., have restoration efforts met their ecological objectives?). It is impossible to evaluate effectiveness to date on the basis of the information provided. Furthermore, it is not clear whether the monitoring program itself will be sufficient to supply this information.

The proposal needs to define measurable habitat objectives. A technical description of the HEP approach, its strengths and weaknesses, should be provided to justify why this is the appropriate measure of habitat values and whether this provides a sufficient scientific basis for monitoring ecological success. It is not clear from the proposal what cover types the program (and this proposal) is intended to restore, how quantitative objectives for each cover type were determined, and how successful re-establishment of these types will be evaluated.

The proposal emphasizes wildlife values, particularly waterfowl. It is unclear whether values established for waterfowl will support or undermine values for anadromous fish. The proposal suggests that this project has integrated wildlife restoration activities with those for anadromous fish (p. 4581), but does not show how this has been accomplished. There is no mention of monitoring associated with fishery values. The monitoring design cannot be evaluated from the information provided. The methods used in the past or proposed for future restoration activities are not discussed in detail. Alternative methods, including passive versus active techniques, are not evaluated.

The proposal has a specific objective for adaptive management. Yet, despite acquisitions going back to 1993 and continued restoration activity since 1995, the proposal provides no data to demonstrate that efforts to date have been successful or whether changes in the 8-year-old project plan are warranted. The budget includes more than \$1 million for capitol expenses. A better description of the items that will be purchased is needed. Purchase of “equipment such as tractors, seed drills, etc.” only gives a vague impression of how the money will be spent. How much for property? How many tractors and seed drills?

ProjectID: 20003

Enhance Fish Habitat By Improving Water Quality

South Yakima Conservation District

Short Description: Eliminate sediment/nutrient loading of the Yakima River due to agricultural and dairy runoff and poor irrigation water management. Provide landowners within the watershed technical assistance and cost-share to achieve Best Management Practices.

ISRP Recommendation - DNF / CBFWA Tier 3 / ISRP Comparison with CBFWA: Agree-DNF

Sponsor Funding Request = \$200,000 / CBFWA Funding Recommendation = \$
Recommendation:

Do not fund, inadequate programmatic justification.

Comments:

This proposal does an adequate job of identify a problem and proposing a solution. The technical background was well explained and supported by references. The major weakness of the proposal is that it does not attempt to explain the relationship to regional programs in the FWP or to other projects in the basin. The proposal makes no case for why BPA should fund the proposal. We strongly recommend that the writers review the FWP and other related activities in the basin to justify the proposal. The proposal would also be much improved by directly addressing the ISRP criteria for this kind of the proposal.

While it is clear that the water quality problems are acute, how important are the proposed BMPs relative to other actions that have been or could be undertaken in the basin? The specific BMPs that will be used and their relative benefit to overall sediment and pollution inputs is not clear. The proposal offers no specific design for evaluating effectiveness other than a vague reliance on an unspecified "existing water quality monitoring program." It does not discuss whether project staff will continue to monitor compliance of individuals who commit to the program for 10 years.

Section 8a is a listing of unconnected facts. The proposal should describe existing fish distribution in relation to the projects. The objective is to improve water quality. Measurable criteria based on expected improvements in water quality from the existing baseline should be presented. This project seems important in that it seeks to address water quality problems at their source. But the proposal needs more technical detail to evaluate whether it is likely to be effective and how this effectiveness will be monitored.

ProjectID: 20006

Yakima Basin Benthic Index Of Biotic Integrity (B-Ibi)

Washington Trout

Short Description: Develop a multimetric Index of Biotic Integrity for the upper Yakima/Naches Basin using Benthic Macroinvertebrates to detect ranges of human impact on aquatic resource health.

ISRP Recommendation - Fund / CBFWA Tier 3 / ISRP Comparison with CBFWA: Disagree-fund

Sponsor Funding Request = \$48,072 / CBFWA Funding Recommendation =

Recommendation:

Fund. Reviewers strongly recommend that if the proposal is funded, the authors coordinate where possible with Dr. Todd Pearsons, who is leading the Yakima species interaction studies. In addition, coordination with the monitoring and evaluation of YIN Satus Creek and Toppenish Creek restoration projects could be beneficial to both groups.

Comments:

The proposal provides a good discussion of the scientific rationale and background for the IBI approach. It includes a logical sequence of activity from development and validation of the index to demonstration of its use as a monitoring tool. The author makes a good case for using benthic macroinvertebrates as an index to aquatic resource health. If the use of a benthic index of biological integrity (IBI) can be established and verified for the Yakima Basin, it would provide an additional tool for monitoring and evaluating the success of many different restoration projects within the basin. Based on our review of water quality and habitat proposals, many projects within the basin apparently have not incorporated population measures of habitat response in their monitoring and evaluation. An IBI could provide that link. The proposal does not, however, evaluate alternative approaches or their relative strengths and weaknesses. The proposal makes a good case for applying the method to watershed assessment and for tracking progress toward “normative” conditions. However, trends toward normative conditions will likely require monitoring over a longer period than the proposed five years for this project. Long-term climatic changes will likely have a strong interactive effect on the rate of landscape and habitat response to restoration activities.

In addition to representing stream conditions and land-use patterns in the sample design, it may also be important to consider the types and distribution of habitat treatments in the subbasin. For example, sampling could be stratified by major categories of treatments to better interpret habitat responses to numerous land use, riparian, and instream restoration projects scattered throughout the basin. Ideally, some “control” streams where little restoration work is undertaken could be included in such a design.

The linkage between the proposed IBI and salmonids is relatively weak. It is not clear that samples collected primarily in riffles will be indicative of food webs tied to salmonids that rear in other habitats. The rationale and justification for selecting 30 sample sites is not discussed.

This proposal may offer a useful addition to population monitoring projects in the Yakima that may be less sensitive indicators of habitat change than invertebrate assemblages. Combining the IBI approach with results of fish population and habitat monitoring may improve the ability to interpret diverse ecological responses to restoration effects. The proposal makes a case for integrating IBI results with habitat and population data collected by other projects in the subbasin. However, the proposal does not demonstrate an awareness of many of the ongoing projects in the basin.

The proposal could be improved in several additional ways. First, the methods for selecting and characterizing index sites from a range of “pristine” to “severely degraded” are not well described, yet this step is critical to the construction and verification of IBIs.

Second, the writers do not acknowledge the full range of opportunities to collaborate with other relevant projects, although the author may be aware of them. For example, we would strongly recommend that if the proposal is funded, the authors coordinate where possible with Dr. Todd Pearsons, who is leading the Yakima species interaction studies. In addition, coordination with the monitoring and evaluation of YIN Satus Creek and Toppenish Creek restoration projects could be beneficial to both groups.

ProjectID: 20010

Improve Fish Habitat By Reducing Farm Sediment Runoff

Benton Conservation District

Short Description: Enhance tributary and main stem fish habitat by reducing soil, nutrient, and pesticide runoff from farm operations by supporting on-farm improvements with cost-share and technical assistance.

ISRP Recommendation - DNF / CBFWA Tier 3 / ISRP Comparison with CBFWA: Agree-DNF

Sponsor Funding Request = \$1,500,000 / CBFWA Funding Recommendation = Recommendation:

Do not fund, benefits to fish and wildlife not assured. They need to provide legal assurances that the water saved will stay instream.

Comments:

The proposal does an adequate job of identifying the problem and explaining the technical background for the proposed solution. The proposal failed to adequately describe context of the work within the FWP. In general, the proposal needed to use more documentation and references to support the general objectives and tasks that were proposed. For example, although this is a new project, the author claims that the techniques for cost-sharing are well worked out, but he provides no further explanation. Likewise, although the Benton Conservation District would need to make many decisions about how and where to spend this money, the proposal does not explain the criteria for making the choices. Will cost-sharing be approved on a first-come-first-serve basis, or will they be judged by merit? The proposal could also be improved by explicitly addressing the criteria by which the proposals are to be judged.

This project offers a preventative approach to restoring water quality by reducing agricultural sources of pollution. It provides technical examples of the magnitude of pollution inputs from farm activities in the Yakima. But the proposal is less clear about the benefits of the proposed irrigation measures relative to other potential restoration activities that could be undertaken. The project is requesting funds from BPA to accelerate irrigation improvements already being made through other funding sources. The additional benefit provided by acceleration of an ongoing effort as opposed to BPA funding other projects that would not otherwise receive any support is not specifically discussed. The proposal does not state why BPA is the most appropriate source for improving agricultural practices.

The proposal acknowledges that it is necessary to verify results of the project but indicates that there are other funding sources for monitoring. It is not clear whether these funds are likely to be forthcoming and, if so, how they would be spent. A design for

monitoring is not described. The proposal notes that a measurable reduction in various pollutants has been documented through work completed in some tributaries and drains. However these results are not provided. While the project will likely benefit water quality without additional risks to the ecosystem, it is difficult to evaluate the relative effectiveness of the proposed activities from the information that is provided.

ProjectID: 20072

Restoring Perennial Instream Flows At Ahtanum Creek

Dames and Moore

Short Description: Multi-year project to restore instream flows to Ahtanum Creek and thus to reestablish fish habitat. Proposed joint funding project between Ahtanum Irrigation District (AID) and BPA with research assistance from Yakama Indian Nation (YIN)

ISRP Recommendation - DNF / CBFWA Tier 3 / ISRP Comparison with CBFWA: Agree-DNF

Sponsor Funding Request = \$184,900 / CBFWA Funding Recommendation = Recommendation:

Do not fund, benefits to fish and wildlife are not demonstrated and there is a potential for adverse effects.

Comments:

This proposal provides arguments regarding the potential value of the project based on historical evidence of salmon in Ahtanum Creek and favorable conditions immediately upstream of the project area. However, it provides little information to make any judgement about the likelihood of success of the restoration effort itself or to identify any ecological risks associated with the proposed reservoir. The principle goal of the proposal is to collect information. It offers no conceptual approach for solving a perceived problem and asks no scientific questions to direct what information is collected. It is a proposal to prepare a proposal for reservoir construction and to meet the administrative requirements of NEPA. It is a laundry list of “hoops” through which the proposed project must proceed to navigate the permit process.

The proposal prejudices the ongoing feasibility study (to be completed in June) indicating that it will show that the project is feasible. If it is already clear that the project is, in fact, feasible, then specific results of the study ought to be provided including any concerns that have been raised. The proposal also states that many of the issues that would be uncovered during the scoping process are also “already obvious.” Yet none of these issues are discussed. The bulk of the proposal is designed to scope out the alternatives for developing a multi-purpose reservoir that would primarily be used for irrigation. The authors of the proposal argue that this is consistent with restoring a “normative” river ecosystem. This interpretation stands in marked contrast to other projects that are attempting to restore passage and water quality within the basin.

The authors do not attempt to explain alternative approaches for reaching the biological objectives or how they were evaluated or why they were rejected. The public discussion and resolution of both of these are left to the NEPA process, for which the proposal writers are soliciting funds. The authors do an inadequate job of explaining why funding

of this is the obligation of BPA under the FWP and not some other organization. It would seem that at least some discussion of the above two issues is necessary if the authors wish to make a strong case that funding of this project does not conflict with some portions of the FWP. This proposal does not provide sufficient information to evaluate its technical merit. It does not provide sufficient justification to show why BPA should support the work.

ProjectID: 20132

Yakima River Basin Water Temperature Monitoring And Modeling Project

Yakima Basin Joint Board

Short Description: Implement a water temperature monitoring program in the Yakima River Basin that will provide data for the SNTMP water temperature model. Model water temp as a function of other environmental variables, including land and water management activities.

ISRP Recommendation - DNF / CBFWA Tier 2 / ISRP Comparison with CBFWA: Disagree-DNF

Sponsor Funding Request = \$84,700 / CBFWA Funding Recommendation = Recommendation:

Do not fund, inadequate programmatic justification, no assurances of use by management authorities. The proposal should have explicitly stated what is known about temperatures in the Yakima River, what modeling capabilities exist now, what information is needed, whether the needed information can be obtained from the existing models, and how this project will meet the needs.

Comments:

It is not clear from the proposal whether there is a specific use or need that this project would fulfill. There could be many potential uses for temperature data or the model. But the proposal does not appear to be driven by a particular question or problem. Much of the justification for the work seems to be that temperature has never been fully monitored or modeled rather than why it is now important to do so. What specific management alternatives will the model be used to evaluate? We question whether the projected results will yield direct benefits to fish and wildlife.

The proposal provides minimal information about the performance, strengths, and weaknesses of the model itself. The sampling design needed to calibrate the model is vague. What assumptions drive the model, how does it perform under varying environmental and stream conditions, and what are its limitations? What evidence is there that the model can, in fact, be applied to any river system once it is calibrated with local data? It is not clear whether output from the model will continue to be validated following its initial calibration. The lack of information about the model makes it difficult to evaluate whether this approach will be useful or if other alternatives exist that should be considered.

Little information is given about the relationship and significance of this to other projects in the basin. Given the importance of water temperatures to the success of many programs in the Yakima Basin, it is difficult to accept that there has been no attempt to monitor or model these factors. The proposal should state what is known about temperatures in the Yakima River, what modeling capabilities exist now, what information is needed and why it can't be obtained from existing models, and how will this project fill that need. The objectives of the proposal are described as three study phases, which are logical and well described. The multi-agency technical advisory group is a strength of phase I and helps assure that project has a high likelihood of agency support and scientific credibility.

The proposal does a less than adequate job of linking this project to the Fish and Wildlife Program. Although the importance of temperatures seems self-evident to biologists, the proposal could better describe the rationale and significance to other projects. This would also help justify why BPA should fund the program, another area that was not explicitly addressed.

ProjectID: 20141

Recondition Wild Steelhead Kelts

Columbia River Inter-Tribal Fish Commission

Short Description: Test various methods to recondition wild steelhead kelts to help increase the contribution of repeat spawners to rebuilding depleted populations. Methods developed in this study could be used basin wide to help reduce kelt passage mortality .

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$80,252 / CBFWA Funding Recommendation = \$72,752
Recommendation:

Fund for one year as an innovative project. Subsequent funding contingent on the inclusion of a more thorough assessment of ecological and genetic risks associated with implementing the reconditioning strategy. They need to include an objective to develop guidelines that address when this technique should or should not be implemented given ecological, genetic and economic costs and benefits.

Comments:

This a well-written and interesting proposal. Although the idea of reconditioning steelhead kelts has been discussed for many years, this is the first attempt to examine this more rigorously. The authors do a good job of identifying the fishery problem and providing the technical detail for why this proposal addresses the problem. The objectives are clearly defined and measurable, and the researchers propose using the best available scientific techniques. Although the proposal could be improved, this research could lead to a potentially valuable conservation tool. The fact that steelhead reconditioning is already being used in the basin may support scientific testing of these procedures. However, this does not decide the fundamental issue of whether this strategy overall is a good one.

One important concern about the project design is the uncertainty of the prototype PIT tag detector at Bonneville and Prosser dams. The authors acknowledge that, without this detection capability, they will not be able to evaluate survival of several of the release groups. It is not clear from the proposal just how long it might take to perfect the technology at the dams even if the tag detectors are installed in 1999 or 2000. Considering the small number of fish that may be marked and released, it is difficult to evaluate whether the released fish are likely to be found again. This is clearly a critical factor for evaluating the proposed experiment.

While the proposal suggests that reconditioning is a way to restore life-history diversity, it is primarily aimed at fish production. Maintenance of the repeat spawning life-history type presumably would depend indefinitely upon hatchery intervention. The proposal

does not correct factors that now prevent expression of the repeat spawning behavior. Therefore, the life-history benefits are not self-sustaining. Like the whole idea of supplementation, success of this effort would seem to come when it is no longer necessary. This may be one of the most critical issues for this proposal, since application of the method ultimately does not promote restoration of normative ecological processes. Important questions to be answered then are: (1) Do the benefits of the work outweigh any risks? (2) Are there any alternative approaches for restoring the capacity of the ecosystem to maintain repeat spawners? (3) Have populations reached such a low level that this program is necessary just to prevent extinction of the repeat spawning type until the limiting factors can be resolved? These issues are not fully discussed in the proposal.

There is a lack of any discussion about potential risks of inbreeding, which could be considerable if reconditioning were successful in very small populations. The authors do state that they will consider the “genetic considerations of long-term reconditioning” under Scenario 3, but fail to provide any details about why this is important or how they would do this. In the analysis of expected costs and benefits that the authors propose, the investigators need to consider the genetic costs and benefits also. This is not a trivial task. The authors also fail to acknowledge that collecting enough kelts to get meaningful sample sizes is a major challenge to this study. Scenarios 1,2, and 4 are especially vulnerable because they also require a high secondary recapture rate of reconditioned kelts. Also lacking is any explanation of the analytical methods by which the investigators propose to use morphological features to develop a quick and accurate method for identifying kelts.

ProjectID: 20039

Comparative Population Study: Naneum, Coleman, Cooke Creeks

Washington Trout

Short Description: Measure/analyze resident trout population dynamics and measure/evaluate the effects of landscape/channel habitat dynamics on the dynamics of these populations in three subbasin tributaries of the upper Yakima R. subbasin.

ISRP Recommendation - DNF / CBFWA Tier 3 / ISRP Comparison with CBFWA: Agree-DNF

Sponsor Funding Request = \$52,218 / CBFWA Funding Recommendation =

Recommendation:

Do not fund. Reviewers encourage resubmittal next year with better problem statement and experimental design.

Comments:

This proposal attempts to address several potentially important issues. Unfortunately, the investigators seem unable to define very precisely what they are trying to do. The intent of this project seems to be to collect a lot of interesting population and geomorphological data from three different system and compare them. This is data collection in search of research; and research in search of a hypothesis.

The technical background to the problem raises a number of ecological and sampling issues, but it is not clear which, if any, of these the investigators are attempting to

address. The general objectives of the study are vague. The investigators do not describe how the specific tasks, although measurable, will accomplish these vague objectives. The investigators indicate that at the end of five years of study they will be able to develop hypotheses. Most research starts with hypotheses. At the same time, they promise that they will be able to “delineate risk assessment factors” for displacement of native trout by brook trout. It is not clear how they will be able to identify valid risk assessment factors when the scientific investigation is still at the stage of proposing hypotheses. The selection of study sites seems to be by happenstance and is not well justified, especially if the results are to be generalized to other watersheds. The methods section contains descriptions of how data will be collected (although the methodology is poorly cited) but no descriptions of how data will be analyzed.

Upper Mid-Columbia

ProjectID: 20031

Community Ecology And Food Web Studies In The Columbia River Basin

Olympia Forest Sciences Laboratory, Pacific Northwest Research Station, United States Forest Service

Short Description: The most abundant species of plant and animal in the water bodies within the watershed, their positions in the food web, and their contributions to the biotic community as a whole will be identified to elucidate their roles as food for fish and wildlife.

ISRP Recommendation - DNF / CBFWA Tier 3 / ISRP Comparison with CBFWA: Agree-DNF

Sponsor Funding Request = \$65,500 / CBFWA Funding Recommendation = Recommendation:

Do not fund. The proposal does not justify its programmatic applicability; specifically the trophic pathway leading to fish production, including dietary analysis. Comparing food webs in a natural lake with impounded rivers may involve untested assumptions.

Comments:

This proposal addresses an area that does not get much attention – the question of food web relationships and changes in the river from unimpounded reaches to reservoirs. The principal investigator looks qualified, and they provide a good temporal scale. However, they need to better describe how the project fits in the context of regional efforts. The geographic description needs more detail. They should describe the decrease in the budget for FY2002 and subsequent increase in FY2003.

ProjectID: 20038

Assess Habitat And Passage For Anadromous Fish Upriver Of Chief Joseph Dam

Colville Confederated Tribes

Short Description: To provide an estimate of the amount of spawning and rearing habitat for indigenous, anadromous salmonids between Chief Joseph Dam and Grand Coulee Dam. To determine the feasibility of providing passage for adult/juvenile fish through Chief Joseph Dam.

ISRP Recommendation - DNF / CBFWA Tier 2 / ISRP Comparison with CBFWA: Disagree-DNF

Sponsor Funding Request = \$274,284 / CBFWA Funding Recommendation = Recommendation:

Do not fund. The scope of the survey work needs to be expanded. The measurements were a good starting point but too limited at present to identify limiting factors for anadromous fishes upstream from Chief Joseph dam.

Comments:

The programmatic need is expressed and the objectives seem worthwhile, but it is not clear that this proposal will adequately address the issue or should be a 5-year study. The study plan should be more comprehensive. To demonstrate that the proposal is based on sound scientific principles, it should include, for example, the issue of potential competition and predation by non-native species. Proponents should examine potential changes in habitat under various operational schemes at Grand Coulee. While an examination of current velocity and substrate composition in the reservoir is a good starting point, reviewers would welcome a more careful examination of intragravel water quality, identification of areas of upwelling groundwater, and other species that could potentially act as predators. Also, some references on the ecology of lake-spawning salmon would be helpful. The authors should expand their methods beyond underwater videography. This proposal is not linked to other projects in the area and is the least complete of the reintroduction proposals in the subregion, 96046000, 20124, and 20123. The authors should compare their effort to other regional reintroduction efforts. The addition of a food web study component to the proposal should also be considered.

ProjectID: 20042

Integrating Okanogan And Methow Watershed Data For Salmonid Restoration

Okanogan Conservation District

Short Description: Gather, compile, and integrate all relevant watershed, fisheries, and water-quality information into a pre-developed computerized information tool for dissemination to policy makers and stakeholders for use in watershed restoration planning and monitoring

ISRP Recommendation - Fund / CBFWA Tier 3 / ISRP Comparison with CBFWA: Disagree-fund; strongly recommend

Sponsor Funding Request = \$269,285 / CBFWA Funding Recommendation = Recommendation:

Fund (high priority). They need to identify who will manage the KRIS database after the initial two years.

Comments:

Overall, this proposal is clearly stated, reasonable, and has worthwhile objectives. KRIS has a record of success in the Klamath. Generally, the tasks and objectives are well explained, although the reviewers would have appreciated more detail about the specific categories of information that would go into KRIS. The procedure for prioritizing information was incompletely explained. Who is managing the database after 2001? Are there ongoing costs after the two years? The resource management committee may not provide a consistent long-term base for continued operation of KRIS.

ProjectID: 20058

Leavenworth Hatchery Complex

Bureau of Reclamation

Short Description: The Leavenworth Fish Hatchery Complex provides mitigation for fish losses as a result of the construction of Grand Coulee Dam. It has 3 hatcheries, Leavenworth, Entiat and Winthrop.

ISRP Recommendation - DNF / CBFWA Tier 3 / ISRP Comparison with CBFWA: Agree-DNF

Sponsor Funding Request = \$630,000 / CBFWA Funding Recommendation = Recommendation:

Do not fund, technically inadequate proposal. Too many sections were blank. The proposal does not adequately describe how the identified problems will be solved.

Comments:

This proposal is a request for additional funds to supplement funds already received from BPA's "reimbursable" account through a direct funding agreement. They are requesting additional funds because the hatchery facilities are in need of repair or replacement, and they are having trouble meeting hatchery objectives because of problems associated with diseases and insufficient water quality. Proposal objectives appear to be a mix of additional operation and maintenance costs for the 3 hatcheries plus more evaluation of hatchery programs and achievements. However, it is difficult to know if requested funds are strictly for operation and maintenance (i.e., improved facilities) or for monitoring and evaluation programs. There was not a clear explanation of how the water supply problems and water quality issues (including disease in the Methow hatchery) were going to be corrected. Sections 3, 4, and 9 were blank. It is difficult to know the current genetic structure of hatchery stocks as their origin includes fish from the mid and lower Columbia and the McKenzie River. The appendices showing releases and adult escapement could have been summarized as text rather than lengthy tables. The budget is hard to follow and very few details are provided as to how the money would be spent. Increases in the outyear costs are not justified. An evaluation of operations of this hatchery complex is needed. The proposal does not provide enough information to make an informed decision.

Crab Subbasin

ProjectID: 20002

Hydrologic Study Of Stangland, Tyler And Clear Lake Area

Stangland-Tyler Aquifer Study

Short Description: This is a study of 40 square miles of the headwaters of Crab Creek within Spokane County. The study will provide a base line for water quality and quantity within the Midwestern area of Spokane County.

ISRP Recommendation - DNF / CBFWA Tier 3 / ISRP Comparison with CBFWA: Agree-DNF

Sponsor Funding Request = \$171,211 / CBFWA Funding Recommendation = \$ Recommendation:

Do not fund. Proposal was not programmatically justified in terms of benefits to fish and wildlife and the Fish and Wildlife Program.

Comments:

The primary weakness of this proposal was that it was not well linked to the Fish and Wildlife Program, nor were the benefits of the project to fish and wildlife clearly explained. They did not adequately connect this hydrology study to fish and wildlife recovery issues. Much of the proposal had little biological relevance. What are the resources being impacted? Is BPA the most appropriate funding source?

ProjectID: 20071

Restore Crab Lake And Adjacent Reaches Of Crab Creek.

Ducks Unlimited, Inc.

Short Description: Restore Crab Lake and adjacent reaches of Crab Creek. Crab Lake was drained and Crab Creek altered for agricultural purposes early this century. This project will restore historic habitat conditions.

ISRP Recommendation – Fund for 1 YR / CBFWA Tier 3 / ISRP Comparison with CBFWA: Disagree-fund, but not high priority

Sponsor Funding Request = \$365,000 / CBFWA Funding Recommendation = Recommendation:

Fund for one year (low-medium priority). Subsequent funding contingent on addressing ISRP comments. The project was not preceded by a watershed assessment, and there was some question whether the activities would enhance native or non-native fishes.

Comments:

There was not a clear connection between this project and the Fish and Wildlife Program. They have not justified the priority of the project in terms of the watershed; e.g. the project has not been preceded by a watershed assessment. How will this project benefit the ecosystem? The approach to restore historic habitat conditions appears good. However, the project area is so dominated by non-native species such as carp that benefits to native fishes will likely be limited. It seems possible that non-native species could benefit as much as native fishes. They claim the project will enhance native fishes but the target species are not identified. There is very little mention of monitoring. The project does have a good cost share element.

ProjectID: 20083

Evaluate, restore and enhance 14 miles of instream and riparian habitat on U.S. Fish and Wildlife Service

Short Description: Evaluate, rehabilitate and enhance 14 miles of in-stream and riparian habitat along Lower Crab Creek. This will enhance spawning habitat for adult anadromous salmonids and improve the rearing and resting habitat for juveniles. Habitat improvements may r

ISRP Recommendation - Fund / CBFWA Tier 3 / ISRP Comparison with CBFWA: Disagree-fund; strongly recommend

Sponsor Funding Request = \$102,706 / CBFWA Funding Recommendation = Recommendation:

Fund (High priority). OK for a multi-year review cycle, review in FY2002 for reporting of results.

Comments:

This was an excellent proposal. It appears well coordinated and describes relationships to other project. The proposal is based on the results of a watershed assessment and includes a monitoring plan and noteworthy local education approach. Although Crab Creek is a highly degraded area, it is unique geographically and is near the Hanford Reach where a healthy population of fall chinook is located. Consequently, restoration work would be of high programmatic value. The ISRP strongly endorsed funding this proposal.

The Rosgen method may not be appropriate to a natural marshland; the proposal should describe how it applies. The methods could have been described in more detail.

ProjectID: 9502800

Restore Moses Lake Recreational Fishery

Washington Department of Fish and Wildlife

Short Description: Restore/enhance the failed recreational fishery for resident species in Moses Lake, once the premier fishery for resident game fish in the Columbia Basin, in lieu of lost recreational fishery opportunities for anadromous game fish species in the upper Col

ISRP Recommendation - Delay Funding / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-until corrected

Sponsor Funding Request = \$234,890 / CBFWA Funding Recommendation = \$234,890

Recommendation:

Delay funding until they propose testable hypotheses developed from the existing data. There has been inadequate synthesis of existing data. Identify some specific problems, then re-submit the proposal.

Comments:

This clearly presented proposal for an ongoing project would replace recreational fishery losses because of declining anadromous fish populations with warm water game fishes such as crappie, bass, yellow perch and walleye. Accomplishments to date include compilation of a reference library on Moses Lake fishery, collection of water quality and habitat data, and formulation of study plan. The current proposal is for Phase 2, which

involves further data collection and development of specific introduction proposals. The sampling procedures should have been described in greater detail. However, additional data collection may not be warranted or of high priority at this time because there has been a lot of data collected on Moses Lake. How much more information do we need about black crappie and smallmouth bass? The proposers should look at the data they have and describe the testable hypotheses, although it is not apparent how such a small group of people would be able to analyze all the data. Phase 2 also includes completion of biological profiles for major fishes and habitat mapping. Presumably, Phase 3 would involve introductions and monitoring. Generally, the project is not designed to meet regional goals in terms of native fishes. Continued reliance on warm water fishes for recreational fishing opportunities may confound public expectations regarding restoration of anadromous fishes to fishable population levels. No cost share is provided in this project. Why isn't WDFW funding part or all of this? Are there chances for dispersal of introduced fishes?

The proposal does not adequately address the ISRP's FY99 comments, Appendix A page 65: "The proposal is for a highly managed non-native harvest fishery and the choice of fish stocks is not biologically justified. The proposal does not adequately ensure that the proposers have sufficient understanding of the reasons for fisheries decline in Moses Lake to restore the fishery. The experimental design is not clearly presented or justified, and the proposal does not adequately describe the methods to be used for some very complicated actions. Additionally, the effects of angling are not well described."

Wenatchee and Methow

ProjectID: 20001

Remove 23 migrational barriers and restore instream and riparian habitat on

U.S. Fish and Wildlife Service

Short Description: Enhance and restore fish passage in the Chumstick Drainage. 23 culverts will be replaced and realigned on private land within the watershed. Instream and riparian habitat will also be enhanced within these reaches.

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$305,000 / CBFWA Funding Recommendation = \$160,000

Recommendation:

Fund (High). Fund for one year as proposed, then re-review.

Comments:

This proposal is an improvement over last year's proposal, in that a more complete watershed assessment has been completed. Overall, this project has made a good case for funding (although it is not perfectly clear why BPA should fund it and not a land or transportation management agency). This offers good potential benefits to a number of target species. The Wenatchee has a run of summer chinook and this would be an area where additional spawning and rearing habitat would provide benefits. They do a good job describing a conceptual foundation. Cost sharing and coordination looks good. More

details could have been provided on the process that will be used to locate the habitat improvement projects and the monitoring plan. What are the ecosystem effects of removing these blocks? Will it open bull trout areas to non-native species?

ProjectID: 20527

Multi-Year Plan Wenatchee River Anadromous Fish Plan

Columbia Basin Fish & Wildlife Authority

Short Description:

ISRP Recommendation - na / CBFWA Tier na / ISRP Comparison with CBFWA:

Umbrella Proposal

Sponsor Funding Request = \$ / CBFWA Funding Recommendation =

Recommendation:

NA - Umbrella Proposal

Comments:

Very little detail

ProjectID: 20528

Multi-Year Plan Methow Anadromous Fish Plan

Columbia Basin Fish & Wildlife Authority

Short Description:

ISRP Recommendation - na / CBFWA Tier na / ISRP Comparison with CBFWA:

Umbrella Proposal

Sponsor Funding Request = \$ / CBFWA Funding Recommendation =

Recommendation:

NA - Umbrella Proposal

Comments:

Very little detail

ProjectID: 9604000

Evaluate The Feasibility And Risks Of Coho Reintroduction In Mid-Columbia

Yakama Indian Nation

Short Description: Determine the feasibility of re-establishing a naturally spawning coho population within the mid-Columbia tributaries, while keeping adverse ecological impacts on other salmonid species of concern within acceptable limits.

ISRP Recommendation - Fund in Part / CBFWA Tier 1 / ISRP Comparison with CBFWA: Partially agree-fund in part

Sponsor Funding Request = \$1,418,000 / CBFWA Funding Recommendation = \$100,000

Recommendation:

Fund in part. Recommend full funding for objectives 6-10; partial funding for objectives 11-15 based on costs related to implementation of objectives 6-10 in the Methow. Do not fund objectives 1-5 until coho reintroduction in the Methow has shown success in terms of naturally reproducing fish.

Comments:

This was a very complex and detailed proposal involving a large number of tasks. They did a good job of recognizing the problems and risks associated with their proposed activities. They did an excellent job of justifying the efforts and it would take too much space to review them in detail. The 0.001% return rate of adult coho to Wells Dam is definitely a cause for concern and is worthy of further investigation, especially in light of the relative success at Yakima. It is not likely that they will be able to develop a naturally producing run without first addressing the reasons for coho extirpation from the area. Feasibility would be better, and more cost effectively, determined by first seeing if coho reintroduction would work in one of the tributaries rather than in multiple subbasins. The Methow, as proposed, would be a good tributary to test the feasibility.

ProjectID: 9803500

Watershed Scale Response Of Stream Habitat To Abandoned Mine Waste

University of Washington, College of Forest Resources, Center of Streamside Studies

Short Description: Seasonal fluctuations of mine drainage effects will be analyzed. Heavy metal loading in forest soils, Alder Creek, and the mainstem of the Methow River will be measured. Metal uptake, transfer, and hazards in the stream food web will be determined.

ISRP Recommendation - Fund / CBFWA Tier 3 / ISRP Comparison with CBFWA: Disagree-fund

Sponsor Funding Request = \$53,820 / CBFWA Funding Recommendation =

Recommendation:

Fund (High). They need to include suggestions for remediation efforts as a deliverable.

Comments:

This proposal is well written and will likely have applicability to mining sites throughout the basin, as the problem they propose to address is common in the basin. Current guidelines for restoration and remediation are inadequate, thus the results from this study

will be valuable. Products should include guidelines for remediation efforts, peer review journal publications. The budget is appropriate for the task. The proposal could better describe how it will apply to remediation efforts.

Okanogan

ProjectID: 20529

Multi-Year Plan Okanogan Anadromous Fish Plan

Columbia Basin Fish & Wildlife Authority

Short Description:

ISRP Recommendation - na / CBFWA Tier na / ISRP Comparison with CBFWA:

Umbrella Proposal

Sponsor Funding Request = \$ / CBFWA Funding Recommendation =

Recommendation:

NA - Umbrella Proposal

Comments:

Very little detail

ProjectID: 9604200

Restore And Enhance Anadromous Fish Populations & Habitat In Salmon Creek

Colville Confederated Tribes

Short Description: Protect/restore/enhance fish habitat for all life stages of anadromous fish in SC through continued studies and partnerships with the Okanogan Irrigation District, government agencies and private landowners.

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$2,427,983 / CBFWA Funding Recommendation = \$577,983

Recommendation:

Fund (High), but review next year for inclusion of a better monitoring plan.

Comments:

The proposal is very well done with clearly stated problems and measurable objectives. It was good to see the results of the watershed assessments being put to use. The need for the project is clear and the area is historically important. The table is especially helpful in providing priority for selecting restoration sites. They do not include a very good description of the post enhancement monitoring. This should be included in the watershed management plan. They did not adequately explain what is being done to reduce the sources of habitat loss above the dam, and whether passive restoration is being considered as an alternative to bioengineering.

ProjectID: 20123

Restoration Of Sockeye Salmon Into Palmer Lake

Salmonsoft

Short Description: Sockeye salmon will be restored to Palmer Lake, Washington, by reprogramming the Cassimer Bar Hatchery.

ISRP Recommendation - Delay Funding / CBFWA Tier 2 / ISRP Comparison with CBFWA: Disagree-until corrected

Sponsor Funding Request = \$101,460 / CBFWA Funding Recommendation =

Recommendation:

Delay funding until adult sockeye passage at, or elimination of, the Enloe dam is reasonably assured. The project has high programmatic value.

Comments:

This proposal's objectives are to establish a run of sockeye salmon into Palmer Lake. There is a programmatic need for this project. Sockeye salmon have declined significantly. Only two of 25 lakes that produced sockeye historically (Lakes Wenatchee and Osoyoos) still maintain runs, but even these are in decline. The supplementation program for Osoyoos Lake has experienced problems because of a lack of sufficient sites for net pen placements. Canadian portions of the lake are unavailable for pen sets and high temperatures cause problems in remaining sites in the United States. Palmer Lake is historic habitat for sockeye. Proposed activities include obtaining necessary permits, releasing marked parr and smolt sockeye salmon from the Cassimer Bar Hatchery program into Palmer Lake, and determining whether parr exit the lake and whether adults return. The project includes monitoring of limnological conditions and movement of

fish. Spring inflows are problematic. The Similkameen River floods into Palmer Lake during spring, which may complicate movement of smolts. Limnological conditions at Palmer should be substantially better than at Osoyoos because of higher elevation at Palmer and therefore cooler water temperatures. Compared to the more elaborate plans prepared for reintroduction of sockeye into Skaha Lake, the proposal for Palmer is simple but the chances for success or unanticipated problems are more uncertain. Only one year of pre-introduction monitoring of limnological conditions is planned. The proposal for Palmer is less cautious than that proposed for Skaha.

The success of this project depends on the ability to separate sockeye released into Palmer Lake as fry or pre-smolts from the kokanee already living there. According to the proposal all fry and pre-smolts will be adipose clipped. However, the reviewers didn't see anything in the budget to cover the clipping cost. Returning adult sockeye will be trapped at Bonneville based on a visual mark, but we do not know what type of mark will be applied (V-I tag?). Correct fish identification is critical to this project, but we are not provided with enough detail to evaluate whether it will be properly done. How are they going to distinguish the adult sockeye from Wenatchee sockeye at Bonneville Dam? There is inadequate description of potential impacts and risks to the ecosystem. The proposal describes the existence of a 16m dam that will block passage. Elimination of the dam or passage past this dam should be secured before this project is funded. On the plus side, there is a significant cost share on this with Douglas County PUD.

ProjectID: 20124

Evaluate An Experimental Re-Introduction Of Sockeye Salmon Into Skaha Lake

Colville Confederated Tribes

Short Description: Evaluation of an experimental re-introduction of sockeye salmon into Skaha Lake in the Okanogan River Basin. Assess risks and benefits, formulate hypotheses, develop an experimental design and analytical tools.

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$219,450 / CBFWA Funding Recommendation = \$171,171

Recommendation:

Fund (High priority), OK through FY2002 as proposed. Excellent proposal.

Comments:

The primary objective of this proposal is to determine risks and benefits from reintroducing sockeye salmon into Skaha Lake. There is a clear programmatic need for this project. Sockeye salmon have declined significantly in the Okanogan Basin and are now lacking from most historic habitat. Skaha Lake is historic habitat and a workshop of regional experts recommended Skaha Lake as best site for reintroduction effort. Despite major declines, NMFS considers Okanogan sockeye stocks not to be in danger of extinction. Nonetheless, there is a clear need for this project. The Okanogan sockeye is the last transboundary sockeye run in the Columbia Basin. Proposed activities include assessments of disease and exotic species introductions, habitat inventories, life cycle

modeling, and preparation of reintroduction plan. Objectives and methods are clearly explained in detail.

This is an excellent proposal and is a good example of a well-conceived reintroduction study. It includes a good description of activities. The description of some of the methods is a bit incomplete, but the overall approach was both comprehensive and innovative. This proposal offers considerable opportunities to learn about reintroduction efforts for sockeye and how such efforts may affect broader species and the aquatic communities. Lessons learned could have broader benefits to other parts of Columbia Basin, especially to sockeye restoration programs in Idaho's Salmon River. It is a good strategy to test the potential of reintroduction in the smaller Skaha before efforts are made for reintroduction in Lake Okanogan. They describe good international cooperation with Canada (including cost share with Canada Department of Fisheries and Oceans). Weaknesses include the (recognized) potential for introduction of diseases, parasites and exotic fishes from elimination of instream barriers. Monitoring remains to be described in detail although various approaches are discussed.

ProjectID: 20033

Rehabilitate instream and riparian habitat on the Similkameen and Okanogan

U.S. Fish and Wildlife Service

Short Description: Rehabilitate and enhance 6 miles of in-stream and riparian habitat along the Okanogan and Similkameen river channels adjacent to Driscoll Island. This will enhance spawning habitat for adult anadromous salmonids and improve the rearing and resting habita

ISRP Recommendation - Fund / CBFWA Tier 3 / ISRP Comparison with CBFWA: Disagree-fund, but not high priority

Sponsor Funding Request = \$484,902 / CBFWA Funding Recommendation = Recommendation:

Fund (medium priority), but cost per mile is very high and vulnerability of project to anthropogenic and natural disturbances has not been adequately considered.

Comments:

The proposal's primary goals are to improve instream and riparian habitat improvement around Driscoll Island, which offers the potential for broad benefits to fish and wildlife. River channels around Driscoll Island provide migration corridors, spawning areas, and rearing habitat for summer chinook, and summer steelhead, as well as migration corridors for sockeye salmon. Bull trout may be present. The project has a clear relationship to overall goals for anadromous fishes in the Okanogan River, although they could have better described potential benefits in the context of the entire Okanogan subbasin.

The proposed activities are focused on improvements in water temperature (primary limiting factor), riparian vegetation, streambank stability, and habitat complexity are anticipated. Sources of LWD are lacking. The proposal calls for investing about \$300,000 per mile over the life of the project to improve 6 miles of river and riparian zone in a very large watershed. There has been no effort to quantify the potential benefits to fish populations that would derive from enhancing this limited stream reach at very

high cost. Proposed activities include Rosgen habitat survey, restoration plan development, and rehabilitation of 6-7 miles of river corridor. Reviewers were concerned that the proposal did not describe the potential for passive restoration methods. Rather, the proposal seems to assume that expensive bioengineering as the solution for habitat improvement. A large portion of project costs is for bridge construction for permanent access to the island (ca. 84%). What are project restoration costs relative to bridge construction costs? Are there alternatives to a bridge? The bridge offers some benefits such as improved access for public education opportunities such as the planned interpretive trail, but there are also potential negative impacts associated with public access. Monitoring is included. The proposal leaves several important questions unanswered. Specific stream condition information for the project area is lacking. Soils in the area are highly erodible and the area is subject to high flood events. Will problems remaining in upstream watersheds contribute to flooding and erosion that will be detrimental to project? If it has been highly impacted in the past, they should provide assurances that the restoration activities will not be impacted by the same factors that contributed to the degradation of the site.

ProjectID: 20037

Improvement Of Anadromous Fish Habitat And Passage In Omak Creek

Colville Confederated Tribes

Short Description: This project would include the removal of railroad debris and rubble and allow anadromous fish to access about 26 miles of spawning and rearing habitat. Also, to include improvements in land management activities and instream restoration practices.

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$349,661 / CBFWA Funding Recommendation = \$349,661

Recommendation:

Fund (High priority). Review after one year to assess progress.

Comments:

Last year the ISRP recommended that this proposal include a watershed assessment. This year the project sponsors have provided the information needed to justify the project. The objectives are clear, methods are well explained, and monitoring is included. This could lead to 26 more miles of steelhead production habitat and associated risks appear small.

ProjectID: 20073

Evaluate Relationship Between Land Use, Water Quality, And Fish Health

U.G. Geological Survey

Short Description: Evaluate whether land use activities are elevating the concentrations of pesticides and trace elements in surface waters to levels that pose a potential threat to fish and other aquatic life.

ISRP Recommendation - DNF / CBFWA Tier 3 / ISRP Comparison with CBFWA: Agree-DNF

Sponsor Funding Request = \$261,100 / CBFWA Funding Recommendation =

Recommendation:

Do not fund. This may be a significant problem but the proposal needs to show a tighter linkage to land use, and cost sharing with other organizations would better assure that the results would be applied to benefit fish and wildlife.

Comments:

This appears to be a great idea but they do not adequately describe how they are going to make the correlation between land use and accumulation of pesticides. There are multiple stressors in the system, so the evaluation will be complex; the GIS alone will not be able to tease out the complexities of the land use problems. It is possible that GIS coverage of land use in the area (task 1) may already exist and may not need to be duplicated; the proposers should check with other agencies. They might also consider analyzing tissue samples from suckers, as these fishes can be long-lived and can bioaccumulate toxins in muscle and fat tissues. If they do find a problem, they need a strategy to address the problems and a plan to monitor the subsequent implementation. This project should show some cost sharing with the land managers and the Washington Department of Ecology. The budget needs to be explained.

Upper Columbia

Mainstem, Lake Roosevelt, Lake Pend Oreille and Coeur d'Alene

Roosevelt Lake Hatchery Proposals

This set of Lake Roosevelt Hatchery proposals would be better understood and evaluated if placed under an umbrella proposal. The umbrella should include the several hatcheries (Spokane Tribal, Sherman, Ford), net pens, and fish trapping facilities designed to produce fish for stocking and the Lake Roosevelt monitoring program that is designed to evaluate the benefits of stocking to populations and the fishery. This set needs consistent objectives, a description of relationships among projects, location of facilities, maps, rationales for adding new projects to the set, etc. In addition, the umbrella should address larger issues such as whether the region should continue to focus Lake Roosevelt recovery efforts on producing more hatchery fish or consider reducing entrainment at the dam. Current dam operations limit the ability to develop a sustaining natural population of kokanee. This set of proposals also should address and monitor potential impacts on native biota.

ProjectID: 9104600

Spokane Tribal (Galbraith Springs) Hatchery Operation & Maintenance

Spokane Tribe of Indians

Short Description: Operate and maintain the Spokane Tribal Hatchery to aid in the restoration and enhancement of the Lake Roosevelt and Banks Lake fisheries.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$521,934 / CBFWA Funding Recommendation = \$521,934

Recommendation:

Fund for one year on the quality of the proposal. Subsequent funding contingent on inclusion of more emphasis on native biota. The proposal would be more attractive for

multi-year review cycle if propagation and stocking were consistent with regional goals by shifting to native species such as local stocks of kokanee, redband, or cutthroat. This and other Roosevelt Lake hatchery proposals need to address and monitor potential impacts on existing native biota.

Comments:

The proposal is for a fish gamete collection and initial fish production project for releasing kokanee salmon and rainbow trout into Lake Roosevelt, with an established monitoring program. The objective is to maintain a viable fishery in the lake as mitigation for blockage of anadromous salmon runs by Grand Coulee Dam and continued loss of fish from the reservoir through entrainment in turbine intakes.

The proposal was well written and thorough (much improved from last year). Releasing kokanee salmon and rainbow trout into Lake Roosevelt seems to have been accepted regionally as a viable mitigation tool. Furthermore, in terms of providing a viable fishery in Lake Roosevelt, monitoring suggests the project has been and probably will continue to be successful.

The project is well integrated into the regional scheme and warrants continued funding as part of that scheme (the regional approach could use an umbrella proposal). The proposal lists several FWP measures for which it is relevant, plus the Blocked Area Management Plan. The work is related to 6 existing projects and 3 new proposals. There is a good history of project operation and fish production. This hatchery is integrated with the Sherman Creek Hatchery and net pens to allow a sequenced production of fish for the Lake Roosevelt area. The proposal has good, straightforward objectives and tasks. There is an especially good background section, which would have been good as an overall Lake Roosevelt area umbrella statement. The rationale is good. There is an excellent summary of collaboration and related projects (as noted above), project history, and methods description. The project would be a good candidate for multi-year funding, pending overall regional review of hatcheries as mitigation.

The group questioned, as in the ISRP's FY99 comments, why the objective of this work was not to restore natural, native, resident species for the fishery. Also, the proposal doesn't address the ecosystem interactions (and interactions with existing, native species and stocks) implicit in stocking non-native species or stocks. Because M&E is done under another project, there may not be sufficient coordination.

ProjectID: 9104700

Sherman Creek Hatchery O&M.

Washington Department of Fish and Wildlife

Short Description: Sherman Creek Hatchery's (SCH) primary objective is the restoration and enhancement of the Lake Roosevelt and Banks Lake fisheries. SCH is listed as a specific action in the September 13, 1995 FWP Sec. 10.8b.2. The hatchery was constructed in 1991, at

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$201,397 / CBFWA Funding Recommendation = \$201,397

Recommendation:

Fund for one year on the quality of the proposal. Subsequent funding contingent on inclusion of more emphasis on native biota. It would be more attractive for multi-year review cycle if consistent with regional goals by shifting to native species such as local stocks of kokanee, redband, or cutthroat. The proposed use of local stocks of redband should be expanded. As a set, the Roosevelt Lake hatchery proposals need to address and monitor potential impacts on native biota.

Comments:

The proposal is basically a fish production project for releasing fish into Lake Roosevelt as mitigation for Grand Coulee Dam, with an established monitoring program. Releasing kokanee salmon and rainbow trout into Lake Roosevelt as a mitigation tool has been accepted. In terms of providing a viable fisheries in Lake Roosevelt, monitoring suggests the project has been, and most likely will continue to be, successful.

This is a good proposal (much improved from last year), which warrants continued funding. The relevant FWP measures are identified, as well as the Upper Columbia Blocked Area Management Plan. The work is related to 8 existing projects and 3 proposed projects, which generally form a coordinated whole (but without an umbrella proposal). This is a companion hatchery for the Spokane Tribal Hatchery (the Spokane hatchery does initial incubation and this hatchery does rearing, with output often going to net pens funded in separate projects). Good accomplishments are listed in terms of an annual operating plan and annual production goals. There has been a good increase in fish catch in Lake Roosevelt as a result of this project. The budget is well detailed. There are good write-ups of methods and facilities. Multi-year funding might be appropriate. The proposal quality ranked in the midrange of proposals reviewed.

A drawback of this proposal is its strong reliance on non-native versus native populations as an egg source (see project 9104600, Spokane Tribal Hatchery). There are commendable efforts, albeit weak, to at least partially convert to the use of native fish. The proposal did not make clear why the objective of this work is not to restore natural native species for the fishery. The proposal also does not address the ecosystem interactions. M&E is done under another project. Despite its strong reliance on non-native fishes, the project was recommended for funding pending the artificial propagation review. The proposal for FY2001 should include more about native species and stocks.

ProjectID: 9404300

Monitor, Evaluate, And Research The Lake Roosevelt Fishery

Spokane Tribe of Indians

Short Description: Monitor and evaluate the performance of hatchery fish.

Develop and maintain a model able to predict the effects of hydro-operations and management actions on the lake ecosystem and fishery. Use model results to refine a fisheries management plans.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$1,500,000 / CBFWA Funding Recommendation = \$1,500,000

Recommendation:

Fund for a year. Subsequent funding contingent on addressing the following points: The proposal needs a better explanation of personnel and subcontracts, a better relation of objectives to budget, and better reporting of results to date. With these shortcomings addressed, the proposal could be a candidate for a multi-year review cycle. As a set, the Roosevelt Lake hatchery proposals need to address and monitor potential impacts on native biota.

Comments:

This is a proposal to continue to monitor and evaluate the fisheries and ecological conditions in Lake Roosevelt and to correlate fluctuations in the fisheries and ecological conditions to reservoir operations. The ultimate objective is to develop a predictive model that will allow an objective and scientifically based decision on use of Lake Roosevelt water among numerous, often competitive, stakeholders for the long term benefit. Information gained from this project is also crucial to evaluating the success of numerous other ongoing or proposed fisheries projects in the area (all designed to mitigate for blockage of anadromous runs by Grand Coulee Dam).

This is a good project proposal that warrants continued funding, although some of the concerns raised in the ISRP's FY 1999 review remain inadequately handled. Overall this is a valuable and productive project. The work is well related to the FWP, BiOp, and the Upper Columbia Blocked Area Management Plan. It is well related to 9 existing projects and 5 proposed projects. This is the main monitoring component of a multi-project effort in the Lake Roosevelt area and, as such, is critical for evaluation of several other projects. It also receives information from the other projects as input to a well-conceived modeling framework. There is an excellent description of past accomplishments, giving results. The list of objectives and tasks is excellent, although the schedules for FY 2000 were unclear. There is good cost sharing. The narrative was very good, with well described scientific and biological objectives. There is a clearly explained evolution of science and management over time. The discussion of the tradeoff between fish management goals and other uses of Lake Roosevelt for water downstream was good, with a realistic approach to hatchery reproduction and specific timing of releases to avoid entrainment. This project would be a good candidate for multi-year funding.

There were also some drawbacks in the proposal. The rationales for use of certain techniques are instead of possible alternatives are not fully explained. It is not clear how

possible negative interactions between hatchery released and naturally produced fish are expected to be minimized. The proposal is a pretty skimpy explanation of a large, \$1.5 million budget. There is a long list of objectives, but no direct tracking of objectives to tasks and methods. Several research projects are listed as subcontracts but left completely undescribed. The hypotheses are not testable. The project history refers to reports rather than to technical accomplishments. This appears to be good work, but the proposal continues to be somewhat inadequate in its description and presentation.

A subsequent year's proposal should address specifically these points: The personnel and subcontracts are not adequately described. The hypotheses do not appear testable. The objectives don't track to tasks very well. The objectives are not adequately related to the budget. The objectives of monitoring are primarily related to the abundance of hatchery fish produced for the reservoir, but would be better if the focus were broadened to include the native biota and ecosystem responses.

ProjectID: 9500900

Rainbow Trout Net Pen Rearing Project

Lake Roosevelt Development Association

Short Description: Resident fish substitution addresses unmitigated losses of salmon and steelhead attributed to development and operation of hydropower projects.

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$100,000 / CBFWA Funding Recommendation = \$100,000

Recommendation:

Fund on the quality of the proposal, but it would be more consistent with regional goals if this (and inter-related projects) shifted to native species such as local stocks of redband or cutthroat. As a set, the Roosevelt Lake hatchery proposals need to address and monitor potential impacts on native biota.

Comments:

This is a proposal to use net pens in Lake Roosevelt to continue the rearing process for fish, largely rainbow trout, used for stocking of the lake in mitigation for Grand Coulee Dam. It is a part of the sequence of actions for this stocking that involves several projects for gamete collection, incubation, and rearing. Rainbow trout are presently perceived as an integral part of the Lake Roosevelt enhancement program and rearing trout in net pens in the reservoir has proven effective. Continuation of the project requires administrative and maintenance costs, which this proposal solicits.

This is a good project proposal that warrants continued funding. The proposal quality fell in the midrange of proposals reviewed. Several FWP measures are cited, as well as the Upper Columbia River Blocked Area Management Plan. The work is coordinated with 5 other projects, as listed in the front part and in the narrative. The work depends on other projects for fish to be raised in the net pens and for monitoring. Clear O&M accomplishments are listed. The proposal is a bit confusing in asking for upgrade to production of 500,000 fish when this number was produced in 1996-98 (the request seems to have been old text from the start of the project). There is good cost sharing and excellent use of volunteers (both for labor and commitment to the resource). A good background narrative is followed by a good discussion of rationale/significance and an excellent methods description. A strength of this proposal is that a monitoring and evaluation program is already in place (9494300). This project seems to be an excellent use of funding. Pending the results of the artificial propagation review, funding is recommended. This project seems to be a good candidate for multi-year funding. Integration under an umbrella would be desirable.

This proposal for FY2001 should contain some clarification and/or evaluation of the effects of expected increasing production to 500,000 fish. If this is a large increase, what is the justification? How will its effects be monitored? What increase in harvest is expected? What effects on other fish are anticipated? What about using native species? As noted for other projects that are linked in the propagation series, the entire effort needs

to critically evaluate non-native substitution and possibly shift into production of native species such as redband.

ProjectID: 20096

Ford Hatchery Improvement, Operation and Maintenance

Washington Department of Fish and Wildlife

Short Description: Improve water supply and hatchery building, operate and maintain Ford Hatchery to enhance the recreational and subsistence kokanee fishery in Lake Roosevelt and Banks Lake, and bolster put-and-take resident trout fishing lakes in Region 1 (Eastern WA).

ISRP Recommendation - Fund / CBFWA Tier 2 / ISRP Comparison with CBFWA:

Agree

Sponsor Funding Request = \$333,105 / CBFWA Funding Recommendation = Recommendation:

Fund on the quality of the proposal, but it would be more consistent with regional goals to use native species such as local stocks of redband or cutthroat. As a set, the Roosevelt Lake hatchery proposals need to address and monitor potential impacts on native biota.

Comments:

This is a new proposal to renovate the building and water supply of a 50-year-old hatchery used to produce kokanee for stocking. This is a clearly written and thorough proposal. It is clear that Grand Coulee Dam has negatively impacted fish production and that under present conditions the prospects for natural production to supply a viable salmonid fishery in Lake Roosevelt and Banks Lake are not good. Supplementation, therefore, has been considered a viable means of mitigating the dam's impact. In order to have sufficient numbers of fish for the supplementation program, the water delivery system to the hatchery must be improved or the production transferred to another facility. The latter is probably not a viable option. A big strength of this proposal is the subsequent monitoring and evaluation of the performance of the fish that are to be released.

The proposal references the FWP and four other plans. Good relationships are described with 8 other projects related to Lake Roosevelt fisheries. There are specific objectives for facility improvement, production and a stocking plan. The operations of this hatchery would be coordinated with two other hatcheries for Lake Roosevelt (Sherman and Spokane Tribal) and thus an umbrella proposal seems desirable. Monitoring in Lake Roosevelt and Banks Lake would be coordinated with other funded studies (more details are given than probably needed). There is an exceptionally thorough and interesting background, with value for native species. The project might be a good candidate for multi-year funding. The proposal was long, with more detail than was needed (but that was interesting, anyway).

However, there is not any evidence in the proposal whether the operators will use this renovation to move the hatchery operations more toward current practices. The monitoring and evaluation proposed are focused on the fishery, not on the biological or ecological impacts of kokanee stocking. How is a put and take fishery "rehabilitation"? Statements are made about increasing production without any reference to the costs of

increasing production. Why assume they are linear over different scales? The proposal would be strengthened by some comparative judgment of this hatchery compared to others with reference to cost per unit of production. The proposal could use some more interpretive discussion of supplementation versus rehabilitation, particularly in the context of the ecosystem.

The group recommended the project for funding pending determination of its consistency with the results of the Council's artificial fish propagation review.

ProjectID: 20097

Phalon Lake Wild Rainbow Trap Improvements and O&M

Washington Department of Fish and Wildlife

Short Description: Construct a permanent trapping and spawning facility and produce 500,000+ wild rainbow annually

ISRP Recommendation - Delay Funding / CBFWA Tier 2 / ISRP Comparison with CBFWA: Disagree-until corrected

Sponsor Funding Request = \$25,000 / CBFWA Funding Recommendation = \$25,000

Recommendation:

Delay funding until proposers justify why they are using a single source of fish for stocking and address potential consequences of this on the genetic characteristics of native populations. Encourage resubmission in another year. As a set, the Roosevelt Lake hatchery proposals need to address and monitor potential impacts on native biota.

Comments:

This is a new proposal to take over a trap facility for obtaining spawning stock of rainbow trout. This proposal would replace hatchery rainbow trout with resident redband trout. Although the group liked the idea of replacing stocking of coastal rainbow trout with local redband rainbow trout, the proposal should consider the potential negative effects of using a single source of fish for stocking on the genetic characteristics of native populations. If substantial genetic differences exist among the local stocks of native redband, then stocking a single source of fish could 'genetically homogenize' the native populations, possibly reducing productivity and population viability.

Aside from the objection above, this is a well-prepared, new project proposal. It is related to the FWP and three other plans. The proposal specifically relates the work to seven other BPA-funded production and evaluation projects for the area (suggesting the need for an umbrella proposal. This project would provide wild stock for hatcheries, replacing other stocks. It has significant shared costs (\$25K of \$150K). There would be obligations for construction and operation in the future, however. There is a good background and rationale for the use of native trout in supplementation. There is construction as well as O&M. The exact facility and equipment is left unclear.

There is confusion about funding history. The project seems to have been ongoing since 1996, but the proposal presents no project history. It is related to a project that will monitor these fish, but what about monitoring the impact on other fish? There is no explanation of why and how they will increase from \$26k to \$500k. Of this set of Roosevelt Lake hatchery proposals, it is good that this project proposes to use native

stock. This is a direction that the other projects need to pursue. However, the use of just one source is questionable for maintenance of native stocks. There is a weakly justified budget with little cross-correlation between objectives and costs. A better description of prior funding is needed, here or in an umbrella proposal.

ProjectID: 20146

Lake Roosevelt Kokanee Net Pens

Washington Department of Fish and Wildlife, Sherman Creek Hatchery

Short Description: Construct and operate 20 kokanee salmon net pens (25,000 fish/pen) as called for in the NPPC September 13, 1995 FWP Section 10.8b.4.

Operation of the kokanee net pens will be by the Sherman Creek Hatchery (9104700). Sherman Creek was constructed in 1991

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$185,825 / CBFWA Funding Recommendation = \$185,825

Recommendation:

Fund for one year based on the quality of the proposal (medium priority). Subsequent funding contingent on strengthened justification of cost effectiveness of this effort relative to a hatchery. As a set, the Roosevelt Lake hatchery proposals need to address and monitor potential impacts on native biota.

Comments:

This is a new proposal to build and operate net pens for rearing kokanee. It is proposed as a cost-effective alternative to raising fish for a longer duration in a hatchery. It is clear that in order to meet perceived kokanee salmon needs for the Lake Roosevelt enhancement program more rearing space is needed. Pens logically represent a relatively inexpensive and efficient option. The monitoring and evaluation program already in place is an additional strength of the proposal.

This is a clearly written proposal in the mid-range of quality of those reviewed. It is related to the FWP and the Upper Columbia Blocked Area Management Plan (direct mandate). It is specifically (and well) related to 10 other Lake Roosevelt projects or proposals. There is a single, clear objective for construction and operation of net pens, with later objectives for production. There is good justification in that the use of net pens reduces the need for hatchery space, but a cost savings is not quantified. The project reflects well-planned mitigation beginning in the 1980s. There is a good justification in terms of fish catches in Lake Roosevelt.

There are drawbacks to the proposal, however. The authors do not justify that this is a cost-effective means of production, although it is likely a cheaper alternative than constructing a new hatchery facility. There is little direct connection of objectives, methods, and budget. This proposal, along with several others, just assumes that hatchery production is good for Lake Roosevelt.

ProjectID: 8503800

Colville Tribal Fish Hatchery

Colville Confederated Tribes

Short Description: Produce 22,679 kg (50,000 lbs) of resident salmonids for distribution to reservation waters in an effort to provide a successful subsistence/recreational fishery as partial mitigation for anadromous fish losses above Chief Joseph and Grand Coulee Dams.

ISRP Recommendation - DNF / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-DNF

Sponsor Funding Request = \$360,973 / CBFWA Funding Recommendation = \$360,973

Recommendation:

Do not fund. Although the proposal is adequately presented, the objectives are in conflict with regional goals to enhance and protect native biota. The proposal would be more acceptable if native species, such as local stocks of redband or cutthroat, were used. This proposal needs to address and monitor potential impacts on native biota.

Comments:

This proposal is for a fish production project with subsequent monitoring and evaluation of fish performance through creel surveys, netting, and trapping. It is a long-term project for fish stocking on the Colville reservation (non-Lake Roosevelt) as mitigation for Grand Coulee Dam. It has a history of success, based on standard views of need. The proposal is fair, in the mid-range of those reviewed, but the absence of any linkage to FWP is conspicuous. The proposal includes a thorough listing of production related to goals. The list of revised objectives is detailed. There is good background, rationale/justification, and project history. The work includes M&E. No resumes were given for the staff, however.

A major deficiency is that the proposal does not address what attempts are being made to determine why performance objectives, in terms of catch per unit effort and condition, are generally not met. It also should better describe what attempts are being made to determine the factors limiting natural reproduction, another project objective. It appears that the approach to attaining these objectives is simply to stock fish, but this is a hit-or-miss approach and is not likely to be successful. Some of the monitoring and evaluation work could be tied to other projects in the area. The proposal overall could improve by demonstrating the project's linkages to others in the area. Any funding recommendation should be tentative pending results of the Council's artificial propagation review.

The proposal explains the justification for using non-native species, but questions persist as to whether that is consistent with goals of the FWP. Reviewers challenge the claim that this stocking program is good for native species (see page 17 of proposal). The stocking does not seem compatible with regional goals of fostering local species and stocks. Monitoring and evaluation seem to include only stocked non-native fish instead of including effects of stocking on all fish and the ecosystem. The proposal should address and monitor potential impacts on native biota.

ProjectID: 9001800

**Evaluate Rainbow Trout/Habitat Improvements Of Tribes. To Lake Roosevelt
Colville Confederated Tribes**

Short Description: Increase the quality and quantity of spawning and rearing habitat in selected streams that drain into Lake Roosevelt by eliminating migration barriers, improving riparian conditions, improving instream habitat, and protracted late summer flow conditions.

**ISRP Recommendation - DNF / CBFWA Tier 1 / ISRP Comparison with CBFWA:
Disagree-DNF**

**Sponsor Funding Request = \$189,636 / CBFWA Funding Recommendation =
\$189,636**

Recommendation:

Do not fund this year. Subsequent proposals should provide a thorough analysis of results to date, as noted in the ISRP's FY99 Appendix A comments.

Comments:

This is strictly a monitoring and evaluation proposal to determine the effectiveness of past habitat improvement projects in terms of perceived habitat quality, fish abundance, and fish use. It is an existing project that does not provide enough results of its work since funding began several years ago to show benefit to fish and hence does not warrant continued funding. The proposal cites only the FWP as its basis, with no relationships to other projects in the Upper Columbia Basin indicated (when it is clear from other proposals that there is a large, coordinated, regional effort). Neither the Past Accomplishments nor the Project History sections catalog results in terms of fish increase (not even citation of BPA annual reports), only that they did the work. There is good background and rationale, however. The methods appear to be the same as those written in 1996. Reviewers are prepared to accept that approach, but it does not reflect any learning and adaptation since then. It is not clear whether the populations were monitored the same way before and after treatments. The proposal states that statistical analysis procedures are not established, even at a time when the study is nearly complete. This is a poor practice; a statistical plan should have been part of the initial monitoring plan. No staff resumes are provided to establish staff qualifications.

Overall, the monitoring program appears to be sound, but there is very little detail presented on methods. Clear reporting of results-to-date could allow evaluation of soundness. More discussion should be offered on why certain techniques (e.g. Channel Stability Evaluation Procedure and Timber, Fish and Wildlife Monitoring Procedure) were chosen over alternatives. More detail on milestones is needed. We stand to learn a lot from this monitoring and evaluation program and it might be given high priority for funding if adequate results had been presented.

A strength of the program is that overall it is a restoration program for a native stock. All in all, this seems like a reasonable project but it would benefit greatly with some evidence of results after all these years. No further funding should be provided until results are made available for evaluation.

The ISRP's FY99 report noted that the proponents provided no history or description of concrete results. That they neglected to address results this year is unacceptable. The

project should not be funded until some accounting is offered of results and accomplishments. The goals are good, and the topic and results are potentially very important for the region.

ProjectID: 9501100

Chief Joseph Kokanee Enhancement Project

Colville Confederated Tribes

Short Description: This is a stock assessment project, specifically to determine the stock status, strength, genetics, and local fishery contribution by natural production kokanee. High entrainment rates are suspected through Grand Coulee Dam.

ISRP Recommendation - DNF / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-DNF

Sponsor Funding Request = \$596,753 / CBFWA Funding Recommendation = \$396,753

Recommendation:

Do not fund. Proposal is technically inadequate. However, the topic is important question for the region; BPA should develop an RFP.

Comments:

This project has two major elements, stock assessment and assessment of entrainment through Grand Coulee Dam. In many respects, this project is the keystone for justifying the extensive artificial production of fish for stocking in Lake Roosevelt. The proposal is not well prepared, does not express its objectives well, and cannot be recommended for funding. CBFWA notes that the project is not cost effective, and that it has already fulfilled its objectives. The work is related to the FWP and to 3 other projects for coordination of sampling, staff, data, and equipment. Only administrative accomplishments are presented, and the narrative states that no biological opinions have been reached. Many typos in the proposal suggest hasty and sloppy work, which may be indicative of the approach to the project. There is no cost sharing. The project description seems to be an odd mix of subjects, the rationale is vague, and no project history is given. Notwithstanding a large budget for subcontracted work, no information is provided on the research to be done under the subcontract (experimental design, etc.). The reviewers can only conclude that the proposal is not based on sound scientific principles.

The reviewers agreed that the proposal is unacceptable as a statement of work to be done, even if it seems to be important work. The entrainment estimates may be the key to the whole Lake Roosevelt hatchery and stocking program. The fundamental question is whether it is better to allow entrainment and continually restock fish (at considerable perpetual cost to BPA) or to reduce the entrainment. There are techniques available for reducing entrainment of kokanee in the discharges of large storage dams (e.g., strobe lights demonstrated in Lake Pend Oreille and at Dworshak). Also, it appears that an assemblage of poorly related work was developed to fit a monetary amount rather than having costs track a set of well-justified work to be done. The proposal needs better description of what is to be analyzed. Subcontract work needs to be included as an integral part of the proposal (objectives, methods, etc.).

The work seems especially important, and if the present project organization and staff cannot do a proper job, then funding of another organization to do it might be considered.

ProjectID: 9502700

Collect Data On White Sturgeon Above Grand Coulee Dam

Spokane Tribe of Indians

Short Description: Three year base-line assessment of white sturgeon in Lake Roosevelt from Grand Coulee Dam to the Canadian border, and the Spokane River arm. Special emphasis will be placed on defining recruitment potential and factors currently limiting recruitment.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 2 / ISRP Comparison with CBFWA: Agree

Sponsor Funding Request = \$342,086 / CBFWA Funding Recommendation = \$75,000

Recommendation:

Fund for one year; future funding contingent on reporting of results to date. Include in an overall programmatic review of white sturgeon work in the entire Columbia River basin.

Comments:

This proposal is for assessment of white sturgeon in Lake Roosevelt. The reviewers found this proposal to be very persuasive. A strong case is made for conservation of this strain of white sturgeon stock. Continued viability of the white sturgeon population above Grand Coulee Dam is tenuous. Presently, we have no or very little knowledge of the biological and physical factors affecting white sturgeon abundance, population dynamics of the white sturgeon, and when and where they may spawn. All of this information is essential for formulating a biologically sound restoration program. This project proposes to obtain the above information in a scientifically sound manner. The project is tied to restoration and recovery and not strictly enhancement of a native species. The information provided points up the need for quick action if this native species is to be saved from continuing decline and possible local extinction. Although this is given as an existing project, the study has not started and is essentially a new project proposal. This needs clarification.

Taken as a new proposal, this is a good one that warrants funding. The proposal relates the work to the FWP and the Upper Columbia Blocked Area Mgmt. Plan. The objectives and tasks are clear. Costs are shared with the British Columbia Ministry of Environment. The work is linked to other Lake Roosevelt work, and to other white sturgeon work in the Basin. The lack of a project history and accomplishments suggests that this is a mislabeled project and should be considered new. There are good long-term objectives and tasks, methods related to them, and apparently good facilities and equipment for doing the work. The relationship of this project to others is clear. The methods to be employed are thoroughly explained and related to objectives. The budgetary request appears justified, with clearly documented expenditure categories. It is needed work and seems to be a good plan for doing it. However, taken as an existing project from 1995, a different perspective needs to be given. What has been going on since 1995? No results are provided. There is no way to judge this project on its productivity since apparently being funded. Compared to last year's proposal, this one presents better information on methods, but it should be broken into tasks with times attached.

ProjectID: 9700400

Resident Fish Stock Status Above Chief Joseph And Grand Coulee Dams

Kalispel Tribe of Indians

Short Description: Assess the stocks and status of all 39 resident fish species known to exist in the blocked area. Investigate interactions between species and habitats. Recommend and implement management actions for blocked area fisheries based on investigations.

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$421,000 / CBFWA Funding Recommendation = \$421,000

Recommendation:

Fund. OK for multi-year review cycle. Review in FY2002 for reporting of results to date.

Comments:

This project proposes to collect baseline information about species distribution and density, and habitat quality and use, in areas above Chief Joseph and Grand Coulee Dams that a prior synthesis of available information indicated was lacking. The specific methodologies proposed seem scientifically sound and this information is crucial for biologically sound management of fish populations. Thus, this proposal was highly recommend for funding.

The proposed work is related to a specific FWP measure, the Blocked Area Plan, and a Kalispel Natural Resources Department Management Plan. It is related to 13 existing projects in the area and one proposed project, for primarily information exchange and coordination. There seems at first reading to be overlap with other projects on all resident species, although this project is coordinating the stock inventories of other projects. A good list of accomplishments in this regard is given, including setting up a data storage and analysis system, conducting a Spokane River assessment, and mapping the distribution of resident fish. There is currently emphasis on certain data sets (Box Canyon Res., Boundary Res., Yokum/Half Moon lakes, tributaries of Spokane R. and Lake Roosevelt). This prioritization is appropriate, especially considering the other projects underway. There is significant cost sharing with industry (PUD and Seattle City Light). The narrative is well written and informative, giving results. The work follows the ISRP recommendation for conducting an inventory of resident fish. The objectives and methods are good, although the methods are more extensive than was necessary. This is a well justified and planned project. There is some shifting in emphasis from inventory of existing data to obtaining more baseline data, which is appropriate. Multi-year funding might be appropriate.

This work is certainly significant to the FWP, with good match on costs. But the methods should describe sampling design in addition to the procedures described. What does "important to note this is not a statistical study" mean? How can you monitor without a statistically designed sample? The proposal needs a completion date and critical milestones. There is no explanation of the subcontract work. Subcontracts need to be considered as part of the proposal.

ProjectID: 20081

STOI Wildlife Land Acquisition And Enhancements.

Spokane Tribe of Indians

Short Description: Acquisition of lands for habitat protection, restoration, enhancements for target species. Partial mitigation for inundation losses of habitat on the Spokane Indian Reservation due to construction of Grand Coulee Dam.

ISRP Recommendation - DNF / CBFWA Tier 2 / ISRP Comparison with CBFWA: Disagree-DNF

Sponsor Funding Request = \$2,032,750 / CBFWA Funding Recommendation = Recommendation:

Do not fund. The proposal does not adequately justify the priority of the land to be purchased or the restoration activities. Poorly prepared proposal.

Comments:

Reviewers found this proposal to be poorly prepared and inadequate for scientific review. The only concrete information presented is the desire to acquire 1338.5 acres of land for habitat protection, restoration, and enhancement. The proposal basically does not address what needs to be enhanced, how it will be enhanced, what the expected positives and possible negatives to target and non-target species basically will be, or why this land is more valuable than others. The effectiveness of the monitoring and evaluation program cannot be evaluated because the program basically is not described.

The proposal is poorly developed and repetitious in several areas. No rationale is given for acquiring this land, in terms of either attractiveness for wildlife or costs (which seem to be a high price per acre). It is related to the FWP but only generally for mitigation of Grand Coulee Dam. It shows no relationships to other BPA-funded or other projects. There is a good history of the land area purchased and Habitat Units (HU) obtained and remaining to obtain. Objectives are fine, including expected HU results (but not clear whether these were actually measured). The emphasis appears to be entirely on meeting the HU debt, rather than on actions seeking to improve the condition of wildlife. There is no HEP mentioned. Nowhere is the value of the land described in terms of the relative value of this type of habitat. Monitoring plans are not explained, except by reference. The project is related to fish and wildlife benefits in the Basin only in a cursory manner. No relevant relationship to other projects is clearly established.

ProjectID: 9800300

O&M Funding Of Wildlife Habitat On Stoi Reservation For Grand Coulee Dam

Spokane Tribe of Indians

Short Description: Operations and maintenance of lands acquired for wildlife protection of SIR

ISRP Recommendation - Delay Funding / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-until corrected

Sponsor Funding Request = \$97,187 / CBFWA Funding Recommendation = \$97,187
Recommendation:

Delay funding until more sufficient detail is given on operation, maintenance, and monitoring for wildlife values in terms of biological gains for target species.

Comments:

This is a project to carry out operation, maintenance, and enhancement of lands purchased between 1996 and 1998 as mitigation for Grand Coulee flooding of habitat on the ST reservation, with the expectation that the project will continue for the lifetime of the Grand Coulee project. The overall project from planning to completion of land acquisition has been underway since 1991, under various titles and project numbers.

The proposal follows the approach for wildlife projects laid out by the Council and CBFWA. It is based entirely on habitat unit (HU) accounting. The objectives are well laid out in this context as fencing for livestock exclusion and noxious weed control (75%; overall basin-wide objectives for acquired wildlife lands) and monitoring for development of habitat enhancement opportunities (actual enhancement work to be done in subsequent years). The results are well described since 1991, all in the context of land acquisition and HUs. The budget is explicit, although support for 2.2 FTEs seems high for such a routine project. Facilities are described well, and staff are well summarized.

The proposal lacks detail in several important aspects. It is weak in describing restoration objectives. The baseline data and plans to monitor wildlife and vegetation parameters are inadequate. Operation and maintenance activities should be better described. The descriptions of the type and extent of fencing and evaluation of the most sensitive areas should be expanded. The same exact wording appears under more than one heading in the proposal. Confusion exists between objectives, tasks, and methods. The proposal includes an apparent long-term (perpetual?) commitment to control weeds, a questionable element at best.

A principal drawback is one that is common to many wildlife proposals. The benefits of the project are not given in biological terms that relate to the target species listed in the initial part of the proposal. Habitat Units do not say much about direct benefits to whitetail deer, mule deer, yellow warbler, etc. Further, Habitat Units are not described nor are the HEP models used to obtain the units. The novice reader is left without any means for evaluating fundamental biological benefits.

ProjectID: 9106100

Swanson Lakes Wildlife Area

Washington Department of Fish and Wildlife

Short Description: This project request is for the third year operation and maintenance funding for the Swanson Lakes Wildlife Area covering over 19,000 acres in Lincoln County.

ISRP Recommendation - Delay Funding / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-until corrected

Sponsor Funding Request = \$247,500 / CBFWA Funding Recommendation = \$247,500

Recommendation:

Delay funding until proposers report biologically measurable results-to-date in relationship to benefits to the target species and develop biologically measurable objectives for sharp-tailed grouse.

Comments:

This is O&M for wildlife area mitigation for Grand Coulee dam, to be managed for the recovery of sharp-tailed grouse. Objectives are presented, but all are tasks. Very little detail is presented about the specific activities to enhance and monitor. All is to be done in the future. How does this activity fit into the overall picture for sharp-tailed grouse? The proposal needs to be put into perspective about what is being done, what needs to be done, what progress is being made, and how.

There is no doubt that this is a worthy project. The budget, however, seems to be extremely lopsided to salaries with little or no direct ties to specific tasks. Thus, one cannot objectively assess whether the budget is appropriate or excessive. Another drawback of the project is the small emphasis, in terms of budget, placed on monitoring. It is not evident that this effort will allow a reliable assessment of attaining project objectives in terms of sharp-tailed grouse abundance.

The proposal quality is below average. The FWP is referenced, as well as management plans for the area and target species. The project purpose is stated to involve land purchase and habitat management for wildlife, especially sharp-tailed grouse. However, the objective statements seem poor for the relatively high cost of the project. The proposal has an especially good background section, except that the reasoning is not clear for using Grand Coulee mitigation when the main decline in habitat for the target bird species is for other reasons. Good relationships with other projects are given. How this project fits in with a comprehensive plan to protect sharp-tailed grouse was never made clear. The ESA status and placement of the Swanson Lakes site in relation to the range of the species (periphery? core?) was not made clear. This may be an important wildlife project, but the proposal does not adequately describe benefits to wildlife. After several years of the project, there should be some indication whether there have been population increases. The fire protection element of the proposal needs to be better described; it may be counter to the biological needs of the grouse. The proposal should identify species-related objectives. The group would like to have seen information on the carrying capacity of the habitat. There was no indication of benefits for other species. There are no resumes given for staff, and no results for the target species. This makes an unpersuasive proposal.

ProjectID: 20509

Hellsgate Big Game Winter Range Umbrella Project

Colville Confederated Tribes, Fish & Wildlife Department

Short Description: Umbrella project to protect, mitigate, enhance and evaluate wildlife habitats and species for partial mitigation for losses to wildlife resulting from Grand Coulee and Chief Joseph Dams.

ISRP Recommendation - na / CBFWA Tier na / ISRP Comparison with CBFWA: Umbrella Proposal

Sponsor Funding Request = \$ / CBFWA Funding Recommendation =

Recommendation:

NA - Umbrella Proposal

Comments:

Reviewers commented on the inadequacy of this umbrella proposal. Land acquisition is extremely important in the region but the umbrella was not informative. The authors should supply a history of their efforts not just of funding. They should provide more details on their objectives. This umbrella proposal, intended to be an overall explanation of why a set of projects needs to be done, falls short in a number of ways. First is the relationship between past and proposed land acquisitions to each other. Do they tend to form continuous or connected parcels or are they essentially all independent of each other? The former is preferred. Second, whether or not there are any potential benefits to other organisms by the proposed acquisitions is not even considered. What parcels are targeted for acquisition and why and how they relate to the overall goals of the Fish and Wildlife Program are not discussed. In general, the umbrella was not useful.

ProjectID: 9204800

Hellsgate Big Game Winter Range Operation And Maintenance Project

Colville Confederated Tribes, Fish & Wildlife Department

Short Description: To protect, enhance and evaluate wildlife habitats and species for partial mitigation for losses to wildlife resulting from Grand Coulee and Chief Joseph Dams.

ISRP Recommendation - DNF / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-DNF

Sponsor Funding Request = \$383,225 / CBFWA Funding Recommendation = \$350,000

Recommendation:

Do not fund. The proposal is technically inadequate.

Comments:

Although the review team included staunch advocates of acquisition as mitigation for loss of wildlife habitat, the group could not recommend this project for funding. The project is described as a means to “provide increased bio-diversity” but how this would be accomplished is not explained. There is no clear relationship established between habitat acquisition and the species that will benefit, i.e. conservation status of species, seasonal distributions, limiting factors, etc. In addition, the proposal states “This project is not directly linked to projects being carried out by other entities in the basin.” The team found that statement incredible and failed to see how any acquisition program can be effective without coordination with other such programs in the area.

The proposal is not a stand-alone document and it should be. It refers to a draft document but they do not summarize the document. The existence of a BPA statement of work is not sufficient. Proponents should describe their restoration methods and not just the tasks, as noted last year (see ISRP FY99 report, Appendix A page 65).

The proposal is quite vague in explaining what tasks are required for specific sites and why. A reviewer cannot tell what specifically needs to be done in particular areas to meet specific objectives. Thus, one cannot begin to assess the appropriateness of the budget. Too little information is provided on objectives, methods, enhancement goals, and measurable milestones, although the proposal says that its purpose is to “protect, enhance and evaluate habitats and species.” The group noted that the proponents were advised in the ISRP’s FY99 comments to better justify their project.

ProjectID: 9506700

Colville Tribes Performance Contract For Continuing Acquisition

Colville Confederated Tribes, Fish & Wildlife Department

Short Description: To project, enhance and evaluate wildlife habitats and species for partial mitigation for losses to wildlife resulting from Grand Coulee and Chief Joseph Dams.

ISRP Recommendation - DNF / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-DNF

Sponsor Funding Request = \$1,500,000 / CBFWA Funding Recommendation = \$400,000

Recommendation:

Do not fund. Proposal is technically inadequate. Proposers need to describe their plan, the specific properties they plan to protect, specific benefits to fish and wildlife, and criteria to prioritize potential acquisitions.

Comments:

The proposal is attractive for its attempt to acquire conservation rights to lands adjacent to those already set aside for conservation purposes. This has the potential to significantly increase the value of the conservation area. How important this is in relation to acquiring disjunct lands that may benefit a different suite of species, however, is not addressed in the proposal. Furthermore, while the proposal clearly indicates what wildlife species are expected to benefit, it makes no attempt to discuss what potential benefit there may be to these resources as requested by the Council. Other than suggesting that the proposed acquisitions may serve as winter range for large mammals and be suitable for a variety of other species, the actual or potential habitat(s) sought and their relation to already acquired habitats are not described.

Sponsors seek \$1.5 million, but give no detail on the properties they propose to acquire and neglect to describe criteria to prioritize acquisition of properties. The proposal should describe the conservation easements, etc, to be placed on the lands. It is inadequate to justify an acquisition by simply providing a “list of state sensitive and/or candidate species” which may or may not occur on or near proposed acquisitions. Also, there is no clear relationship between species to be benefited and the habitat needs and/or limiting

factors (locally and regionally) of those species. In addition, relationships between this project and others in the region are not presented. Finally, project objectives are poorly thought out and vague. What was accomplished with last year's \$150k budget? Why were not candidate properties located and assessed so that they could be prioritized for this year's work? There does not seem to be any plan or systematic thinking here.

ProjectID: 9004401

Lake Creek Land Acquisition And Enhancement

Coeur d'Alene Tribe

Short Description: Protect, enhance, and maintain wetland and riparian habitat in the Lake Creek drainage as partial mitigation for the impacts attributed to the construction and operation of the Albeni Falls hydroelectric facility.

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$140,423 / CBFWA Funding Recommendation = \$140,423

Recommendation:

Fund. OK for multi-year review cycle, with review in FY2003 for reporting of benefits to target species.

Comments:

This is an example of a good wildlife proposal. The methodology described is especially impressive. This is a well written, comprehensive proposal that warrants continued funding. Several FWP measures are identified, along with several other plans (e.g., Lake Creek Watershed Assessment; Albeni Falls Wildlife Protection, Mitigation, and Enhancement Plan). The work is Albeni Falls Dam mitigation, but also is related to Grand Coulee Dam mitigation. The project plan is given as consistent with the O&M guidelines of CBFWA wildlife managers. There are excellent background, rationale, objectives, and methods. The current work was preceded by thorough surveys. Costs are reasonable. Complete resumes were provided. Only unwanted side effects seems to have been left out of the discussion. The project seems a good candidate for multi-year funding.

This is a good project that is based on the watershed management concept for both fish and wildlife. There is good coordination between agencies, and outreach is included. There is a management strategy. The proposers need to be more specific about outputs and measurable milestones. There is good layout of methods for planning and land management. It is good to have desired outcomes specified. It is a good example of a systematic approach to acquisition and enhancement. It is well thought out, planned, and scientifically sound. It integrates very well wildlife conservation and restoration of native salmonid fishes as mitigation measures. The involvement of and linkage to many other projects, often being conducted by other agencies, in the drainage makes it part of a true watershed ecosystem approach to mitigation and conservation.

The set of three interrelated Coeur d'Alene Tribe proposals (including 9004400, 9004401, 9004402) might have benefited from an umbrella.

ProjectID: 9004402

Coeur D' Alene Tribe Trout Production Facility

Coeur d' Alene Tribe

Short Description: Produce fish in support of on-going Coeur d'Alene Tribal fisheries enhancement projects. Complete Step 3-Final Cost Determination of the

NPPC 3-step process, construct and begin hatchery operation. Evaluate effectiveness of fish production facility.

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$1,553,244 / CBFWA Funding Recommendation = \$1,500,000

Recommendation:

Fund, but only if the construction plans are approved and NEPA findings are favorable.

OK for review by BPA COTR.

Comments:

Although this is supposed to be a proposal to acquire funds for the construction of a salmonid fish hatchery, the majority of the proposal addresses other, albeit related, issues: e.g. perceived biological and mitigation need for the hatchery, land acquisition and habitat improvement projects, an emphasis on using native populations for supplementation purposes, hatchery operation including spawning procedures, and monitoring and evaluating effectiveness of hatchery releases in helping obtain mitigation objectives. In terms of construction, therefore, it is very difficult to evaluate. The hatchery appears to be an integral part of a larger well thought out and potentially valuable mitigation program.

The proposal was well written and comprehensive, in the midrange of quality of those reviewed. The FWP and 13 other planning documents are referenced as justification. The proposal discusses a good history of accomplishment for this project, including much survey work with recommendations, demonstration projects for stream rehabilitation, fish stocking, stock identification using genetics, and development of the hatchery master plan. It is all well documented in literature citations. There is excellent background and rationale, and the need for the hatchery is presented in the project history. Objectives and tasks are well laid out. Monitoring is planned well. The budget is well justified, but skewed toward the hatchery construction. Resumes of staff are provided and there are good plans for information transfer. This would be a good candidate for multi-year funding.

The use of native stocks is a particularly attractive part of the proposal. Are effects on other fish being monitored? The project involves a watershed assessment and habitat restoration. There is good coordination with habitat restoration and protection of wetlands and riparian habitat. About 2/3 of the budget is for construction but adequate information is not provided on the construction activities, schedule, or contractors. These should be handled in NEPA review and other processes for approval of construction. Where is the hatchery going to be located?

The set of three interrelated Coeur d'Alene Tribe proposals (including 9004400, 9004401, 9004402) might have benefited from an umbrella.

ProjectID: 9004400

Implement Fisheries Enhancement Opportunities: Coeur D'alene Reservation

Coeur d'Alene Tribe

Short Description: Enhance critical watershed habitat to mitigate limiting factors for westslope cutthroat and bull trout in the Coeur d'Alene subbasin. Maintain compensatory harvest opportunities and develop environmental educational programs in local schools.

ISRP Recommendation - Fund in Part / CBFWA Tier 1 / ISRP Comparison with CBFWA: Partially agree-fund in part

Sponsor Funding Request = \$685,254 / CBFWA Funding Recommendation = \$685,254

Recommendation:

Fund in part. Objectives 1, 2, and 4 are OK for multi-year review cycle, review in FY2003 for reporting of results. Do not fund objective 3 (24% of budget), the put-and-take trout pond objectives, until they are better justified and subjected to environmental review for potential impacts to native biota.

Comments:

This project is basically a habitat restoration and education program to enhance the natural reproduction of native westslope cutthroat trout to mitigate losses of Pacific salmon and steelhead. It has many strengths: a strong watershed/ecosystem approach in collaboration with other projects, a well thought out scientifically rational approach, a strong monitoring program, an emphasis on improvement through natural processes compared to human technological intervention, an emphasis on native species of fish and plants, and an awareness of the need to obtain public support, over a relatively long time frame, via education and demonstration of success. We stand to learn and gain a lot from this project.

This was a well written and comprehensive proposal. Reviewers especially commended the project's emphasis on the conservation/enhancement of native species, and on habitat improvement as a mechanism. In addition, the relationship to other projects is very strong and well documented. The project history is clearly explained. Objectives and methods are concisely related (although they could have been better "cross-walked" with the budget). Taken on balance, this project proposal is very compelling, well thought out and clearly articulated.

The FWP and 12 other planning documents are referenced. This is one of three CDA Tribe projects (9004401, 9004402) that could use an umbrella. There is a good history of accomplishments (many the same as 9004402, which suggests that an umbrella proposal might have been appropriate). There are good objectives and tasks for 4 target watersheds. Cost sharing with EPA and USDA is a definite plus, considering the high temperatures and high sediment loads. There are good sections on background and rationale, as well as excellent history, and objectives narratives. The methods narrative of objectives by tasks is excellent. Facilities and budget seem reasonable. The resumes look good, as do the plans for information transfer.

This project has good coordination with other projects, but needs to specify how its activities justify a large budget and how they are different from enhancement under the wildlife project? It needs to present more detail on interim results – more interpretation of

where they are in relation to where they began and where they want to go. The artificial put-and-take trout ponds are a separate objective in this proposal and deserve further specific review. They should describe assurances that these trout ponds are in a closed system. Will they be located in a floodplain? This objective deserves to be put on hold until better explained and justified.

The set of three interrelated Coeur d'Alene Tribe proposals (including 9004400, 9004401, 9004402) might have benefited from an umbrella.

Pend Oreille

ProjectID: 9500100

Kalispel Tribe Resident Fish

Kalispel Tribe of Indians

Short Description: Assess native trout habitat in tributaries to the Pend Oreille River and implement recommendations for enhancement. Provide largemouth bass habitat in mainstem Pend Oreille River and supplement population. Monitor and evaluate all enhancement measures.

ISRP Recommendation - Fund in Part / CBFWA Tier 1 / ISRP Comparison with CBFWA: Partially agree-fund in part

Sponsor Funding Request = \$297,000 / CBFWA Funding Recommendation = \$297,000

Recommendation:

Fund in part. Fund objectives related to habitat restoration and monitoring of naturally producing bass. Do not fund bass supplementation objectives (40%), considering the general abandonment of this as ineffective in most parts of the country and the potential effectiveness of creating over-winter habitat for natural production.

Comments:

This was a well prepared and thorough proposal. The FWP and 4 other plans are referenced. There are two other related projects, 9700400 and 9700300. There are clearly two projects wrapped into one here, one on trout in tributaries and the other on largemouth bass in the reservoir. The distinction between the two types of work seems to have been well justified, although the value of each needs to be considered separately. The prospect of supplementing largemouth bass in the reservoir was surprising (considering general abandonment of largemouth bass stocking as ineffective in most other parts of the country). The list of objectives was complete. There is a good pre-and post-enhancement monitoring plan. The objectives, methods, and facilities narratives were good. Based upon the criteria provided for evaluation, the proposal is technically sound. It is one of the few with clearly stated and measurable objectives. Also, methods are concisely related to objectives. Relationship to other projects and budget sections are a bit weak. Nonetheless, when taken on balance, this project proposal is above average.

Nonetheless, the review team had a number of problems with specific aspects of this project. First is the enhancement project for salmonid fishes in the tributaries. These may be effective in terms of increasing abundance in the short term, but do not do much to enhance long term population viability. It appears the populations are all highly

isolated from each other and, thus in the long term highly susceptible to extinction from a variety of potential causes. The proposer did not adequately explain why these populations should be protected and enhanced. Sustainability of small trout populations in tributaries is questionable, likely leading to perpetual supplementation.

Next is the bass supplementation program. Philosophically the group was in support of efforts to assess and enhance habitats for native species and not enthusiastic about enhancing and supplementing largemouth bass populations. It does not appear that bass spawning habitat is limited, so it is not clear why the habitat improvements are not conducted first to see if natural reproduction is capable of sustaining a viable fishery. It is not clear if hatchery production is to be sustained by a captive broodstock or fish collected from the wild. If the former, the number of adults used is far too small to maintain genetic variation and long term viability. Are they monitoring ecological impacts of bass?

This proposal responds well to the ISRP's FY99 comments, but there continues to be a question regarding the potential conflict between enhancing trout habitat and releasing largemouth bass. The proposers should focus on improving over-winter habitat for naturally producing bass, rather than pursuing bass supplementation. There is too much experience with ineffective (unnecessary) bass supplementation elsewhere in the country to support it here.

ProjectID: 20007

Acquire And Conserve Priority Bull Trout Habitat In Trestle Creek Watershed

River Network

Short Description: Purchase conservation easements and/or fee interests on 800 acres of private land in the watershed of Trestle Creek, a crucial bull trout spawning and rearing stream in the Lake Pend Oreille Basin, Bonner County, Idaho

ISRP Recommendation - Fund / CBFWA Tier 2 / ISRP Comparison with CBFWA: Agree-fund (Tier 1?)

Sponsor Funding Request = \$276,370 / CBFWA Funding Recommendation = \$50,000

Recommendation:

Fund (high priority). OK for duration of project through FY2001 as proposed.

Comments:

This is a proposal to acquire, either through purchase or conservation easements, private lands in the lower reaches of Trestle Creek and to conserve high quality habitat for bull trout, mainly using passive restoration. This project directly addresses the major threats to bull trout in the drainage, which are disruptions of normal ecological processes in the lower drainage by residential development. This project proposal addresses enhancement of an important population of a native species that is clearly in trouble. The project will acquire critical habitat to protect it against the effects of residential development. The review team was particularly impressed with the inclusion of information regarding the probability of success for the project.

The proposal itself was of high quality. The proposal references the FWP measure and two other plans: a watershed assessment and a bull trout conservation plan. The project is important for purchase of easements or title to lands near the mouth of Trestle Creek to ensure continued bull trout conservation (adfluvial bull trout use this creek extensively). There is excellent cost sharing (about half) and excellent background narrative, showing good planning efforts and problem definition. There is a good rationale (to sustain habitat and populations, rather than rehabilitation after degradation). Objectives and methods are straightforward, logical, and reciprocally related. Monitoring will be by IDFG. The project is the result of good regional planning and cooperative efforts by agencies and other organizations. This proposal addresses the ISRP's FY99 recommendation regarding habitat restoration projects. This is a good example of a habitat protection proposal.

ProjectID: 9404700

Lake Pend Oreille Fishery Recovery Project

Idaho Department of Fish and Game

Short Description: Enhances resident fish populations by changing the winter draw down of Lake Pend Oreille and the Pend Oreille River and researches other possible mechanisms for fish declines including predation and competition.

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA:

Agree-fund

Sponsor Funding Request = \$379,000 / CBFWA Funding Recommendation = \$379,000

Recommendation:

Fund. Recommend for funding for a longer duration. The project should be funded to cover at least one and preferably two kokanee generations. OK for multi-year review cycle; review in FY2002 for analysis of results. (Priority for Lake Pend Oreille fishery.)

Comments:

This project proposes to elevate winter water levels in Lake Pend Oreille by four feet to investigate whether or not it will have a positive impact on kokanee salmon abundance by increasing available spawning habitat and on warm water species in the Pend Oreille River by increasing the amount of suitable over-winter habitat. In addition, the project will simultaneously investigate whether competition with Mysis shrimp for food and predation by Kamloops, bull trout, and lake trout play a significant role in regulating kokanee abundance. The project was initially reviewed by the ISAB in 1997 as an experiment to see if keeping lake elevations high in winter would aid kokanee spawning and increase the lake population. The ISAB concluded that, given natural variability and numerous confounding factors, the time frame of essentially a little more than one kokanee generation is probably too short to reach definitive conclusions. This can be rectified by extending the length of the project and including study of the other factors.

The proposal is thorough and scientifically sound, except for the point brought up by last year's reviewers that a longer time frame is needed. It includes work on other factors possibly related to kokanee abundance that were considered by the ISAB. The proposal references the FWP and one other plan. There are no other projects on Pend Oreille Lake

to reference. There is an excellent list of objectives and tasks. University studies are included as well as the funded work. The schedule has been maintained despite abnormally high flows, and there is consideration of a longer time frame for the work (which the ISAB and ISRP have encouraged). The narrative sections are all excellent. The rationale appropriately links the work to CBFWA criteria. Accomplishments are listed and discussed in relation to the abnormally high flows. There has been good progress. The proposal should give more detail on the three projects that are subcontracted.

ProjectID: 9700300

Box Canyon Watershed Project

Kalispel Tribe of Indians - Kalispel Natural Resource Department

Short Description: Utilizing a cost-share approach with public and private resource managers, BCWMP prioritizes and implements protection and enhancement of upland areas in a target watershed.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 3 / ISRP Comparison with CBFWA: Disagree-fund, but not high priority

Sponsor Funding Request = \$70,256 / CBFWA Funding Recommendation = Recommendation:

Fund for one year (medium priority). Subsequent funding contingent on a better description of the watershed plan and monitoring methods.

Comments:

This project is basically a re-evaluation of conditions in the upper watershed of Cee Cee Ah Creek in terms of presently degraded fish habitat, identification of land management activities most significantly contributing to this degradation, and implementation of remedial actions to improve the habitat for westslope cutthroat trout and bull trout. This project appears to be taking a watershed approach to rehabilitating native salmonid habitat, which is desirable.

The assessment approach seems reasonable, but the enhancement and monitoring approaches are vague. The former mainly reflects the fact that specific actions cannot be proposed until after the assessment. The latter, however, can be stated more precisely at this point, so this is a flaw of the proposal. Another problem is the long-term viability of the salmonid populations in this isolated headwater area. At this point the team recommends funding the watershed assessment portion, but would hold off on funding rehabilitation projects and monitoring until these are more concretely stated.

The proposal is well written. It references the FWP measure and both the tribal management plan and the CBFWA Resident Fish Caucus Multi-Year plan. It lists four related projects. The work is oriented toward habitat restoration in the upper watershed to compliment work in the downstream waters. Accomplishments in 1997-98 have been good, and the project received an award in 1998. There are good objectives and tasks. The plan is to cover one tributary watershed to Box Canyon Reservoir at a time, starting with Cee Cee Ah Creek. There is excellent cost sharing (half again) plus other cooperating organizations. One wonders if this might have been a USDA Forest Service project instead of BPA, because so much of the land is already FS. There is a good

abstract. The background gives good information on the relationship of this project to the broader Kalispel Resident Fish Project. There is a good, structured approach to the proposed work. Methods are a bit vague, though. Facilities seem fine. This is a great project for a small amount of money.

As the ISRP commented in its FY99 review (page 67), the description of methods and monitoring continues to lack needed detail, but the project takes a broad perspective and is well connected to other efforts in the watershed.

ProjectID: 9206100

Albeni Falls Wildlife Mitigation

Albeni Falls Interagency Work Group

Short Description: Protect, enhance, and maintain important wetland wildlife habitat in the Lake Pend Oreille vicinity as ongoing mitigation for construction impacts associated with the Albeni Falls hydroelectric project.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$4,417,686 / CBFWA Funding Recommendation = \$2,195,237

Recommendation:

Fund for one year. Subsequent funding contingent on a better description of the maintenance and monitoring methods, as noted in the ISRP's FY99 report, Appendix A, page 65-66. This proposal may have been adequate for the requested multi-year funding if the proposal had provided this information.

Comments:

This is a proposal to acquire either through purchase or conservation agreements additional wetlands for wildlife conservation purposes in the Pend Oreille drainage, enhancement of already protected lands, routine maintenance of already protected lands, and monitoring and evaluation of protection and enhancement measures. Potential acquisition sites are selected through a prioritization process including an initial habitat evaluation and identification of potential enhancement requirements or opportunities, enhancement activities are performed using somewhat standardized techniques to improve habitat quality and wildlife abundance, and monitoring and evaluation conducted by subsequent habitat evaluation. This is a very logical and rational approach. The only drawback of this approach is that it does not consider potential conflicts between expansion of wetland habitats (e.g., lake level) and fisheries mitigation issues. These are probably best resolved, however, on a case by case basis.

The proposal is for a 5-year time frame, having assumed its qualification for multi-year funding. It has been in operation since 1990. The proposal references the FWP and 4 other plans. The work is related to two other BPA projects and one non-BPA one. It follows the mitigation status and management plan established early in the project (1995-96). There have been good accomplishments (planning first then habitat unit protection). The objectives and tasks are good: obtain, enhance, maintain, monitor. Most of the expensive project is for possible land acquisitions. There is a small amount of cost sharing. There is a good (if long) abstract, good background, and good rationale. There

are clear relationships to other projects. The project history, however, is not focused on the project, which gets just one paragraph. Although the multi-year costing may seem presumptuous, it is a good approach. The project might qualify. Objectives and methods are good. No resumes for staff are provided but are needed.

As the ISRP commented in its FY99 review (page 65-66), the description of methods for maintenance and monitoring continue to be inadequate. This proposal could still use more detail on planned maintenance and monitoring. The proposed budget is high and should be examined to determine if costs are reasonable. There is unspecified subcontractor activity.

ProjectID: 9106000

Pend Oreille Wetlands Wildlife Mitigation Project - Kalispel

Kalispel Tribe of Indians

Short Description: Protect, restore, enhance and maintain important wetland/riparian wildlife habitat along the Pend Oreille River as partial mitigation for the construction and operation impacts associated with Albeni Falls Dam consistent with regional planning documents.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$153,917 / CBFWA Funding Recommendation = \$153,917

Recommendation:

Fund for one year. Subsequent funding contingent on provision of results. This proposal may have been adequate for multi-year review cycle if they had provided a better description of results to date.

Comments:

This project proposes to enhance already acquired wetlands for conservation to increase wildlife abundance, maintain existing enhancement measures, and monitor and evaluate in terms of wildlife abundance past and proposed enhancement activities. The project is not land acquisition (that was done in 1992 and 1997) but restoration/enhancement, operations, and monitoring. Enhancement procedures are designed appropriately for specific habitat types, and all past and present activities are to be thoroughly monitored. When monitoring indicates a failure to meet project objectives modification will be enacted. This is a logical and rational approach. A drawback of this proposal is that it does not consider potential conflicts of obtaining project objectives with fisheries mitigation projects in the area. However, this appears to have been a successful project.

The proposal quality was good, in the midrange of those reviewed. The proposal references the FWP and several other statements and plans. It is related to two other projects (920611, 9004401). It involves two tribes and IDFG as a working group. There have been good accomplishments since 1991. There is good background, rationale, and relationships to other projects. The good project history shows good planning and agency cooperation. Objectives, methods, and facilities are fine. The budget seems reasonable. There are good resumes of staff. This could be a good candidate for multi-year funding.

The primary shortcoming of the proposal is the failure to provide data on the target species using the site. After over 7 years, it is poor to say they still do not have a management plan. What's the plan here for M&E? What are the milestones? It is pretty far into the project to be presenting so little monitoring and evaluation information.

Flathead

ProjectID: 20554

Hungry Horse Fisheries Mitigation Umbrella

Montana Department of Fish, Wildlife and Parks

Short Description: Enhance and protect native fish communities in the Flathead Basin through multi-species watershed assessments, fish passage improvements, habitat protection and enhancement, improved river flow and temperature conditions, reservoir operation strategies, o

ISRP Recommendation - na / CBFWA Tier 3 / ISRP Comparison with CBFWA: Umbrella Proposal

Sponsor Funding Request = \$ / CBFWA Funding Recommendation =

Recommendation:

NA - Umbrella Proposal

Comments:

This is an informative umbrella for the proposals that it covers. It would be much better if it covered the other proposals in the Flathead watershed, too. A map would be very helpful. The human dimensions efforts in the subbasin are innovative. The hatchery needs to be pulled into the strategy pursued by the other groups in the subbasin. The Rosgen method should work here, but there is no evidence presented in the proposal that the method fairly represents reach characteristics of this drainage nor of its relevance to the ecology of the system. This classification method is size independent, and the major stream paradigm (River Continuum Concept) is explicitly size dependent. The basic restoration philosophy of the set of proposals should be described. Several projects could be used to test hypotheses, but the hypotheses are not stated. The overlap of the proposals is troublesome. In comparison to efforts in other subbasins, this group should be commended for their cooperative efforts.

However, the ongoing projects need a 5-year plan with a comprehensive review by a visiting peer review committee. There needs to be a mechanism to allow innovative new proposals to be incorporated into well integrated ongoing projects. The Council/managers/ISRP should identify gaps in current subbasin recovery efforts and release specific requests for proposals to fill these gaps.

The umbrella should address goals in terms of generations of the target species and geomorphologic time. Currently, the goals seem to be rather short-term. Also, care needs to be taken to specifically identify and propose work for the fiscal year of the proposal, as well as having a general long-range plan. Time horizons should be specified for major milestones both within proposals and among them.

ProjectID: 9101901

Flathead Lake Monitoring And Habitat Enhancement

Confederated Salish and Kootenai Tribes

Short Description: Implement and monitor fisheries improvement activities within the Flathead Indian Reservation portion of the Flathead Lake basin. Research factors limiting successful application of mitigation measures within Flathead Lake.

ISRP Recommendation - Fund in Part / CBFWA Tier 1 / ISRP Comparison with CBFWA: Partially agree-fund in part

Sponsor Funding Request = \$95,000 / CBFWA Funding Recommendation = \$95,000

Recommendation:

Fund in part, for one year. The objective to quantify the trophic level (University of Montana) is not sufficiently described to justify funding at \$35K. The set of Flathead proposals needs a comprehensive review by independent scientists, via a visiting committee. The ISRP suggests that funding for the trophic-level objective be deferred until the suggested comprehensive review can be conducted, and that interim funding continue at the current level. The project would be a likely candidate for multi-year review cycle if the proposal included a better description of habitat to be recovered and had biologically measurable objectives.

Comments:

This project is a component of the Hungry Horse Fisheries Mitigation umbrella (20554), the specific goals of which are to monitor various mitigation and enhancement activities within the Flathead basin. These include restoration activities within various Flathead Lake tributaries (e.g., Spring, Skidoo, and Dayton Creek) and within the lake. The funding level for the project is modest, but it is integrally tied to various other projects under the same umbrella, so appropriateness of the budget cannot be fully determined. Insofar as this, and various other components of the same umbrella, are continuing projects, projected to continue indefinitely, some mechanism for conducting an integrated review of all projects (e.g., via a visiting review committee) would be more appropriate than annual review, which of necessity cannot be thorough. It also would be more appropriate for the project to propose for a multi-year period (e.g., 3-5 years), perhaps after the suggested overall review is complete and comments are in hand. At that point, annual progress reports could be made, and reviewed as an administrative action. Insofar as the requested budget increase for the University of Montana (\$35k) is concerned, this request could be deferred until the suggested comprehensive review can be conducted, and that interim funding continue at the current level.

The proposal was reasonably well written (much better than last year), and falls in the midrange of proposal quality. However, more care needs to be given to identifying work for FY2000, not just the general direction. The proposal relates its work to the umbrella, the relevant FWP measure, ESA listings for bull trout and westslope cutthroat, and 5 specific plans/reports, as applicable to the CSKT reservation portion of the Hungry Horse mitigation. Accomplishments are clear; it is helpful to have them listed as planning, implementation and monitoring. There are clear objectives, although they are more processes. There is much cost sharing. Technical background is good, but the results could be better synthesized. A table of key data could be helpful. The rationale is weak in FY2000 plans. There is a weak description of the relationships to other projects to accompany the earlier listing (the umbrella should be cited). The project history is concise with listing of results of monitoring and implementation. Objectives do not focus on FY2000 plans. Facilities are probably adequate, but description is brief. This is a relatively low-cost part of the overall subbasin project. Multi-year funding might be appropriate.

Specific comments on objectives:

Objective 1 (monitor abundances of bull trout and cutthroat trout): What about the effects of the lake trout-Mysis complex? The point is that the lake trout-Mysis complex may be

such a strong factor that this part of the food web will predominate and that habitat-based management will be ineffectual in restoring native fishes.

Objective 2: At least 3 habitat metrics are not independent measures of habitat restoration. These are (a) area of riparian vegetation planted, (b) miles of fencing installed, and (c) linear distance of stream channel reconstructed. These are not responses by the stream, but human interventions. The biotic measures are fine.

Objective 3: Obtaining baseline information useful for measuring the predation effects of lake trout using the Wisconsin model is a good do-able objective. Weights at age/size class is a missing metric in the list of parameters.

Objective 4 came out of the blue. It does not appear to be connected to anything. Only by reading other proposals do reviewers realize this has to do with diverting fishing pressure away from Flathead Lake.

Objective 5: Subcontracting to the University of Montana and Utah State are good moves. They have been involved in modeling various aspects of Flathead Lake or the lake trout-Mysis trophic axis for some time.

Task 1A. Are these nets fished at the exact same locations? Is this what you mean about fixed locations? Were these locations determined using a random stratified sampling scheme? If not how representative are the locations?

Objective 2, tasks b-e: What process was used to decide between tactics of active vs. passive restoration? Are potential unwanted side-effects considered?

ProjectID: 9101903

Hungry Horse Mitigation - Watershed Restoration & Monitoring (MFWP Umbrell

Montana Department of Fish, Wildlife and Parks

Short Description: Enhance and protect native fish communities in the Flathead Basin through watershed assessments, fish passage improvements, habitat enhancement, off-site fishery restoration, applied research, and project- and watershed level monitoring.

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$498,026 / CBFWA Funding Recommendation = \$498,026

Recommendation:

Fund. The project would be more attractive for multi-year review cycle if it were consistent with regional goals by shifting hatchery plantings to native species such as local stocks of cutthroat.

Comments:

This project is a component of the Hungry Horse Fisheries Mitigation umbrella (20554), the specific goals of which are to mitigate effects of Hungry Horse dam on native fisheries within the Flathead Lake basin. It is an expensive (roughly \$0.5m/year), continuing project that describes a number of specific projects. It is very difficult to determine from the proposal the relative priorities, and their rationale, of the various projects, and how effective they have been (a criticism last year, too). It is also nearly impossible to make such judgments in the format of an annual review. The best mechanism for accomplishing a thorough review, as indicated in reviews of other

component projects of the same umbrella, is formation of a visiting committee for simultaneous review of all of the projects. Following such review, and receipt by the various project teams of review comments, these projects should be invited to propose for a longer period (e.g. 3-5 years), during which annual progress reports could be submitted and assessed administratively. In the interim, continued funding of the project at current base levels would seem appropriate.

The program appears to be a model of success judging from their description of past accomplishments and the abstract. The project has a formalized process (but undescribed) to decide on various tactics to restore habitat. The proposal claims that passive restoration is emphasized. "Before-and-after" monitoring of projects is standard (but proposers do not describe how they account for interannual variation in weather). Not surprisingly, as Marotz helps coordinates the Libby Dam and Hungry Horse Dam management teams, the project is attempting to restore the normal pattern of the hydrograph using integrated rule curves for dam releases. Monitoring suggests that their restoration tack has been partially successful at a minimum.

The program is to reestablish connections of tributaries to drainages, eliminate exotic species, and restore native fishes in off-site lakes and ponds to alleviate fishing pressure on sensitive native stocks.

To repair riparian damage from cattle grazing and logging, the proposers are allowing large woody debris to set up in a quasi-natural process. Large woody debris are not cabled or anchored. This is the preferred process when damage to private or public property is not anticipated. They are accounting for spatial and temporal variability in their redd counts, a procedure that should be, but is not, standard everywhere.

The array of methods used to assess changes in population and community structure is impressive. However, they do not provide evidence of checking for catchability and comparing efficiencies of capture by gear and technique. They are checking for whirling disease and here they recognize that rainbow trout are exotics and potential problems for cutthroat trout via hybridization and competition. Ironically, other proposals (here and in the Kootenai) introduce rainbows as a management tool but are concerned with the status of nonindigenous kokanee salmon.

The proposal was well written and comprehensive, when taken with the umbrella proposal. It was in the midrange of quality of those reviewed. It lists the relevant FWP measures, ESA listings, NMFS hydrosystem opinions, and several specific Montana/Hungry Horse plans. It lists the umbrella and 4 other related projects (two of which are not BPA funded). There is an excellent listing of past accomplishments. The objectives and tasks are good (but more a list of activities), except that more focus on FY2000 is needed. This proposal is more of a multi-year proposal. There is superb cost sharing with many agencies, that raises the total funding by half. The proposal makes use of the umbrella for background, significance, and relationships to other projects. The narrative objectives do not focus on FY2000, but methods do (they are good, extensive). The project is a good candidate for multi-year funding, particularly if more emphasis is placed on native species.

ProjectID: 9101904

Hungry Horse Mitigation - Nonnative Fish Removal / Hatchery Production

U.S. Fish and Wildlife Service

Short Description: Conduct nonnative fish removal in Lake McDonald in Glacier National Park to facilitate restoration of native bull trout and westslope cutthroat trout in the Flathead drainage; produce hatchery fish for offsite stocking to mitigate Flathead Lake losses.

ISRP Recommendation - Fund in Part / CBFWA Tier 1 / ISRP Comparison with CBFWA: Partially agree-fund in part

Sponsor Funding Request = \$428,950 / CBFWA Funding Recommendation = \$428,950

Recommendation:

Fund in part. Do not fund objective 3, non-native stocking.

Comments:

This project is a component of the Hungry Horse Fisheries Mitigation umbrella (20554), the specific goals of which are to remove introduced species from Lake McDonald, and plant hatchery fish elsewhere in the Flathead Lake basin. This is a continuing project, funded at the level of about \$650k annually, which is projected to decrease somewhat over the next five years.

The proposal does not make a compelling case for the planned biological manipulations or the issues involved, although it is an improvement over last year's proposal. It is curious that they planted exotics in their previous management program and are now proposing to eliminate them. As with other projects under this umbrella, a comprehensive review of all such projects should be conducted, perhaps by a visiting committee. In the case of this particular project, where the actions proposed could have long-term consequences, it is essential that such review be conducted as soon as possible.

This was a reasonably well written proposal. It reflects adaptive management well, by shifting emphasis from the unsuccessful kokanee planting project to restoration of a different lake. It lists relevant FWP measures, ESA listings, and three other plans, as well as the other umbrella projects and 2 others. It has a realistic list of accomplishments, including the failed kokanee experiment, which was not the fault of the hatchery. Other work was good. The objectives are good, and focus on FY2000. The new Lake McDonald work seems reasonable. The budget is reasonable, with good cost sharing. The narrative is good, with excellent background for the planned FY2000 work. There is good rationale for the shift in emphasis. The proposal relates the work to FERC relicensing and the FWS own related work elsewhere. Good history and listing of reports. The Technical and/or scientific background section is very thorough. The Objectives and Methods sections dovetail nicely. The methods are good, especially those for the Lake McDonald work. Considering the shift in emphasis, this would not be a good candidate for multi-year funding.

Several questions were raised by the ISRP review, which could be better addressed in the proposal:

What was the central focus of the adaptive management strategy of the Implementation Plan?

Why were exotic rainbow trout (still are) and Kokanee salmon being stocked in waters of the Flathead? Have the potential side effects of introductions that run counter to FWP policies been acknowledged?

Is the mitigation plan to increase fisheries yield or to protect native fishes impacted by dams?

Is there a monitoring plan to see if off site fisheries will reduce, have no effect or even increase fisheries pressure on sensitive populations?

Objective 4 task a: Wouldn't a multiple mark and recapture scheme give you more information than a simple Peterson estimate?

Given that we are seeing dramatic weather fluctuations driven by the Southern Oscillation, doesn't it make more sense to capture temporal variation in estimates of community composition and population structure of zooplankton?

Developing "trigger" points (unacceptable levels of exotic species) is a good plan. Complete extirpation of exotics is rare.

This would be a better proposal if there was a stronger commitment to native fishes. Stocking rainbows should be phased out entirely. The review group was strongly in support of those objectives that support mitigation and enhancement of native species and was philosophically opposed to mitigating the loss of native species by introduction of non-native species (i.e. rainbow trout). Indeed, this project appears to embrace contradictory actions and philosophies in that regard. Nonetheless, the project is well presented within the context of the review criteria.

ProjectID: 9401002

Flathead River Native Species Project (MFWP Sub-proposal)

Montana Department of Fish, Wildlife and Parks

Short Description: Protect and enhance native fish by managing the effects of regulated flow and temperature below Hungry Horse Dam on species interactions in the Flathead River. Evaluate effects of thermal control using selective withdrawal. Model macro- and micro-habitat.

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$267,049 / CBFWA Funding Recommendation = \$267,049

Recommendation:

Fund (low priority). Review next year for a better description of hypotheses and experimental design. Project should be included in a general site review of all sub-basin projects.

Comments:

This project is a component of the Hungry Horse Fisheries Mitigation umbrella (20554), the specific goals of which are "to quantify the influence of regulated flow and temperature on fish in the Flathead River". It deals primarily with the effects of Hungry Horse reservoir operation on flow and temperature in the Flathead River downstream (more focused than last year). The main activities appear to be primarily radio tracking and population surveys. No hypotheses or science questions are articulated. The project has been ongoing since 1994, and is projected to continue until 2002, at levels in excess

of \$250k/yr. This proposal is a reworking of a project once directed at mitigating the effects of excessive drawdowns of Hungry Horse Reservoir. It is more research than implementation and management, especially in FY2000.

This is a fairly well prepared proposal, one that is well integrated with the umbrella. It is in the midrange of quality of proposals reviewed. It cites relevant FWP measures, ESA listings, NMFS hydro operations, plus many specific Hungry Horse/Flathead plans and summaries. There is a tailwater emphasis now, related to changes in flow, temperature, and habitats for bull trout, westslope cutthroat trout, and mountain whitefish. The proposal relates the work to the umbrella and two other projects. The past accomplishments are good, reflecting previous emphasis on Hungry Horse tributary habitat improvement. Objectives and tasks are good, if pretty detailed. Schedule and costs are reasonable (the budget seems cheap for the work). There is a small amount of cost sharing officially, but the project is integrated with other projects. The narrative is generally good, making use of the umbrella. Technically, there is little in the way of a clear hypothesis-testing scheme and a need to distinguish between occupied and preferred habitats. This is related to the concepts of realized niche vs. fundamental niche of G.E. Hutchinson.

There is an urgent need for review of this project in consideration of the overall objectives of the Flathead mitigation and restoration effort. All projects under this umbrella are urgently in need of a comprehensive review, which could best be conducted by a review committee convened specifically for this purpose (see also review of other projects under this umbrella).

The reviewers raised several specific points, with the observation that this proposal forms the basis for the IFIM-driven integrated rule curves:

Past successes of this proposal were in mitigation work on defective stream culverts and a little pilot work on radio tagging of lake trout.

There is no mention of work on northern pike in the review of achievements, but there is on the northern squawfish. Is this work on the northern pikeminnow (aka northern squawfish?).

Objective 3: How will monitoring native fish distributions measure interaction strength among species? This does not follow necessarily and the logic is not presented in the methods section. The presence of overlap does not necessarily suggest competition nor does complete habitat segregation. These may suggest something about predator-prey encounter rates.

How will the dietary habits of species by location be integrated with the radio-tagging data?

Objective 5: How will overlap in spawning sites indicate the level of hybridization between rainbows and cutthroats? Would DNA probes or microsatellites of captured juveniles near those spawning grounds give better information? Likewise, the logic is not presented in the methods section.

It is unclear when the proposers are going to put the IFIM model together. Will it really take until 2003 to complete the job?

The radio-tagging data will give interesting HSI curves provided that signals are sampled often enough to correspond with changes in flows in the rivers; weekly samples may or may not be often enough. Microhabitat locations are ephemeral. Some effort should be made to follow a subset of each species through a 24h cycle to adequately capture typical time/energy budgets. The objectives are good, but the design of the monitoring was too sketchy to determine potential success or failure. Coordinated use of new geographically specified information techniques is up to date.

This work is central to the program and the idea is good, but description of hypotheses and a better experimental design are needed. Plans have been made to submit manuscripts to peer-reviewed journals.

ProjectID: 9502500

Flathead River Instream Flow Project (MFWP Umbrella Subproposal)

Montana Department of Fish, Wildlife and Parks

Short Description: Conduct IFIM study on Flathead River from South Fork confluence to Flathead Lake. Determine effects of flow fluctuations and temperature control on habitat, bed load, predator-prey interactions and migrations. Link river model to reservoir model (HRMOD).

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$100,000 / CBFWA Funding Recommendation = \$100,000

Recommendation:

Fund (High priority). The contracting process with BPA should be accelerated.

Comments:

This project is a component of the Hungry Horse Fisheries Mitigation umbrella (20554), the specific goal of which is to apply the IFIM (Instream Flow Incremental Methodology) to Flathead River downstream of Hungry Horse Dam. IFIM is widely used to determine appropriate low flows, and associated reservoir operation impacts, in managed streams. Apparently this project (which is to be a one-year effort) was approved in two previous years, but work has not yet begun. The 95+ number is misleading, suggesting a project that has been underway for several years.

This project may well be an important component of a comprehensive mitigation and restoration effort for native fisheries within the Flathead basin. However, as indicated in review of other projects within the same umbrella, a comprehensive review of all component projects is urgently needed, the results of which should be used to develop a longer term (3-5 year) plan for the basin. Depending on results of such review, the proposed IFIM work may be an important component.

This is a well-written proposal in the mid-range of quality of proposals reviewed. It is odd in being a 100% subcontract, with more than 50% cost sharing with Montana Fish Wildlife and Parks. The accomplishments section reflects frustration over not being able to get the IFIM contractor selected (BPA RFP process). The proposal cites relevant FWP measures, ESA provisions, NMFS hydrosystem operations, and basin and state plans and

status reports. It reflects its relationships with the umbrella and 5 projects under the umbrella. There is a good, persuasive narrative, although it gets into discussing the proposed work a bit prematurely. This project will likely provide important information with direct applications to management.

Reviewers provided specific comments:

There are completed IFIM projects in the upper Columbia Basin and the Kootenai (to be finished in a matter of months); IFIM is used in many reviews to balance needs of the biotic and hydrosystem where dams are involved.

Integrated rule curves are recommended by ISG for application to other subbasins in the Northwest.

Thermal and biological sampling has been ongoing since 1987. Should it be time to wrap this up?

The bulk of the effort is in making all the parts of the simulation model compatible, to validate it, document it and then use it to project various scenarios for dam operation strategies.

ProjectID: 20144

Create Stream Reference Condition Data Set For The Upper Flathead R Basin

Flathead National Forest

Short Description: Develops reference conditions from various Rosgen channel types to provide baseline data for stream restoration projects and provides a large data set for watershed assessments to determine stream habitat potential.

ISRP Recommendation - DNF / CBFWA Tier 2 / ISRP Comparison with CBFWA: Disagree-DNF

Sponsor Funding Request = \$26,000 / CBFWA Funding Recommendation = Recommendation:

Do not fund. The proposal is inadequate and not technically justified.

Comments:

This proposal is for a new project, intended for a single year, to survey channel conditions, apparently with the intent of inferring reference stream conditions. The focus would be on the South Fork of the Flathead. This could be useful work but the proposal does not ensure that it will result in benefits to fish and wildlife.

Survey of Rosgen channel types will determine baselines for existing range of variability in stream channels in relation to reference sets of pristine streams stratified across similar geologies. This is intended to be used to assess whether or not rehabilitation measures are needed. Rosgen's system works well in the Rockies. The work will be done in the standardized format of the USFS.

The end product could perhaps be quite useful, and the cost is low. However, the proposal is poorly written, unpersuasive, and CBFWA itself notes that restoration efforts are progressing "fairly well" without this action. Data about specific locations to be evaluated (how many miles of stream, what stream orders – i.e. small tributaries vs. main stem), and other relevant details are missing. More importantly, there is no link to other

funded (or proposed) projects, so it is not at all clear how results would be used, if at all. There appears to have been some link to ICBEMP, but the sponsor makes no effort to explain that linkage (were such surveys done elsewhere under ICBEMP, and if so, why not in the Flathead?).

This project could be a good adjunct to work already being undertaken (although it might be funded by the FS). To the exclusion of any other planning documents for the subbasin, only the FWP is referenced, although it cites relationships to two other projects for identification of baselines for their restoration work. Dates for the work seem to be confused. There is a good background of the need to characterize natural and existing conditions. The overall Technical and/or scientific background section of this proposal is very weak. Both the Proposal objectives and Methods sections are inadequate. It is responsive to the ISRP request for watershed assessments before habitat restoration. The rationale is primarily the ISRP request and interior basin standard procedures. The proposal notes complementary work on FS ICBEMP as well as BPA projects, but the narrative is inadequate principally because of its failure to explain objectives. Methods are given by reference rather than explanation. There is little description of facilities. There is cost sharing with FS, resumes are good, and the proposed budget appears reasonable.

ProjectID: 9608701

Focus Watershed Coordination-Flathead River Watershed

Confederated Salish and Kootenai Tribes

Short Description: This program fosters “grass roots” public involvement, interagency cooperation and cooperative cost-sharing for habitat restoration to offset impacts to fishery resources in the Flathead watershed.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$103,000 / CBFWA Funding Recommendation = \$103,000

Recommendation:

Fund for one year, with contingency. Subsequent funding contingent on inclusion in an umbrella, definition of importance of the interface between research, mitigation, and public acceptance, and more specificity of the work and results. Include in comprehensive independent science review of all Flathead proposals.

Comments:

This is a proposal intended to “... result in a coordinated effort toward addressing resource concerns within the Flathead River basin ...”. Most of the funding would go to pay the salary of a “resource coordinator”, who would apparently “market” the program, seeking other sources of funding. A small amount of the (approximately \$100k per year) funding would go toward pilot restoration projects.

As a coordination proposal, it is not at all clear why this project is not included under umbrella 20554 (Hungry Horse Mitigation Umbrella), which has several restoration projects that appear to be closely related. It seems curious that no such linkage is indicated. This is a continuing project (initiated 1997), and it should be reviewed in the

same manner as is recommended for projects submitted under the above-mentioned umbrella – specifically, by a visiting committee, subsequent to which a longer-term (e.g. 3-5 year) proposal should be submitted. Until this is done, it is appropriate to provide “bridge funding” only, and not to initiate any new (pilot) projects.

This is a public-contact project that does not fit the ISRP’s proposal evaluation criteria well. Much is quite vague. The work seems reasonable and is probably very important (from a sociological perspective). The proposal cites relevant FWP measures, ESA listings, and 13 other planning documents for the Flathead basin. It also cites 5 Flathead projects as related, which is good. Accomplishments are mostly in planning (soft) and some on-the-ground work in 1998. Although this project is ongoing, the Project history section contains no solid information regarding past accomplishments. There are listing of objectives and tasks, oriented toward coordination, information transfer, and organizing landowners, but the discussion is rambling with no measurable objectives. There is cost share with BOR and on-the-ground support from 4 other groups. The background is ok, but relies on references (e.g., last year’s proposal) that will not be read in judging this proposal. The rationale relates the work to other BPA projects (again, why not part of the umbrella?), conservation districts, and public organizations. The objectives narrative is not well focused and is more a discussion of accomplishments and justification. The Methods section contains no concrete information. Statements such as, “We will incorporate the principles of consensus, collaborative effort, and interagency cooperation” make for nice rhetoric but convey no useful information regarding methods. The proposal failed to address the ISRP’s FY99 comments, Appendix A, page 70. Although probably important, it is hard to justify funding from the proposal.

On the positive side, the review group made the following observations:

There is little doubt that this coordination is valuable. Overall, the group of proposals being coordinated has made great progress in both practical steps towards mitigation (e.g., negotiating easements and land acquisition, mapping of wetlands and floodplains, reclaiming lakes and ponds from exotic fishes) and in identifying strongholds for bull trout and potential limiting factors for burbot and sturgeon. The proposals submitted from the group vary in quality, but the grasp of issues is relatively high. There are a few confusing overlaps among proposals, but communication is very difficult even in the best-managed organizations.

The biggest successes have been in incorporating and coordinating the large numbers of stakeholders in the region (local, private, state, federal and international agencies). It shows up in the ability of various groups to get together to work on various projects, especially at developing the basis for programs. Inferring from the documents, the group may be using adaptive management schemes to manage restoration and research efforts (e.g., stopping the fingerling release program and adopting remote site incubators). Without knowing more about the background, the reviewers were not sure if all underlying assumptions were explicitly identified (i.e., increasing intraspecific competition among progeny of wild spawners, using exogenous gene pools, thereby subjecting native stocks to risks of new diseases and introgression in the future).

They are working where possible to look at trade-offs (e.g., use of integrated rule curves). This is apparent in several proposals and may be part of the culture of the working group and a result of their planning documents.

There is a mixture of passive and active restoration projects. It is not clear that trade-offs or protocols were used to make decisions concerning which tactic to employ. As active restoration has had a checkered reputation, what criteria were used to determine the choice of active over passive restoration?

Many projects, including restoration projects, can be used to test hypotheses concerning factors limiting target species, stream succession, and influences on community structure. Hypotheses were rarely presented and formal presentation of hypotheses testing as part of management strategy is not yet part of the working group culture.

This subbasin has a lot to communicate to the fisheries and conservation biology community, yet few refereed publications have been produced. Publication also fosters more critical analyses of data and problem solving.

ProjectID: 20034

Impact Of Flow Regulation On Riparian Cottonwood Ecosystems

BioQuest International Consulting Ltd.

Short Description: Enhance riparian cottonwood ecosystems through a basin wide inventory and assessment of the timing and duration of springtime flows that will benefit not only anadromous and resident fish, but also lead to the natural recruitment of cottonwoods below dams

ISRP Recommendation - Fund / CBFWA Tier 3 / ISRP Comparison with CBFWA: Disagree-fund; strongly recommend if project is feasible (IKONOS imagery)

Sponsor Funding Request = \$148,034 / CBFWA Funding Recommendation = Recommendation:

Fund (High priority). However, it is unclear whether they will be able to implement this project due to problems with the commercial IKONOS satellite, which they were to rely on for locating cottonwood groves.

Comments:

This is a proposal to enhance riparian cottonwood systems in the upper Columbia River system. The proposer argues that the “structure and function” of riparian cottonwood ecosystems within the upper Columbia has been degraded as a result of dams and water management, and that this degradation has affected fish habitat. The proposal would survey, on a river mile basis, the remaining cottonwood habitats, and would infer the extent (river miles) of habitat lost. The focus would be on the Flathead, Kootenai, Yakima, and Methow basins. The approach would utilize both field surveys, and satellite imagery, including very high resolution (3 m) multi-spectral imagery from the IKONOS system. The project would in a sense be an extension of work already being undertaken by the same team in the Canadian portion of the Kootenai basin.

This is a refreshingly well-written proposal, which outlines the problem, and the approach, succinctly. It is more of the nature of a research project than many of the continuing projects, but represents an area in which the Program must make an investment. The proposal is clearly written and the work well justified. The Resource Issues section is extremely comprehensive and informative. Proposal objectives are

excellent and related to Methods in a concise fashion and then clearly related to the budget. The international aspect of this project is also appealing. It is the best of the new project proposals in this set. The proposal appropriately cites relevant FWP measures, Kootenai sturgeon BiOp, NMFS hydrosystems BiOp, and watershed coordination for the Kootenai. It is related to 2 ongoing projects and 2 proposals (last year's notations are used, so it is not clear the status). Objectives, tasks, schedules, and budget are reasonable. There is potential cost sharing, but not included in the budget. Lots of references lend credibility. There is excellent scientific background and demonstration of the authors' primacy in this topic. It relates the work well to flow regulation in the Kootenai for sturgeon (common objectives). Excellent objectives, tasks, and deliverables. Methods are good. Facilities and equipment are good, and purchases seem justified. There is an excellent multi-national staff. This is the type of research the Program should encourage as it addresses the larger ecosystem issues important for the restoration of conditions that will favor native fishes.

The argument that natural hydrographs are as important to vegetation as for spawning conditions of sturgeon has merit and fits within the concept of the normative river. Therefore, adopting hydrographic regimes that mimic the natural hydrograph will presumably bring dividends to the riparian zone as well as to the aquatic organisms. The proposed work is relatively inexpensive and will go a long way in helping us determine the extent to which we need to restore cottonwood forests.

The review group did have a few concerns, though. The budget doesn't seem to include an item for acquisition costs of the satellite imagery. If this is obtainable without charge, some indication of the arrangements should have been made. How critically dependent is the first year of the project on the IKONOS launch, what happens if it is delayed? Its only conceptual fault is that it does not go further and describe all trees in the riparian assemblage, although this would be an ambitious undertaking.

Some detailed criticisms for consideration by authors of this proposal:

There is no mention of any analyses of historical hydrographs of various catchments to be examined or a way to determine the hydrographic needs for seed dispersal and successful germination. Is this an oversight and implied?

The condition of the floodplain is not taken into consideration. Many streams have had reaches inundated by impoundments, dredged, channelized, straightened, and riveted. Streams have been deliberately disconnected from the flood plains, in many cases to prevent flooding, therefore the conditions of the floodplain may not be as hospitable for seedlings. Are the alluvial soils that encourage successful germination of seeds available on the shorelines of stream reaches now inundated by impoundments?

In summary, this proposal has very important programmatic implications for understanding riparian mitigation, fits with the overall FWP goal for native species, and fits within the normative river concept. The ISRP notes this proposal as an especially important one to fund.

Kootenai

ProjectID: 20517

Libby Fisheries Mitigation

Montana Department of Fish, Wildlife and Parks

Short Description: Enhance and protect native fish communities in the Kootenai Basin through multi-species watershed assessments, off-site habitat protection and enhancement, improved river flow and temperature conditions, and river and reservoir operation strategies.

ISRP Recommendation - na / CBFWA Tier 3 / ISRP Comparison with CBFWA: Umbrella Proposal

Sponsor Funding Request = \$ / CBFWA Funding Recommendation =

Recommendation:

NA - Umbrella Proposal

Comments:

This is an umbrella proposal for projects to mitigate the effects of Libby Dam on the Kootenai River system. It is well written and a good example of an umbrella. It lists the FWP and numerous other planning documents. It lists both the four projects under the umbrella (one a new proposal) and four Kootenai R. projects not under the umbrella. The obvious question is why these were not included. It shows good cost sharing with other agencies. It provides rationale for some older projects that are being combined, which makes sense, and there is indication of communication between projects. The background and rationale are excellent. The rationale specifically refers to ISRP requests to combine similar projects, have mitigation plans, etc.

On the negative side, the umbrella does not give a clear picture of how the projects under the umbrella (and those that are not but might be) relate to each other. How the overall mitigation work is subdivided is not as clearly presented as one might want. The umbrella should identify the overall objectives in the basin and how each subproposal addresses the objectives.

ProjectID: 20028

Purchase Conservation Easement from Plum Creek Timber Company along Fisher

Montana Department of Fish, Wildlife and Parks

Short Description: Purchase perpetual conservation easement on up to 73,000 acres of PCTC lands in Fisher River watershed which precludes subdivision/commercial developments; conserves/enhances fish habitat, maintains public recreational opportunities, and insures continue

ISRP Recommendation - Fund / CBFWA Tier 2 / ISRP Comparison with CBFWA: Agree-fund (Tier 1?)

Sponsor Funding Request = \$500,000 / CBFWA Funding Recommendation = \$250,000

Recommendation:

Fund (High priority).

Comments:

This is a proposal for partial funding (about 5 percent of the total cost) of purchase of Plum Creek Timber Lands in the Fisher River watershed. Although this is a new proposal, it was also proposed last year. As stated in the proposal, the acquisition of this huge block of land, in addition to the planned acquisition of the Thompson River project, “will result in completion of most, and possibly all, of the wildlife mitigation goals for both Libby and Hungry Horse dams.” The current proposal has a reduced BPA commitment and greater commitment by other funding sources (heavily supported by the state of Montana).

It is well written and adequately supports the cost-sharing expenditures by BPA. BPA will be asked for only 5% of the total cost (small but considered critical to stimulate the purchase). The proposal adequately cites the relevant FWP measure, species listings, and 6 other plans. It has a high level of public support. The proposal is well related to other projects under the Montana Libby umbrella (20517) and 4 other projects. There is a massive cost share, with BPA’s amount small for the purchase in FY2000. Most planning and financial arrangements seem complete. There is an excellent background, giving high importance to the basin. The rationale for the easement purchase seems excellent and persuasive (the objectives narrative gives more goals). The methods are good and no facilities are required. The cost to BPA has been trimmed from last year’s proposal, with a larger percentage now derived from other funds (demonstrating local support). This seems to be a valuable, one-time effort.

It is an example of the old adage, “an ounce of prevention is worth a pound of cure”. Limiting development of the area will help establish refuges for wild stocks and prevent further habitat degradation. It will also provide a touchstone or reference point for habitat restoration efforts within the basin. The cost to BPA is very low and the project is cost-effective

The review group considered this to be a very good project addressing the acquisition/protection (by fee title or easement) of wildlife habitat. The Technical and/or scientific background section clearly relates this habitat to benefits for wildlife (both aquatic and terrestrial). The coordination with other agencies and relationship to other projects is a very strong aspect of the proposal. Objectives are well laid out and related to methods. The Budget section is a bit weak, but this is overcome by the strength of the rest of the proposal.

The main negative comment was that the proposers need to clarify the nature of logging activities that could continue on the proposed easement properties and estimate the effects on the fish and wildlife resources intended to be protected. This point was raised in the ISRP’s FY1999 proposal review. Despite the large total cost, it is still just an easement, not a purchase.

ProjectID: 8346700

Mitigation For The Construction And Operation Of Libby Dam

Montana Department of Fish, Wildlife and Parks

Short Description: Research, design, execute and monitor watershed / habitat enhancement projects that mitigate for native fish losses caused by hydropower construction and operation.

ISRP Recommendation - Fund in Part / CBFWA Tier 1 / ISRP Comparison with CBFWA: Partially agree-fund in part

Sponsor Funding Request = \$500,000 / CBFWA Funding Recommendation = \$500,000

Recommendation:

Fund in part at FY1999 level. Subsequent funding contingent on a favorable comprehensive review by a visiting independent scientific committee.

Comments:

This is a continuing project (ongoing for at least 10 years), the objectives of which are to “Restore, enhance, or protect ... sustainable fish populations in the Kootenai Basin ...”. The main tasks include monitoring of the riverine environment for spawning and rearing habitat, documenting entrainment in the Libby Dam release structure, and various monitoring activities in the river and reservoir systems.

This is a well-written proposal that is comprehensive about both the past and future. The proposal quality ranked in the midrange of proposals reviewed. It shows high productivity and focus on problems. It is well related to FWP measures, biological opinions, ESA listings, the mitigation plan, Montana’s plan, and species recovery plans. It relates the work to the umbrella proposal, 3 others under the umbrella, and 6 other projects. It shows good accomplishments. Extensive, excellent objectives reflect long-range plans. There is some in-kind cost sharing. It uses the umbrella effectively for background and rationale, and has a good narrative for relationships to other projects. The objectives narrative is good, but it could better explain what would be done specifically in FY2000. Methods and their rationales are excellent.

This could be a good candidate for multi-year funding. Because this is a long-term, ongoing project, projected to continue indefinitely, a more appropriate means of scientific review would be to assemble a visiting committee to review this project (and all projects under this umbrella) following which the proposers should be invited to submit a multi-year (3-5 year) proposal. Subsequent annual progress reports would be submitted, and handled on an administrative basis. The activities indicated in the proposal are no doubt meritorious, but without considering this proposal in the context of other projects under the umbrella, and perhaps other ongoing and proposed activities within the basin, a comprehensive evaluation is not possible. Funding would seem appropriate at the current level until the suggested comprehensive review can be conducted.

The primary successes of the project seem to have been in developing a variable volume approach for white sturgeon spawning flows and rehabilitating Pipe Creek for bull trout. The proposers appear to have a sophisticated approach for managing exotics by reclaiming fisheries for native fishes in lakes and ponds to reduce public demand for exotics.

Some specific comments that may aid the project:

Are kokanee and rainbow (redband) trout native to the Kootenai? These may not be native above Kootenai Falls (Behnke 1992).

Objective 4 is noteworthy. This is the model for restoration/conservation hatcheries. Are there native fishes that will be negatively affected by this project? Will fishes in Spring Creek negatively affect the redband trout?

Objective 6: Active treatment is a valid restoration strategy; but why was the decision made to perform active restoration? Was there an analysis performed which assessed the trade-offs between active and passive restoration? What are the potential side-effects of active restoration projects?

In objective 6, chemical treatment of lakes and ponds is not 100% effective. What level of efficacy will be acceptable to ensure that exotic competitors and predators will not remain a chronic problem needing repeated treatment?

What is the design of before and after studies that will ensure sufficient statistical power to determine the efficacy of the rehabilitation efforts?

What is the design for quantifying macrozoobenthos losses?

What effects are to be minimized in objective 7?

Will HSI curves for the varial zone of the Kootenai River be kept separate from the HIS curves from the Kootenai River proper? The ephemeral nature of the flow in the varial zone may change the behavior of selection patterns of fishes with respect to flow. Are there zones within the river that are going to be greatly impacted, and those less so?

There were some negative comments. This proposal did not address several shortcomings identified in the ISRP's FY99 report, Appendix A, page 71. The project seems to be an umbrella in itself, with many sub-projects. Some more attention to the theories of before-and-after sampling might be valuable in planning.

ProjectID: 9401001

Mitigation For Excessive Drawdowns At Libby Reservoir

Montana Fish, Wildlife and Parks and the Confederated Salish and Kootenai Tribes

Short Description: Mitigate for fish and fish habitat losses due to excessive drafting of Libby Reservoir for power production (Fish and Wildlife Program measures 903(a) and (b)).

ISRP Recommendation - DNF / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-DNF

Sponsor Funding Request = \$377,971 / CBFWA Funding Recommendation = \$377,971

Recommendation:

Do not fund. The work is indistinguishable from 8346700, the work should be related to reservoir operations, and there are indications that the proposed work is not scientifically sound.

Comments:

Notwithstanding the title of the project, its primary objective appears to be to document native bull trout populations in the Kootenai River system within and upstream of Libby Dam. This proposal is under the Kootenai R./Libby Dam umbrella, but it is not clear why it continues as a separate project. As the ISRP identified last year, this project could

be integrated with other Libby Dam mitigation work. It is not clear that this work is specific to mitigating the excessive drawdowns (as opposed to general dam mitigation). There is little distinction in the work (or proposal) from other projects. It would be better for this as a stand-alone proposal to have some work specifically tagged to the excessive drawdowns.

Aside from major confusion over scope, the proposal is well linked to the FWP and other plans, to others in the umbrella, and 6 other projects. There is a good list of accomplishments and an excellent list of objectives and tasks and a good narrative, but it is not clear what will be done in FY2000. The budget is fine, and cost sharing with other agencies and projects nearly doubles the amount of funds available (although some of this cost sharing is still BPA funds, e.g., work proposed by the BC Environment's own proposal). The project history is commendable, but little of it relates to excessive drawdowns. There is no budget narrative, but good resumes. Too many typos suggest hasty preparation. The work is good but has already been functionally merged with other projects. There seems to be no reason not to merge it administratively, as well, under a single project on Libby Dam mitigation.

The proposed bull trout work needs better justification. The preamble indicates the nature of damage to bull trout populations resulting from large excursions in reservoir stage, but the obvious mitigation strategy (exploration and implementation of alternative reservoir operating policies) is not discussed. That being the case, it seems unlikely that significant mitigation is likely to occur, and certainly not as a result of this project. The work that will be (and is being) conducted is essentially characterization (e.g., of spawning habitat), development of relevant GIS systems to store and manipulate data, and so on. All of this may well be meritorious, and in fact could (and should) be an important element in development of alternative reservoir operating policies. But, in the absence of such a link, the project (which has been ongoing for at least 3 years) seems to have been conducted in a vacuum. On the basis of the proposal presented, and the requested expenditure level (almost \$400k/year of BPA funding, total over \$600k), continued funding cannot be justified.

The review group had the following observations and queries:

Confusion stems from the significant overlap between this proposal and proposal 20008 submitted by the B.C. Ministry of Environment, Land and Parks. While cooperation is to be encouraged, duplication is not. Objectives 1 and 2 are very similar in both proposals. Adfluvial populations of charr and trouts must be ecophenotypes and not genetically determined, as there were no large lentic systems before the reservoirs. Therefore, as long as fluvial populations in the tributaries exist, adfluvial ecophenotypes will persist. Why worry about adfluvial populations in particular as mentioned in objective 3? It is not clear from the description of objective 4 what is happening in Young's Creek. Is the overall status of juveniles declining in the creek proper while both fingerlings and RSI (remote site incubators) management techniques are being employed? Were stocking densities variable, such that density-dependent processes kicked in at one year, but not another? Did fingerlings suppress natural populations of west slope cutthroats? Were

fingerlings released during the 4 years of RSI use? If so, how can one tell which works best? What were trends in creeks where RSI were not used? There have been major climate shifts due to the Southern Oscillation in the past two years. Has the project tracked precipitation, runoff and temperature as influences on the system? Is there a third, unaccounted factor? Will there be reference tributaries to use as “controls” for the RSI experiments?

Objective 5 will address the problem of segregating influences of fingerling plants from RSI hatchlings.

Objective 6 is disturbing in that it reveals that stocks were transplanted. Unless disease resistance was checked, carriers of exogenous diseases may have been transferred, introducing yet another factor influencing westslope cutthroat population dynamics within the system. If there are mismatched broodstocks, there is a chance for outbreeding depression as a result of transfer of stocks among drainages.

What are the theory and decision protocols that trigger the use of RSI in fish restoration? The experience in Oregon is that hatchboxes do not work and are only useful under very circumscribed conditions. In fact, there is a danger of reducing the sustainability of naturally spawning fish by using wild broodstock as egg sources. Any broodstock development should track native gene pools to avoid genetic swamping of wild spawners.

In conclusion, the title is a misnomer and the work looks indistinguishable from project 8346700, with which it should be combined. If this project is to mitigate for drawdown, the work should address reservoir operations. (See comments in ISRP FY99 report, Appendix A, page 72).

ProjectID: 20005

West Fisher Watershed Restoration

USDA Forest Service, Kootenai National Forest - Libby Ranger District

Short Description: Enhancement of the West Fisher watershed will accomplish numerous goals towards the recovery of endangered species. The watershed is a priority bull trout and westslope cutthroat trout recovery basin in the middle Kootenai region. Grizzly bears, mule deer

ISRP Recommendation - DNF / CBFWA Tier 3 / ISRP Comparison with CBFWA: Agree-DNF

Sponsor Funding Request = \$288,112 / CBFWA Funding Recommendation = \$
Recommendation:

Do not fund. Technically inadequate proposal. Priority of sites to be restored is not justified, benefits to fish and wildlife are not justified, and BPA funding is not justified.

Comments:

This is a new watershed restoration proposal for West Fisher Creek, a tributary of the Kootenai River. The main components are purchase of about 6 square miles of the watershed, and road stabilization and obliteration (the latter of about 15 miles of road). There is also a stream channel characterization component.

This is a poor proposal that does not justify why BPA should pay for the proposed work. It adequately cites the FWP, listings of species, recovery plans, and the FS Forest Plan. However, it does not relate the proposal to any other BPA projects, even the Montana proposal to obtain easements in the Fisher Valley. The background relates watershed effects to logging and mining, not to Libby Dam impacts. This would seem to be the Forest Service's own responsibility. The rationale adequately links the work to the FWP's native species goals, but to Libby Dam only through railroad relocations. The project relationships narrative relates the work to FS restoration projects (good), but not to BPA-funded ones. The primary objectives seem to be to have BPA pay for NEPA reviews of land exchange (why BPA??) and some sort of road obliteration and stream rehabilitation that should be FS's obligation.

The technical work proposed is quite sketchy; it does not appear that funds are being requested for the land purchase (or swap?). The relative allocation of project funds to channel stabilization and road obliteration is not indicated. There is serious concern as to whether and how both channel restoration and road obliteration will be conducted. Both activities have the potential, if not carefully executed, to exacerbate rather than mitigate damage to the stream system. In neither case is any protocol referenced. Certainly, in the case of road obliteration, the USFS must have a procedures manual of some kind. What follow-up monitoring has been conducted where the procedures proposed have previously been applied? The bear monitoring seems acceptable, but the fish monitoring is inadequate.

There also is a broader issue of "Why West Fisher Creek?" Specifically, in the context of Upper Kootenai restoration efforts, what prioritization has been made of the various opportunities, and can an argument be made that this location is at or near the top of that list? Although the proposed work may well be meritorious, the proposal lacks essential details and justification; the proposers would be well advised to spend more effort in crafting a more convincing proposal for next year's solicitation.

ProjectID: 20008

Monitor And Protect Wigwam River Bull Trout For Koocanusa Reservoir

British Columbia Ministry of Environment, Lands and Parks

Short Description: Protect Koocanusa Reservoir bull trout from inappropriate reservoir operating regimes and logging practices by monitoring spawner returns, juvenile densities, habitat conditions and water quality/quantity in critical habitats on the Wigwam River in B.C.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$60,000 / CBFWA Funding Recommendation = \$60,000

Recommendation:

Fund for one year (High priority), based on status of population not the quality of the proposal. Subsequent funding contingent on a better proposal that addresses the ISRP concerns.

Comments:

This is a proposal by the British Columbia Provincial government for funding the monitoring of bull trout habitat in Wigwam River, a tributary of the upper Kootenai (above Lake Kookanusa) in British Columbia.

This is a fairly good proposal for an important piece of work that technically warrants funding more on the status of the population than the quality of the proposal. The “cost share” credited by Montana’s projects on bull trout would be paid for by BPA through this proposal (which seems like odd accounting). However, the work needs to be done and it fits as part of the Libby Dam mitigation package. The work is analogous to the headwater work done in the Flathead system (in this case, the headwaters of the Kootenai are in BC). The proposal adequately cites the FWP, FWS bull trout BiOp, and NMFS BiOp. It relates its proposed work to the Montana projects. The relationships between BPA and a pre-logging assessment seem tenuous at first, but the narrative adequately explains the comparative relationship between evaluating logging and dam impacts. There is excellent cost sharing with BC Forest Renewal and Habitat Conservation Trust Fund. There is a short but good background write-up. The rationale is good.

Other parts of the proposal are weak. For a monitoring project, the Relationships to other projects section is very weak. It is mentioned that the “Montana Department of Fish, Wildlife and Parks is already operating two major projects on Kookanusa Reservoir”, but there is no description of these projects. The logical question is, why doesn’t MDFWP monitor bull trout as part of these projects? In addition, the Proposal objectives section is inadequate. A series of proposed activities is contained therein, but no measurable objectives. The Budget section is, according to the proposal, “self-explanatory” but it is the obligation of the proposer to make the explanation. Finally, Section 9 (Key Personnel) tells nothing about the caliber of persons to be involved with this project.

There is a policy reservation regarding whether BPA/Council should fund work in British Columbia (a question that we refer to Council to resolve). The argument for such funding is that much of the habitat used by bull trout upstream of Libby Dam (and in the reservoir system) is in the Wigwam River in BC. Whether or not this argument is compelling, it does not appear appropriate to review this proposal on the same basis as others in the basin. The Council needs to consider whether defrayal of costs by the B.C. Government is an appropriate use of Program funds, and, if so, what guidelines should be used to prioritize such proposals. This is a good example, however, of where international cooperation can play big dividends. Funding will supplement an existing program on the U.S. side.

Some specific points/questions:

Wigwam River supports the highest populations of bull trout, a federally listed species, in Kookanusa Reservoir (Libby Dam) and has the highest fisheries priority of the B.C. government. The connection of this population to the rest of the upper Kootenai is recognized by U.S. cooperators (see proposal 9401001).

Presumably because local conditions may be different from other experiences (e.g., Hungry Horse, Flathead Lake, Lake Billy Chinook), impacts of the dam are unknown.

Yet there are other populations in Oregon where adoption of an adfluvial phenotype was highly successful. Can a literature search provide the basis for a comparative study? As logging is planned, it is important that the population be monitored for signs of stress. Having said that, there is concern that repeated electrofishing may have deleterious side effects.

Will reaches have index sites or will sites be selected at random within representative reaches?

What are the water quality parameters to be monitored? What levels of input will trigger management activity to halt habitat degradation? Are there agreements with the forestry agency or company in place to cease certain operations should indicators trigger a management response?

ProjectID: 20009

Fertilization Of Kootenay Lake And Arrow Reservoir

B.C. Ministry of Environment, Lands and Parks

Short Description: Fertilize Kootenay Lake and Arrow Reservoir to mitigate impacts of providing flow augmentation for lower river salmon migration.

ISRP Recommendation - DNF / CBFWA Tier 2 / ISRP Comparison with CBFWA: Disagree-DNF

Sponsor Funding Request = \$175,000 / CBFWA Funding Recommendation = Recommendation:

Do not fund. The proposal is technically inadequate and benefits to fish and wildlife are not justified. If considered a requirement of the flow augmentation swap, then funding for fertilizer purchase should be evaluated in another forum.

Comments:

This proposal to buy an unspecified quantity of fertilizer equivalent to the change in flows from Canadian reservoirs required by recent flow augmentation agreements. This proposal is intended to augment their Canadian reservoir fertilization program and to offset losses in production. Based on their experience, it will take 5 years to determine the success of the program. It is questionable that the issue deserves to be considered as a separate proposal, and, in any event, objectives are not clearly defined.

The Ministry of Environment, Land and Parks has a considerable track record in investigating the impacts of Libby and Duncan Dams acting as nutrient traps and the consequent reduction of system productivity. They began documenting the problem and its history in 1990 and then set out experimental addition of nutrients in 1992. The results were very positive, increasing kokanee runs seven-fold. New requirements to increase summer flushing flows downstream for juvenile salmon transport will flush nutrients downstream (Note that proposal 9404900 does not consider this.), thereby reducing productivity above the dams, but increasing productivity below. The sponsors suspect that nutrient loading may be less in the future due to retention time and turnover rate of water in the system. They did not present their model of nutrient budgets for these systems. That this will be a recurring expense as long as the dams persist is unstated (note this is for Upper Arrow Lake basin only).

Technical aspects of the work do not appear to be justified. Possible unwanted side effects of the proposed activities may not have been considered and accounted for; they are not covered in the proposal. Also, the proposal objectives section does not relate how the proposed fertilizer purchase might result in fisheries benefits. Further, there is no justification for the \$175,000.00 budget request. There is only a statement that “the exact amount of fertilizer required...is unclear at this time.” This proposal appears premature and not well thought out.

The review group concluded that this purchase should not require a proposal in this form. Rather, BPA should just be asked to contribute to the fertilizer purchase. The lake fertilization project is underway and funded elsewhere. BPA is simply being asked to contribute to fertilizer purchase based on a swap of flow augmentation between Arrow and Libby Dams. The proposal itself needs improvement, partly because it is really not a full project proposal. If needed in the form of a project proposal, this should be in a specific proposal that justifies benefits to fish and wildlife.

ProjectID: 20049

Evaluate Sediment Transport In Spawning Habitat, Kootenai R., Idaho

U.S. Geological Survey

Short Description: Enhance understanding of pre- and post-Libby Dam substrate habitat conditions in the Kootenai River, Idaho. Provide base-line substrate data for habitat enhancement evaluations performed by other agencies. Study area to include sturgeon spawning area.

ISRP Recommendation - DNF / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-DNF

Sponsor Funding Request = \$96,550 / CBFWA Funding Recommendation = \$96,550

Recommendation:

Do not fund. ISRP encourages submission in FY2001 (perhaps as part of another proposal), addressing the ISRP’s concerns.

Comments:

This is a new proposal by the U.S. Geological Survey to characterize sediment in the mainstem Kootenai River white sturgeon spawning areas, (apparently) downstream of Libby Dam. The proposition is that sediment delivery and movement in the channel system has been significantly modified by Libby Dam, but specifics of the effects on sturgeon habitat are not well known.

Despite problems with sturgeon egg incubation success, the proposal does not make a compelling argument nor present sufficient evidence that this problem is caused by sedimentation. There may well be a justification for the proposed work, but it needs to be made in conjunction with other elements of the Program (and in particular, it needs to be an element of an appropriate umbrella proposal). CBFWA itself recommends that the project be absorbed as a sub-contract (to proposal No. 8806400) and substantially reduced in scope and budget. As written, the proposal is of questionable benefit to fish.

The proposal quality was in the mid-range of proposals reviewed. The proposal adequately addresses the FWP and FWS white sturgeon recovery plan, relates the work to

other Kootenai River studies, and notes that this team was a subcontractor in earlier stream velocity studies. Past accomplishments as the subcontractor are given, including indication of sediment differences that suggested the proposed work. Schedule and costs seem reasonable. Background, rationale, and project relationships are brief but acceptable. Objectives are good, and resumes are fine. This project seems worthwhile, although not especially well justified in terms of white sturgeon biology. One reservation is about its status as a stand-alone project that might better be included as part of the ongoing tailwater studies (as the earlier velocity work had been). At a minimum, the work should be better justified and more closely linked to other work through the umbrella proposal. Aspects of the proposal are extremely sketchy, and indicate only minimally how the proposed work would fit into the broader scheme of Kootenai River fisheries mitigation and enhancement efforts.

This proposal is somewhat symptomatic of the relatively poor connection between work dealing with physical and biological aspects of the Program, but the disconnect in this case seems especially apparent. There may well be a justification for the proposed work, but it needs to be made in the context of other elements of the Program (and in particular, it needs to be an element of an appropriate umbrella proposal).

ProjectID: 9404900

Improve The Kootenai River Ecosystem

Kootenai Tribe of Idaho

Short Description: Identify best management options in order to enhance the aquatic ecosystem and recover native populations of white sturgeon, kokanee salmon, bull trout, burbot, Westslope cutthroat trout and redband trout in the Kootenai River system.

ISRP Recommendation - Fund in Part / CBFWA Tier 1 / ISRP Comparison with CBFWA: Partially agree-fund in part

Sponsor Funding Request = \$300,000 / CBFWA Funding Recommendation = \$270,000

Recommendation:

Fund in part for one year; do not fund objective 4, evaluation of artificial fertilization. Subsequent funding must be contingent on: demonstration of integration in the umbrella, clear and compelling scientific justification of their work, and completion of a comprehensive scientific review, via a visiting committee.

Comments:

This is an existing project to identify best management options to enhance the aquatic ecosystem of the Kootenai River, which is judged to be in a state of collapse, and the fish species that are part of it. Nutrient limitations and hydropower effects are the focus.

This project comes across, as it did last year, as unfocused and unclear in direction. Several different directions are being taken simultaneously and over time (e.g., sturgeon in the mainstem, tributary surveys, fertilization effects, and the completed studies of macroinvertebrates in the mainstem). The overall proposal quality was in the midrange of those reviewed. The proposal cites its mandate in the amended FWP and many other documents (white sturgeon BiOp, bull trout listing, ESA Section 10 permits, Libby Dam mitigation plans, CBFWA resident fish plan, and white sturgeon recovery plan). It relates the work to 3 other Kootenai basin projects, but does not include itself in the umbrella. There is a good listing of accomplishments, and good objectives, all of which indicate significant overlap with the other Kootenai basin projects. In general, this proposal gives a good historical background and presents some of the working hypotheses related to sturgeon limitation. The main emphasis of the objectives is now white sturgeon. There is no cost sharing indicated. Narrative descriptions are good, although the methods section is of spotty quality. The planned fertilization study appears inadequately planned and too simplistic and short term (and probably should be dropped). The incubation capsule study seems risky but worth trying. If the proposal can show better focus, it could be a candidate for multi-year funding; now it is not up to that standard.

Some specific comments:

Libby Dam acts as a nutrient and sediment trap, which may affect downstream trophic dynamics. The proposers interpret standing crops of chironomids and oligochaetes as comparable to standing crops in the Snake River and conclude that food may not be limiting for juvenile sturgeon. However, standing crops differ from production. Standing crops may be high because there is less predation pressure as the juvenile

sturgeon were not present. Moreover this is based on one year's data and the high prey concentrations are at one site; we are not presented with information concerning natural variation. Unmentioned here, but mentioned elsewhere is that kokanee populations (exotic?), a prey for adult sturgeon, are in steep decline, also perhaps an effect of nutrient trapping by Libby Dam (but note proposal 20009).

The proposed work will characterize nutrient limitations of the tributaries (no indication was given why this was considered important—although one might read between the lines and infer that declining kokanee runs have made nutrients more limiting in some tributaries). Libby Dam has been indicted. No criteria were given as to how proposers will decide if nutrients should be added to the streams. All water samples should be frozen or put on dry ice before shipment to the contracted laboratory. The proposed work will characterize the survival rates of white sturgeon eggs and larvae in capsules protected from predation and silt. This is a worthy objective; however, will silt be less of a problem downstream as much of it has settled behind Libby Dam? Has Libby Dam reduced the capacity of the stream to move bedload? Will survival rates of larval sturgeon be compromised for the lack of food in capsules? To what will these rates be compared? Are there estimates of hatching and survival rates from the Kootenai? If not, how will they be gathered? If these are difficult to gather, how valuable will the data set concerning encapsulated eggs and larvae be? Much is made of the simulation model for the Kootenai. Has it been validated? Will a Bayesian approach to model refinement be anticipated (aka, adaptive management?).

The review group was not confident that all the issues to be studied have been thought through. This seems particularly true for the proposed fertilization study, which was viewed as inadequately planned. There appears to be a lack of communication of ideas and results among cooperators and in places, it is clear that there is variance in ideas about how the system works. Proposal 8806500, for example, reports that sand does not appear to be inhibiting spawning grounds of sturgeons, and silt may not be a problem either. Some mutual definition of hypotheses seems to be in order. This project would benefit from a broader peer review that includes other projects in the basin.

ProjectID: 9608720

Focus Watershed Coordination-Kootenai River Watershed

Montana Fish, Wildlife and Parks and the Confederated Salish and Kootenai Tribes

Short Description: Fosters “grass roots” public involvement and interagency cooperation for habitat restoration to offset impacts to the fishery resources in the Kootenai River watershed. Establishes cost-share arrangements with government agencies and private groups.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$99,919 / CBFWA Funding Recommendation = \$99,919
Recommendation:

Fund for one year. Subsequent funding contingent on inclusion in an umbrella; definition of importance of the interface between research, mitigation, and public acceptance; and

more specificity of the work and results. Include in comprehensive independent science review of the Kootenai projects.

Comments:

This is a proposal for watershed coordination of fish and wildlife projects in the Kootenai subbasin. This is a well-written proposal that warrants funding. Its quality fell in the midrange of projects reviewed. It is not included in the Kootenai umbrella, which is especially puzzling for a coordination proposal. The proposal cites relevant FWP measures, the white sturgeon BiOp, the NMFS hydrosystem BiOp, ESA listings, and mitigation/implementation plans for Libby Dam. It cites nine existing and one proposed project as related, including both Libby and Hungry Horse mitigation efforts. There is an excellent history of coordination and facilitation that reflects useful opportunism. The objectives/tasks of the project are good, and the schedules/costs seem reasonable. There is cost sharing, although funds are not given in all cases. There is an excellent background narrative. The rationale/significance narrative does not make clear why this project does not join other projects (much of the information is given in the background narrative). There is a good, productive history. Given that the stated coordination and integration are actually represented in the subbasin umbrella, this project could be a good candidate for multi-year funding.

The proposers are following the Flathead model, but not completely. This incomplete mentoring explains the greater variation in the quality of the proposals between the Flathead group (generally good) to the Kootenai group (generally fair, but a few were impressive). They are intelligently working on the human dimension issues first: watershed councils are coordinating local, private, state, federal and Canadian interests. The review group was impressed by the Flathead model, and key staff are central to both the Flathead work and that proposed for the Kootenai. Undoubtedly what was learned on the Flathead will lead to quicker progress here, depending upon public support and that of the cooperators.

The reviewers noted some sticky issues that the Focus Group will have to address: The key is to get this group to accept that rainbow trout (redbands) and kokanee salmon are probably exotics, at least according to Robert Behnke (1992). They should not be above the great falls of the Upper Columbia. Hybridization by rainbow trout with westslope cutthroat trout is a serious threat to the native cutthroat. Proposers have done a good job in identifying the importance of the transboundary aspects of the population structure of bull trout (Wigwam Creek) and burbot, although the term metapopulation is used too loosely. We do not know if the processes of the formal definition of metapopulation dynamics as defined by Richard Levins apply either, and a coming publication by Jason Dunham and Bruce Reiman suggests that metapopulation dynamics vary from the model originally described by Levin.

Bull trout in Idaho do not disperse and recolonize well.

There is a mixture of passive and active restoration projects. It is not clear that trade-offs or protocols were used to make decisions concerning which tactic to employ. As active

restoration has had a checkered reputation, what criteria were used to determine the choice of active over passive restoration?

The side-effects of using hatchery stocks to supplement wild spawners should be well considered. Hatchery stocks can increase intraspecific competition if food is limited. Essentially, the use of supplementation implicitly argues that the greatest bottleneck for the population is reproduction, that space and productivity are not a problem. It has already been noted in some of the proposals that, indeed, productivity is a key issue.

If kokanee are exotic, planting them to provide additional forage for sturgeon should be approached with caution, if at all. The literature on feeding by white sturgeon indicates that their tastes are broad. If they can swallow it, it will be swallowed.

The project should be included in an in-depth peer review of all projects in the Kootenai subbasin. This project is on a good track and it should benefit from such a review.

ProjectID: 8806400

Kootenai River White Sturgeon Studies And Conservation Aquaculture

Kootenai Tribe of Idaho

Short Description: Prevent extinction, preserve existing gene pool, and begin rebuilding healthy age classes of the endangered white sturgeon in the Kootenai River using conservation aquaculture techniques with wild broodstock.

ISRP Recommendation - Fund in Part / CBFWA Tier 1 / ISRP Comparison with CBFWA: Partially agree-fund in part

Sponsor Funding Request = \$2,750,202 / CBFWA Funding Recommendation = \$1,150,202

Recommendation:

Fund in part. Fund the research component. Do not fund capital expenditures until a comprehensive review of regionwide white sturgeon recovery efforts is complete. Do not fund kokanee portion of the proposal, objective 4, because the scientific basis for linking kokanee to white sturgeon is not justified.

Comments:

This project addresses Kootenai white sturgeon, which is federally listed as endangered. White sturgeon have not recruited into the spawning population since 1974. The primary purpose of the project is to preserve the existing gene pool and to restore the natural age-class distribution through construction and operation of a hatchery.

This is a fairly well written proposal, of a quality in the midrange of those reviewed, that warrants funding for the sturgeon research but not the kokanee work (which is an aberration here). A second major problem is the lack of evidence of integration/coordination with other white sturgeon work in the Columbia River basin. The proposal cites the FWP and white sturgeon BiOp, as well as two related projects and one proposal (funded?) from last year. There are good accomplishments, but the kokanee results seem out of place. Objectives and tasks are good, but the kokanee work does not seem appropriate for this study. Perhaps it is needed, but just not justified in terms of white sturgeon. A key element of the proposal is an expensive hatchery, which assumes that spawning and early survival are the keys to success (questionable). There is a small

amount of cost sharing (3%). Technical background is good for sturgeon but poor for kokanee and burbot (both of which seem peripheral or even irrelevant to the main objectives). The rationale/significance for sturgeon work is good and the relationships to other projects are excellent. Project history is good for sturgeon, but nothing is given for kokanee. However, if arrangements have been made for hatchery space with the Canadians, why is the expense of the KTH justified? Objectives are really mostly methods. In summary, the sturgeon work is good (although it needs evidence of coordination with similar work in the Columbia basin) but kokanee work should be separated out. The sturgeon work might be a good candidate for multi-year funding.

Several specific comments from reviewers were:

Vital information is left out of the background/justification section of this proposal.

Numbers are given concerning targets for sustaining and rehabilitating the population.

How were these numbers derived? Was some population viability analysis done?

What life history structure will demonstrate that the conserved population is made healthy? How does the present structure compare with other populations that are intact (e.g., below Bonneville Dam)?

Page 18 states, "Number of fish released per family will be adjusted in future years when actual survival rate is known". This presumes that the environment and therefore the risks are constant. Is this true? The hydrograph has been very unstable since the installation of the dam.

The statement concerning losing an entire generation of spawners may be in error given the life span of white sturgeons, alarming though the missing age classes may be. Was the mean generation time for Kootenai white sturgeon formally calculated?

The description of how genetic structure of the population is to be monitored is inadequate. What is going to be indexed? heterozygosity? presence of rare alleles?

What genetic analyses will be performed? protein electrophoresis? mtDNA? nuclear DNA? Who is the geneticist? Will this be subcontracted to a genetics group?

Will pedigree analyses be performed to examine success of different mating combinations?

Will samples of wild fish be taken to monitor possible differences between hatchery and wild brood stocks?

Given the several problems that have occurred in the past with holding fish, have risks of aquacultural failure been assessed, specifically of a Canadian "failsafe" facility?

Note that increasing interspecific competition of hatchery fish with wild fish was not mentioned as a potential unwanted side-effect, although it is raised as an issue in proposal 8806500. Adding hatchery fish to a system that is nutrient limited increases pressure on wild fish. Food limitation seems important to define. Is this the reason for the kokanee work? If so, it is poorly justified as such. The kokanee work nonetheless should be separated from the sturgeon work. However, it does make sense to supplement the wild stocks if there is another life history bottleneck, such as recruitment, and food is in surplus. There may be other compelling hypotheses, but these look like two hypotheses that should be tested.

Demonstrated coordination among Columbia River basin white sturgeon researchers is essential, considering the common problems. Genetics of stocks basin-wide needs

attention. A more formal statement of competing hypotheses throughout the basin could be helpful in guiding research.

ProjectID: 8806500

Kootenai River Fisheries Recovery Investigations

Idaho Department of Fish and Game

Short Description: Determine status of Kootenai River white sturgeon (ESA), burbot (a genetically distinct stock), whitefish, and bull and rainbow trout stocks in the Kootenai River and effects of water fluctuations and ecosystem changes on these stocks.

ISRP Recommendation - Fund in Part / CBFWA Tier 1 / ISRP Comparison with CBFWA: Partially agree-fund in part

Sponsor Funding Request = \$616,596 / CBFWA Funding Recommendation = \$616,596

Recommendation:

Fund in part at reduced level (FY99 level?). Do not fund hypotheses 2,3,4 and 11; they are not well thought out, and 3 and 11 are not theoretically justified. Any subsequent funding must be subject to completion of a specific independent scientific review, via a visiting committee, and a comprehensive review of regionwide white sturgeon recovery efforts.

Comments:

This is Idaho's project related to mitigation for Libby Dam on the Kootenai River. The main goal is restoration of the Kootenai River ecosystem and the fisheries that had been supported prior to Libby Dam. The strength of this project proposal lies in its addressing a broad variety of native species as well as the comprehensive approach outlined in the section on Rationale and Significance to Regional Programs. Particularly appealing is coordination with IDFG and with British Columbia. The Proposal objectives section is very comprehensive. The Hypothesis-Product format is unique and informative. One weakness is the absence of a "cross-walk" between objectives, methods and budget.

The proposal, however, does not adequately relate its efforts to similar BPA-funded efforts in Montana. It is not part of the Libby Dam mitigation umbrella. The proposal does cite the FWP and the Kootenai River white sturgeon recovery plan and three other Kootenai R. studies. The proposal gives a thorough listing of objectives and tasks up front covering several years of work, but the narrative later on is mostly a re-listing (different). The hypothesis structure is good. The project is fairly costly, with no cost sharing indicated. The budget does not seem to correspond to the work they are doing and does not seem to be comparable to other work in the region. There is a concise, good background on each target species. The rationale and significance are poor—mostly a restatement of goals. The narrative on relationships to other projects is poor, considering the number of other projects funded by BPA for Libby Dam mitigation. The project history is not well related to the project, just to the problem. Methods are terse, poorly written, and difficult to understand. On the other hand, facilities and equipment are listed in more detail than is needed. No resumes were provided as per instructions, so we cannot gauge the competence of staff to do the proposed work. The PI appears to be an energetic scientist, but until greater details are specified, it is difficult to assess the

probable success of the proposed work. Despite the marginal proposal, the monitoring work seems to be providing good information and it should be continued. Had the proposal been better, the study might have been a candidate for multi-year funding.

The reviewers had several specific observations and questions:

Paragamian seems to have been in the thick of the field research, as many of the other proposals on the Kootenai subbasin cite his work. He is one of the few to present his ideas as testable hypotheses and to have published his work in a refereed journal (Trans. Amer. Fish. Soc.).

Overall this is a peculiar proposal. Almost four times the space is allocated to facilities rather than methodology, which is sketchy and lacks needed detail.

Much of the work will be based on back-calculated growth rates of 50 sturgeon correlated with various records. Will the numbers be sufficient for statistical power?

How is Hypothesis 1 concerning the change in demographic statistics to be tested? Are you intending to develop vertical life table as well as back-calculate growth? Should you not collect a variety of sizes of subadults and adults in order to reduce biases in back-calculation? What are the drawbacks of a vertical lifetable in a variable environment?

It appears that the work to test Hypothesis 2, minimum spawning and rearing flows, has been largely accomplished in two publications in preparation. How does the proposed work differ from that accomplished? Is this a test of your model?

Given the sketchy details, how is Hypothesis 3, concerning food limitations, to be tested?

Food electivity studies alone will not provide the information. Is your intention to compare growth of sturgeon raised in a hatchery with those growing in the wild? As the rations should differ substantially between populations, hatchery fish receiving optimal rations, presumably, how will you demonstrate that limited food is having an affect on survival of juvenile sturgeon? How will you be able to prove that intraspecific competition, which appears a reasonable hypothesis, is reducing white sturgeon growth? All you may prove is that hatchery fish differ in growth from juvenile sturgeon, which is also a reasonable hypothesis. (Note that the question of intraspecific competition from hatchery fish was not mentioned as an unwanted side-effect in proposal 880640).

Hypothesis 4. It is not clear how you can test for varying flows and/or nutrient losses affecting survival and growth in this study.

Hypothesis 5 (impeding burbot migration due to high discharge from dams) is a good testable hypothesis. Will natural hydrographs be used for baseline calculations of pre-dam migration times?

Objectives 6-8 concern building baseline data and seem reasonable.

Hypothesis 9 (toxicants affecting egg and larval development). It seems that if hatching and larval survival of hatchery sturgeon are comparable to Columbia River and California sturgeon hatcheries, that this may be of concern, but of lower priority.

Hypothesis 10 comes out of objective 7. The working hypothesis for objective 7 is that there are no differences between Duncan and Kootenai stocks of burbot. Therefore Duncan stocks may be used to supplement depleted wild stocks (presuming that it is spawning limitations and not food or habitat which is limiting).

Hypothesis 11 concerns stress and cortisol levels in burbot. Who among the staff are qualified to conduct these tests? The assays and interpretation of the results takes experienced personnel familiar with the clinical procedures. Stress can be induced so

quickly, that capturing specimens to sample for blood cortisol can in seconds, artifactually raise levels high enough to obscure experimental treatment.

The project needs to be included in overall external reviews of (1) the Libby Dam mitigation work, and (2) basin-wide white sturgeon recovery work.

Lower Snake

Lower Snake Mainstem and Multi-subbasin

ProjectID: 20533

Multi-Year Lower Snake River Mainstem Anadromous Fish Plan

Columbia Basin Fish & Wildlife Authority

Short Description:

ISRP Recommendation - na / CBFWA Tier na / ISRP Comparison with CBFWA: Umbrella Proposal

Sponsor Funding Request = \$ / CBFWA Funding Recommendation =

Recommendation:

NA - Umbrella Proposal

Comments:

This is an umbrella proposal for 12 projects, all ongoing, which relate to monitoring of anadromous fish in the Lower Snake River system. This is a first attempt at preparing an umbrella proposal and it lacks necessary features.. More than a list of projects is required. Objectives related to the Fish and Wildlife Program should be stated and Tasks explicitly related to the Objectives should be identified. The overall strategy being followed by the component projects should be described and the method of their coordination should be given. The history of the projects should be summarized.

ProjectID: 20541

Snake River Fall Chinook Salmon Studies (Umbrella Proposal)

Nez Perce Tribe, U.S. Fish and Wildlife Service, U.S. Geological Survey-Biological Resources Division, National Marine Fisheries Service

Short Description: Implement Tribal and Federal Snake River fall chinook recovery plans by assessment and M&E of attributes and survival of natural juveniles, Lyons Ferry Hatchery yearlings and subyearlings, and returning adult Snake River fall chinook.

ISRP Recommendation - na / CBFWA Tier na / ISRP Comparison with CBFWA: Umbrella Proposal

Sponsor Funding Request = \$ / CBFWA Funding Recommendation =

Recommendation:

NA - Umbrella Proposal

Comments:

This is an umbrella proposal for seven ongoing hatchery supplementation projects situated in the Lower Snake River. This proposal describes the history of the component projects, and their contribution to an overall restoration strategy under the Fish and Wildlife Program.. Objectives related to the FWP are not clearly identified, however; instead the proposal identifies tasks related to monitoring "describe", "document",

"estimate" ..., monitoring is evidently required, but reviewers are left wondering how these projects are, or will, contribute to the goals of the FWP. A map showing the geographic extent of the projects, and an indication of how they interact, would be useful.

ProjectID: 9403400

Assessing Summer And Fall Chinook Restoration In The Snake River Basin

Nez Perce Tribal Fisheries/Watershed Program

Short Description: Assess current fall chinook spawning escapement and locations, juvenile emergence, growth rates, emigration timing, survival to dams, and smolt-to-adult survival for evaluating supplementation as a tool for recovery of Snake River fall chinook salmon . . .

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$316,822 / CBFWA Funding Recommendation = \$316,822

Recommendation:

Fund for one (more) year. Subsequent funding contingent on development of a more convincing proposal containing a better rationale of the need for the work, and a comprehensive summary and interpretation of the significance of past results.

Comments:

The stated goal of project is to “collect life history and survival info on wild Snake River fall chinook, and evaluate supplementation strategies” however it is difficult for reviewers to determine the (original and current) motivation of the work as the proposal consists mostly of a description of ongoing work,. The summary of past accomplishments does not indicate progress toward goals of the FWP but rather lists details such “water temperature data were collected ...”. Statements like “Quarterly progress reports have been submitted to BPA since the project’s inception” aren't helpful to reviewers in this regard Good reasons to continue funding this project are not given in the proposal. The proposal does make an effort to list hypotheses for each objective, but it is not clear how they would be evaluated. The ISRP was unable to determine what would be done with the proposed year (2000) funding, , and how it relates to previous (and future) plans. This project may be a candidate for cost sharing, now that NPT has won a settlement from Avista for fishery damage from the Washington Water Power dam. In that context reviewers wonder what is the justification for 100% support from FWP?

ProjectID: 9801003

Spawning distribution of Snake River fall chinook salmon

U.S. Fish and Wildlife Service

Short Description: Monitor the spawning distribution of fall chinook salmon to determine if supplemented yearling hatchery fish spawn where intended, and to document redd distribution and collect information on the spawning distribution of subyearling releases and natural . . .

ISRP Recommendation - Fund in Part / CBFWA Tier 1 / ISRP Comparison with CBFWA: Partially agree-fund in part

Sponsor Funding Request = \$182,666 / CBFWA Funding Recommendation = \$177,666

Recommendation:

Fund in part for one year, at previous year's level. Future potential for a multi-year review cycle, but better description/interpretation of significance of past results, and long-term future strategy, would be required.

Comments:

This proposal is for year 4 (possibly 3 – this is confusing in the proposal) of a five-year project to evaluate a strategy for releasing yearling fall chinook salmon from Lyons Ferry Hatchery at three sites upriver of Lower Granite Dam, with the intent of enhancing natural production in the relevant reaches. The monitoring methods include radio-tagging, and redd searches. The objectives are well focused, and the methods appropriate, (however the panel voiced some concern about the emphasis on technical/operational targets at the expense of interpretation of past results. The proposal lacks a good summary of the work performed to date. Reviewers are concerned about the minimal effort being expended on dissemination of results. One publication for a five-year project of this magnitude is not adequate even though the proposers state their intent to submit the “final report” to a professional fisheries journal. The budget in general appears to be appropriate for the scale of the project, however it is not clear why the large increase (\$182k vs \$125k) for FY 2000 vs FY 1999 is needed.

ProjectID: 9801004

M&E Of Yearling Snake R. Fall Chinook Released Upstream Of Lower Granite

Nez Perce Tribal Fisheries/Watershed Program

Short Description: Monitor and evaluate fish health, movement patterns, migration timing, travel times, juvenile emigration survival and adult returns through supplementation of Lyons Ferry Hatchery fall chinook salmon in the Snake and Clearwater rivers.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$272,798 / CBFWA Funding Recommendation = \$272,798

Recommendation:

Fund for one year. Subsequent funding contingent on a proposal that addresses the deficiencies noted in the panel summary.

Comments:

This is a proposal for monitoring and evaluation of Lyons Ferry Hatchery fall chinook released above Lower Granite Dam., Monitoring and evaluation of supplementation efforts is laudable, but it is difficult to determine how this project fits with others under the same umbrella (20541), which includes many other M&E efforts in the Lower Snake.. A map in the umbrella proposal indicating where all the projects are taking place, and how they fit together with this one would be helpful. This proposal is for the third (perhaps fourth) year of an expensive project; even so reviewers have misgivings about the project's methods. A key element is to radiotag yearlings, but no evidence is provided that they are capable of carrying the tags without affecting survival and/or behavior; the panel was skeptical that this would be feasible. What percentage of PIT-tagged fish are expected to provide (or have provided) useable data? What is the point of elastomer tagging? Why is assessment of VI tag retention being proposed? Other studies have shown poor VI tag retention. Necessary information in the proposal is missing. For instance, Dale Kellar is named project biologist but none of his/her credentials are presented and the responsibilities of a project biologist are not described. Publications from the project are apparently nil, and the education and experience of the principal project personnel are not apparently appropriate for a project of this size.

ProjectID: 9801005

Pittsburg Landing,Capt. John Rapids, Big Canyon Acclimation Facilities

Nez Perce Tribe

Short Description: Supplement natural production of Snake River fall chinook above Lower Granite Dam

through acclimation and final rearing of Lyons Ferry yearling and subyearling at two

sites on the Snake River and one site on the Clearwater River.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$686,000 / CBFWA Funding Recommendation = \$654,400

Recommendation:

Fund for one year. Subsequent funding contingent on a comprehensive review of all supplementation efforts in the Lower Snake River.

Comments:

This is an expensive (almost \$700k) project for supplementation of the natural population of fall chinook upstream of Lower Granite Dam, using Lyons Ferry Hatchery stock. The proposal is basically for facility operating costs (apparently mostly salaries, USACOE having paid the facilities cost). This is an ongoing project (initiated 1996), which is projected to continue indefinitely, with steadily increasing costs. A major concern of the panel is whether supplementation efforts in the Lower Snake River are viable in the long run. Given past performance, the panel was skeptical about the likely success of such efforts. How is the problem of possible negative effects on wild fish being resolved? What are the ecosystems risks resulting from the project?

ProjectID: 20036

Evaluate bull trout movements in the Tucannon and Lower Snake rivers.

U.S. Fish and Wildlife Service - Idaho Fishery Resource Office

Short Description: Determine distribution of migratory bull trout in the Tucannon and Lower Snake rivers, and identify passage limitations (if any) resulting from the hydropower system. Establish metapopulation boundary for Tucannon River bull trout.

ISRP Recommendation - DNF / CBFWA Tier 2 / ISRP Comparison with CBFWA: Disagree-DNF

Sponsor Funding Request = \$111,164 / CBFWA Funding Recommendation = \$107,164

Recommendation:

Do not fund. This proposal is not scientifically sound.

Comments:

This is a new proposal for monitoring and evaluation of the Tucannon Hatchery bull trout through the lower main stem Snake River system, with particular emphasis on passage efficiencies at Lower Snake river dams. Reviewers found the proposal to lack a sound scientific basis. There is a need to protect bull trout, but no indication is offered of their current status in the area. The ISRP strongly suggests that determination of status of bull trout be the first priority before trying to identify any passage limitations resulting from the hydropower system. There is little information on the status of bull trout in the Tucannon nor on the proportion of the population which may migrate to the mainstem. If only a few do so, the 20 fish with radios will yield minimal information. There is no discussion of alternative methods, and what is already known, if anything, about these populations. Most references are to gray literature (unrefereed) reports. The publication plan is weak (e.g. "Project reports will be distributed annually through annual progress reports"; "Opportunities will be explored to submit widely applicable findings to peer reviewed journals"). No cost share is proposed, and there is little sign of interaction with others as this proposal was being prepared. The Tucannon trapping proposal (Project 20024) would logically provide valuable bull trout movement data, but that possibility is not discussed. The proposers should revise the proposal extensively before it is submitted again for review.

ProjectID: 20142

Snake River Temperature Control Project, Phase III

Columbia River Inter-Tribal Fish Commission, University of Idaho, Oregon Graduate Institute

Short Description: Accurate characterization of Lower Snake River temperatures correlated with adult fall chinook salmon and steelhead passage and spawning success, and development of a flow/temperature management plan to maximize benefits of providing cooler water.

ISRP Recommendation - DNF / CBFWA Tier 3 / ISRP Comparison with CBFWA: Agree-DNF

Sponsor Funding Request = \$564,491 / CBFWA Funding Recommendation =

Recommendation:

Do not fund. The problem is a priority but the proposal does not demonstrate that the problem will be addressed in scientifically rigorous and defensible manner.

Comments:

This is a proposal for a combination of monitoring and predictive modeling of temperature in the Lower Snake River. The monitoring aspects include both physical (temperature) monitoring, for use in computer simulation modeling, and fish tagging to determine the relationship of fish movement to water temperature. Doubtless, better information about the relationship of temperature distribution in the Lower Snake, and its relationship to dam operations, and fish behavior, is needed. However, this is an expensive proposal (over two million dollars over four years), and the proposal isn't adequate for such a large project. Almost half of the budget would go to Oregon Graduate Institute for computer modeling, but there is almost no information about the nature of the model that would be used. How would the model partition the physical system, what would be its spatial resolution, time step, etc.? What data would be required to run the model, and will they be available after the period of intensive data collection? How does the proposed model relate to the work already done by Yearsley at EPA. What is EPA's commitment to this work (they funded Phases 1 and 2, in part). There is no indication (despite years of evaluation) that Dworshak water could significantly eliminate a thermal block. The basis for being able to substitute steelhead as surrogates for fall chinook is not given. The need to radiotrack fish is not justified - wouldn't it be reasonable to assume they would track the cooler water? The proposers should revise the proposal extensively before it is submitted again for review.

ProjectID: 9700900

Evaluate Rebuilding The White Sturgeon Population In The Lower Snake Basin

Nez Perce Tribal Fisheries/Watershed Program

Short Description: Evaluate the need for and identify potential measures to protect and restore white sturgeon between Hells Canyon and Lower Granite dams to obtain a sustainable annual harvest of white sturgeon.

ISRP Recommendation - Fund in Part / CBFWA Tier 1 / ISRP Comparison with CBFWA: Partially agree-fund in part

Sponsor Funding Request = \$419,494 / CBFWA Funding Recommendation = \$409,494

Recommendation:

Fund in part at reduced level, subsequent funding contingent on submission of a more coherent and scientifically defensible proposal.

Comments:

This is a proposal for the fourth year of an ongoing project "... to restore and rebuild the white sturgeon populations in the [Lower Snake River]". Apparently this is proposed base program funding, rather than any specific project. The major problem being addressed appears to be lack of current information on sturgeon stocks. \$400K has been apparently spent to develop a study plan, but no data have as yet been gathered. There is no clear evidence of collaboration with other researchers except for an agreement to share data.; it's unfortunate that there more active cooperation with IPCO is not proposed. There is little information about what, specifically, has been accomplished with prior

years' funding. The study objectives (e.g., "assess the current status ..." and "provide the basis to evaluate ...") are vague. It is not clear how the "Proposal Objectives" relate to the Fish and Wildlife Program Objectives. The publication plan is inadequate; after three years, and expenditure of over a million dollars, the project has produced no peer-reviewed publications. No one is identified to conduct the computer simulation that will be necessary to answer the questions posed in the proposal. The panel was especially concerned about the large expenditures to date and the apparent lack of progress towards the study objectives.

This project would benefit from an overall project review, which can't be accomplished effectively given the information presented here. The Council should set a termination date for this project ("outyear costs" section of the budget suggests that it will continue indefinitely), and should require that a multi-year proposal be submitted.

ProjectID: 9202409

Enhance Conser. Enforcement For Fish & Wildlife, Watersheds Of The Nez Perce

Nez Perce Tribal Fisheries/Conservation Enforcement

Short Description: Increase law enforcement (LE) protection of fish, wildlife, their critical habitats and other essential natural resources within watersheds managed by the Tribe. The LE program will be coordinated with all other resource enhancement projects of the NPT.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$425,236 / CBFWA Funding Recommendation = Recommendation:

Fund for one year. Subsequent funding contingent on more complete background information on the magnitude of the illegal harvest problem and the expected benefits to fish and wildlife.

Comments:

This is a proposal for support of enforcement of fisheries and related habitat regulations on the Nez Perce reservation, in the amount of about \$400k per year. This proposal cannot be evaluated in the same manner as a study proposal. There is a scientific basis for law enforcement and protection of returning adults, particularly from weak stocks. However, the proposal would benefit from more complete background information on the magnitude of the illegal harvest problem and the expected benefits to fish and wildlife.

ProjectID: 20051

Decrease Sedimentation And Temp. In Streams, Educate Resource Managers

Oregon State University Extension Service

Short Description: MULTI-YEAR PROJECT - Reduce sedimentation, water temperatures, in Oregon's salmon streams. Educate natural resource managers to facilitate widespread management changes to benefit fish and wildlife.

ISRP Recommendation - DNF / CBFWA Tier 3 / ISRP Comparison with CBFWA: Agree-DNF

Sponsor Funding Request = \$882,877 / CBFWA Funding Recommendation = Recommendation:

Do not fund. The scientific justification for this request is inadequate.

Comments:

This is a proposal to reduce sedimentation from dryland farming in the Oregon Columbia Basin, via landowner incentives for no-till farming, and streamside improvements. An assessment activity for Eastern Oregon stream temperature is also included. Because the primary focus of the proposal is on mitigation of agricultural effects on habitat unrelated to the hydropower system, BPA funding of most or all of this proposal is inappropriate, and that the proposal should instead be directed elsewhere, e.g. to USDA. The proposal is expensive (over \$1m in the first year, and almost \$4m over four years, and may be too ambitious. No relationship to previous Watershed Assessment activities is indicated, so it is impossible to determine whether the targeting of activities is appropriate. Coordinated activities for habitat restoration in this part of the Basin may well be in order, but the case needs to be made in comparison with other habitat improvement possibilities elsewhere, and the case needs also to be made for how and why the expenditure of funds here would be appropriate. (For instance, part of the request is for funding of incentive payments of \$10/A for producers to utilize no-till agriculture – however, it is not clear whether any of this acreage is near live streams.)

The proposed project could, perhaps, produce some public relations benefits and better involve youth and landowners in fish and wildlife recovery efforts, but it should be designed with input from fish biologists, geomorphologists, and other specialists to identify probable limiting factors. Should the proposers decide to resubmit, the panel would hope to see a map indicating current land use, current and projected sediment sources, current and potential status of the streams, and how the proposed activities would or could affect that status.

ProjectID: 20053

Anadromous Salmonid Transit System

Morrison-Knudsen Corp

Short Description: MK and co-investigators are proposing a conceptual plan to bypass emigrating salmonids around Snake River dams which includes EPC of the bypass system of conduits and channels, tests on fingerlings/smolt response, and suggested routes for the system.

ISRP Recommendation - DNF / CBFWA Tier 3 / ISRP Comparison with CBFWA: Agree-DNF

Sponsor Funding Request = \$698,523 / CBFWA Funding Recommendation =

Recommendation:

Do not fund.

Comments:

The proposed project to develop the “conceptual design” for a smolt bypass system for the Lower Snake River, which would consist of an artificial, parallel channel system to bypass the four Lower Snake River dams. This would be an alternative to breaching of the Lower Snake Dams, or drawdown to river level. The proposal would include development of a “model conduit and engineered stream model”, at the Hagerman hatchery site, to test physical and biological performance of an artificial stream system. This proposal was met with a diversity of views from the panel. The majority opinion was that the proposal was hastily developed, and lacked sufficient motivation other than that dam breaching is not a viable option to solving fish passage problems. The biological testing, in particular, is minimally specified. The majority of the panel was particularly critical of the absence of a testable hypothesis. Several of the principals appear to have no expertise relevant to the project. Inclusion of a task is to “review the existing literature” did not give the panel confidence in the capabilities of the project team; reviewers expect familiarity with the literature at the proposal stage. A minority view on the panel was that the project represents an alternative approach, which, notwithstanding that it may not come to fruition, deserves careful consideration. Even among the minority, however, there was concern as to why it is proposed to conduct all of the work in FY 2000. No doubt, the conceptual design, and accompanying background work, can and probably should be done in short order, however it is not at all clear whether one year will be enough time to construct and test the artificial stream system.

ProjectID: 20085

Analyze And Improve Fish Screens

Nez Perce Tribal Fisheries/Watershed Program

Short Description: Analyze and Improve Fish Screens on pump and water diversion in cooperation with the Idaho Fish and Game.

ISRP Recommendation - DNF / CBFWA Tier 3 / ISRP Comparison with CBFWA: Agree-DNF

Sponsor Funding Request = \$129,141 / CBFWA Funding Recommendation = Recommendation:

Do not fund. Inadequate scientific justification is provided.

Comments:

This is a proposal for a new project to evaluate opportunities to improve screening of irrigation pumps and diversions in the Lower Snake River. It would consist of an inventory of unscreened pumps and diversions, and installation of screens was needed. The project would be carried out in cooperation with the Idaho Department of Fish and Game. A critical deficiency of the proposal is its failure to describe adequately the problem and its magnitude. Why should this be a priority effort, in comparison with other habitat activities? Is there justification for this effort in a watershed restoration plan? This project seems to be directed at installation of screens on specific irrigation works owned by others, and the panel wondered how effective that approach will be in the long run. Another panel concern was that absence of any information in the proposal indicating how many screens would be installed, and the unit cost. The budget seems to

be almost entirely for personnel. How will objective 2 (“Install needed screens identified by the inventory”) be met, in the absence of supplies? Perhaps that is a contribution of ID F&G, but this needs to be spelled out. In its current form, funding is not merited. If the proposal is resubmitted, it needs to be much more specific in terms of what will be done, and what impact it could make on the overall problem associated with irrigation diversions in the Lower Snake system.

ProjectID: 20102

Research/Evaluate Restoration Of NE Ore Streams And Develop Mgmt Guidelines

Oregon State University and University of Oregon

Short Description: Research/evaluate approaches to the restoration of freshwater salmon and riparian wildlife habitats. Quantify the biophysical responses of both passive and active restoration projects. Establish reference reaches of value for the normative river concept.

ISRP Recommendation - Fund / CBFWA Tier 2 / ISRP Comparison with CBFWA: Disagree-fund; strongly recommend

Sponsor Funding Request = \$309,936 / CBFWA Funding Recommendation = Recommendation:

Fund. This is an outstanding proposal, with a strong scientific basis, which should be given the highest priority for funding.

Comments:

This is a new proposal by an interdisciplinary group at Oregon State University and the University of Oregon to take a new look at habitat restoration protocols. The proposers argue that the \$200 million spent to date on habitat restoration in the PNW has been largely unsuccessful, due to poor planning, absence of a scientific basis, and absence of post-project monitoring and evaluation. They propose to implement a set of long-term studies at an ecosystem restoration site in northeastern Oregon, at which background data required for assessment and improvement of habitat restoration activities could be undertaken. Overall, this is by far the best proposal submitted for this basin.

The authors are well qualified to take on the work, and it is evident that restoration activities have not been well focused in that past. The panel was especially impressed that the proposal is based on a pilot project (unfunded, at least by BPA). This proposal is also notable because it examines (actually measures) the responses of streams, fish and other biota to restoration. Most restoration efforts measure inputs (miles of fence etc.) rather than consequences. The panel did feel that there should be more emphasis on information/technology transfer. An information transfer plan should be explicitly requested by the BPA COTR at the time of funding. The panel is confident that will result in many conference publications and journal papers (the record for which is woefully inadequate in most projects sponsored by the program). However, there also needs to be an element of information transfer that assures that this information would make it to the parties that need it the most, especially in the near term. For a project funded at this level (over \$310k per year) the project should have at least one person dedicated to education and outreach. The intention to have “... seminars of research

results for land managers ...” and “... on the ground demonstrations and workshops ...” is good, but it needs to be a more central focus of the project.

ProjectID: 20016

Snake River Steelhead Hooking Mortality Study

Washington Department of Fish and Wildlife

Short Description: Utilizing hatchery steelhead trout and two unique research methods, assess hooking mortality of wild Snake River steelhead trout.

ISRP Recommendation - DNF / CBFWA Tier 2 / ISRP Comparison with CBFWA: Disagree-DNF

Sponsor Funding Request = \$117,240 / CBFWA Funding Recommendation =

Recommendation:

Do not fund. The study design is not scientifically adequate, and would not result in useful information.

Comments:

This is a new proposal that has the goal to determine if fall season hooking mortality of wild Snake River steelhead is significant. The approach would be to collect, via hook and line, 50 adult steelhead in the Grande Ronde River, which then would be radio tagged. The proposed methodology has critical deficiencies. For example, is the proposed sample of 50 fish enough to make credible conclusions? Second, reviewers questioned the assumption that radiotagging will not affect the survival of the sample fish, and this also becomes a problem of small sample statistics, which almost certainly will not provide precise results or endure statistical review. Finally, the assumption that “Hooking mortality rates for adult hatchery summer steelhead are the same as for naturally produced adult summer steelhead ...” seems very much open to question and was also questioned in the CBFWA evaluation. This proposal poses significant cost and effort to indirectly assess mortality by radiotracking and by releasing hatchery fish into a pond after capture. A significantly scaled-down project to play a small number of fish at 70 degrees and hold them at an established operating hatchery might be worthwhile if there is supporting evidence that there is a problem with the 1,000 – odd fish caught in September in the Tucannon and Grande Ronde

Overall, reviewers conclude that the proposed project is poorly conceived, and does not represent sound science. The proposers neglected to reference several published studies that examined hooking mortality of steelhead, Atlantic salmon, and other species. Those studies (e.g., Reingold 1975 Trans Am Fish Soc; Pettit 1977 TAFS; Hooten 1987 Proc. Catch & Release Symposium, Arcata CA) documented a single capture mortality of about 5% and found no indication that catch-and-release affected fish behavior or homing.

ProjectID: 20063

Evaluate Effects Of Catch And Release Angling On White Sturgeon

U.S. Geological Survey, Columbia River Research Laboratory, Idaho Department of Fish and Game

Short Description: Use physiological telemetry to monitor metabolic activity, determine energetic costs and assess stressful effects of catch and release angling on white sturgeon.

ISRP Recommendation - Fund in Part / CBFWA Tier 3 / ISRP Comparison with CBFWA: Disagree-fund in part

Sponsor Funding Request = \$271,486 / CBFWA Funding Recommendation = Recommendation:

Fund in part (catch and release portion only). Do not fund the laboratory components (Category 1b).

Comments:

This proposal would evaluate the effects of catch and release angling on the stress physiology, reproductive physiology, and mortality of white sturgeon in laboratory and field studies. The field component would use physiological telemetry techniques, based on “sonic or radio tags” surgically implanted. The laboratory phase of the research would develop relationships between physiological stress variables (measured in a swimming respirometer) with variables telemetered in the natural setting. Assessment of catch and release mortality of white sturgeon has apparently not been assessed and needs examination. Reviewers were concerned that the study design focuses on evaluation of physiological indicators of stresses in the lab and then (somehow) would extrapolate that to survival of fish under natural conditions. A few fish would be caught in the field, returned to the lab for tag implantation and then released apparently to monitor hooking effects. The panel felt that radiotracking could yield useful data on possible stress and mortality, but it would make much more sense to do this in location (say below Bonneville) where fish are more easily obtained. The physiology component, on the other hand, was much less favorably received. In particular, the proposed procedure to administer stressors to captive fish in the laboratory seems inappropriate (and would incur major logistic problems). Overall, the panel viewed the catch and release portion of the project favorably – so long as it were conducted at an alternative location (e.g., below Bonneville) where there are more fish. The information to be acquired from such a study could be highly useful in the regulatory environment, and in particular, for determining the extent to which controls on the recreational fishery are desirable or necessary.

This is a new proposal, for a project of duration five years. The proposal does not indicate a time line, so the panel was able to infer relative levels of effort only from the budget information, which seems to suggest that most of the laboratory and field work would be conducted in years 1-3. Given this limited information, it was not possible for the panel to determine whether the level of effort is appropriate.

ProjectID: 20530

Multi-Year Tucannon Anadromous Fish Plan

Columbia Basin Fish & Wildlife Authority

Short Description:

ISRP Recommendation - na / CBFWA Tier na / ISRP Comparison with CBFWA: Umbrella Proposal

Sponsor Funding Request = \$ / CBFWA Funding Recommendation = Recommendation:

NA - Umbrella Proposal

Comments:

This is an umbrella proposal for 3 projects, all ongoing, which relate primarily to habitat restoration in the Tucannon River basin. There is little information in the proposal. The apparent lack of effort given to it is indication of a lack of coordination and focus in watershed restoration efforts within the basin. Rather than an enhancement this umbrella proposal has instead become a liability for all three component projects..

ProjectID: 20020

Tucannon River Spring Chinook Captive Broodstock Program

Washington Department of Fish and Wildlife

Short Description: Modify existing facilities at Lyons Ferry and Tucannon hatcheries to implement a captive broodstock program for Tucannon River spring chinook. Rear and spawn broodstock, raise their progeny and release approximately 120-140 thousand smolts in the Tucanno

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$283,538 / CBFWA Funding Recommendation = \$134,049

Recommendation:

Fund for one year; subsequent funding contingent on development of an integrated plan habitat, hatchery, and broodstock programs in the basin.

Comments:

This is a new proposal to implement a captive broodstock program in the Lower Tucannon River basin, where the proposers argue that the chinook population is “genetically distinct” from other Snake River populations. The proposal is reasonably specific and well-formulated. One shortcoming of the proposal is its failure to address the question of whether deleterious interactions with juvenile wild fish occur. Nonetheless, the panel felt this was one of the better proposals in the general category of captive brood proposals. However, all captive brood projects these need to be reviewed at a programmatic level. The main question is whether committing to raise more “museum fish” really makes sense. In the absence of habitat improvements (mentioned in various other proposals under the same umbrella), it does not appear that the Lower Tucannon is currently capable of supporting a wild population – notwithstanding (or perhaps because of) its apparent ability to sustain a hatchery population. Lacking an approach that addresses the wild population in the context of the hatchery population, this project may not be viable. On the other hand, after the first year, it is relatively cheap. But, the panel was quite concerned that FWP is not addressing habitat and captive brood projects in an integrated manner.

ProjectID: 20024

Evaluate Fall Chinook Natural Production and Spawning Habitat Conditions in

Washington Department of Fish and Wildlife

Short Description: Assess fall chinook natural production and the potential for hatchery supplementation. Document sedimentation of fall chinook redds and

estimate survival of eggs within redds. Capture, identify, enumerate and calculate survivals for migrating sub-yearl

ISRP Recommendation - Delay Funding / CBFWA Tier 2 / ISRP Comparison with CBFWA: Disagree-until corrected

Sponsor Funding Request = \$120,687 / CBFWA Funding Recommendation = Recommendation:

Delay funding until deficiencies are corrected. Objective 2, 3, and 6 might be technically and programmatically justified, and a revised proposal that addressed only these elements might be fundable (at something less than 50% of the currently proposed project cost). Objective 1 has low probability of success, and Objective 4 already appears to have been addressed by other investigators (Category 1d).

Comments:

This is a proposal for new work to assess sedimentation of fall chinook redds and estimate outmigration of subyearlings. The problem noted is that most salmon carcasses recovered from fall chinook redds in the lower Tucannon River are unmarked, and it is known that many fall chinook in the area are strays. Therefore, the motivation for the study seems to be to answer whether fall chinook strays spawn successfully. The panel felt that objective 1, to determine the fate of redds, has little chance of success. The author acknowledges that high sedimentation precludes egg to alevin survival; is it really necessary to try to document poor survival (with a very low chance of success), or is it more prudent to accept poor survival as consensus and move ahead? The proposal also identifies a number of habitat issues in the lower Tucannon associated with agricultural practices, and it appears that the project would really be a habitat survey of some kind. The problems of determining the viability of the natural population, potential for supplementation, and habitat restoration potential are no doubt linked. However, the integration is not well addressed in this proposal. Furthermore, to the extent that this is a habitat project, it has not addressed the question of prior watershed analysis, as required in the Request for Proposal, and on this basis alone, should be given a low priority for funding. If the proposers decide to resubmit in the future, they need to either focus the project more clearly, or develop a better and more convincing argument that they can address the breadth of issues raised. Qualifications of the PI appear to be primarily in the fisheries area, if habitat issues are to be addressed, expertise in habitat science would need to be added to the project team. Finally, the information transfer plan is weak. More than just a promise for publication of results "if possible" in refereed journals is necessary.

ProjectID: 9401805

Continued Implementation Of Asotin Creek Watershed Projects

Asotin County Conservation District

Short Description: Improves on "grass roots" public and agency cooperation and collaboration for habitat restoration on private and public property. Continues to coordinate, assess, and monitor fish and wildlife cost-share programs throughout Asotin Creek watershed.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$239,000 / CBFWA Funding Recommendation = \$235,000

Recommendation:

Fund for one year; future funding contingent on comprehensive review of restoration programs within the basin, and demonstration of biological benefits.

Comments:

This proposal is for continuation of the Asotin Creek habitat restoration project. It is not clear from the proposal when the project was initiated (1993?). The major project activities appear to be improving riparian shading via planting of phreatophytes to reduce summer stream temperature, and in-channel modifications to increase the number and size of pools. This plan to continue habitat restoration in the Asotin Creek watershed is enthusiastic but deficient in that no attempt is made to translate possible habitat improvement into gains in fish numbers. The proposal is difficult to evaluate, as the proposal is not written in a form that would allow comparison of the project's accomplishments with goals. Furthermore, the project was apparently initiated prior to completion of a watershed analysis. From the limited information included in the proposal, the project probably warrants continued funding. However, it appears that the project is scheduled to continue indefinitely; it needs a definite end date, and set of reviewable objectives and a time line. The panel was particularly concerned that despite continued monitoring, little information was presented to indicate what benefit (or harm!) had resulted from past restoration activities. Some of the instream work, in particular, has the potential to do serious damage. One panel member pointed out that these streams would seem to be ideal incubators of whirling disease. The project needs to produce an evaluation, in a subsequent proposal, of sediment fate, output and stability of structures that have been affected by past project activities, and an assessment of how the fish are responding. Has the project resulted in biologically measurable benefits to fish and wildlife?

ProjectID: 9401806

Implement Tucannon River Watershed Plan To Restore Salmonid Habitat
Columbia Conservation District

Short Description: Restore, protect, & enhance fish habitat, riparian, & upland areas to address FWP measure 7.6, habitat goal, policies, & objectives.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$330,000 / CBFWA Funding Recommendation = \$253,000

Recommendation:

Fund for one year. Subsequent funding contingent on comprehensive review of restoration programs within the basin, and demonstration of biological benefits.

Comments:

This project is very similar to Proposal 9401805. The geographic focus is slightly different (farther upriver), and the emphasis is more on in-stream improvements. This project has been ongoing since 1996 or before, and is projected to continue indefinitely. It is very difficult to review projects such as this on an annual basis, particularly when little or no information is given about project objectives and milestones. Proper oversight

is not possible, nor is it likely to be, unless the project has: a) a clear end date, and b) a set of project milestones pertinent to individual years, against which progress can be measured. For instance, the proposal states that in 1998 10,000 trees were planted, and about 12,000 feet of riparian fence installed. This sounds impressive, but no indication is given of either: a) what the goal was for each of these measures, or b) how these numbers relate to the overall watershed restoration plan. Will this watershed ever be restored? Furthermore, the panel was particularly concerned that despite continued monitoring, little information was presented to indicate what benefit (or harm!) had resulted from past restoration activities. Has the project resulted in biologically measurable benefits to fish and wildlife? of the instream work, in particular, has the potential to do serious damage. The project needs to produce an evaluation, in any subsequent proposal, of sediment fate, output and stability of structures that have been affected by past project activities, and an assessment of how the fish are responding.

ProjectID: 9401807

Continue With Implementation Of Pataha Creek Model Watershed Projects
Pomeroy Conservation District

Short Description: Reduce the sedimentation from the Pataha Creek Watershed into the critical spawning and rearing area of the fall chinook salmon in the lower Tucannon River. Improve habitat for spawning and rearing steelhead in upper portion of Pataha Creek

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$212,995 / CBFWA Funding Recommendation = \$120,000

Recommendation:

Fund for one year. Subsequent funding contingent on comprehensive review of restoration programs within the basin, and demonstration of biological benefits.

Comments:

This project is very similar to Proposals 9401805 and 9401806. The geographic focus is slightly different. This project has been ongoing since 1996 or before, and is projected to continue indefinitely. It is very difficult to review projects such as this on an annual basis, particularly when little or no information is given about project objectives and milestones. Proper oversight is not possible, nor is it likely to be, unless the project has a) a clear end date, and b) a set of project milestones pertinent to individual years, against which progress can be measured. The information presented is insufficient to determine whether project objectives are being achieved. Furthermore, the proposal talks about such goals as tons of soil "saved". Is this really a Program goal, that is somehow related to the hydropower system? It sounds much more appropriate to NRCS programs, one would at least hope for some cost sharing.

ProjectID: 20018

Tucannon River and Asotin Creek Riparian Enhancement
Washington Department of Fish and Wildlife

Short Description: Riparian Enhancement of the Tucannon River and Asotin Creek at Sites Unqualified for other Publically Funded Salmonid Habitat Restoration Efforts.

ISRP Recommendation - DNF / CBFWA Tier 2 / ISRP Comparison with CBFWA: Disagree-DNF

Sponsor Funding Request = \$134,051 / CBFWA Funding Recommendation = Recommendation:

Do not fund; encourage resubmission following comprehensive review of restoration programs within the Tucannon basin, and demonstration of biological benefits.

Comments:

This is a new proposal to supplement already implemented projects (by Asotin County, Pomeroy, and Columbia Conservation Districts) to improve stream habitat within the Tucannon River Basin. Funds would be used for restoration efforts at sites not eligible for funding under other projects – i.e., where landowner cost sharing is required. Funds would be used primarily for restoration of riparian vegetation to help reduce water temperatures.

This project appears driven more by programmatic opportunities and constraints, than by scientific necessity. It badly needs a review to determine overall objectives, what measures are most appropriate to achieving them, and how funding should be allocated to assure the greatest return in terms of habitat. This is not achievable within the framework of an annual reviews of an ongoing project. It may well be that some funding from other ongoing activities would be better allocated to the sites and measures identified in this proposal. However, information is not at hand to make such a judgement, and the only responsible action at this point is to decline to fund this activity until a comprehensive review of all of Tucannon River projects is completed. This will require a site visit by an independent panel, equipped with adequate background information to allow it to provide a sound assessment of progress and viability of the project(s).

CBFWA's technical evaluation was that "The project proposes using BPA funds for private landowners wishing to avoid restrictive conditions associated with alternative funding sources (page 8). Monitoring plan needs more detail. Not enough detail in the methods (width of setback, number of trees, stream distance protected)." Reviewers agree that the proposal does not warrant approval at this time and should rather await re-submittal with more clearly defined objectives and with assurance that the project will be of benefit to fish and wildlife.

Idaho Supplementation Studies and Related Proposals

ProjectID: 20545

Idaho Supplementation Studies - Umbrella Proposal

Idaho Department of Fish and Game

Short Description: Evaluate various supplementation strategies for maintaining and rebuilding spring/summer chinook populations in Idaho. Develop recommendations for the use of supplementation to rebuild naturally spawning populations.

**ISRP Recommendation - na / CBFWA Tier na / ISRP Comparison with CBFWA:
Umbrella Proposal**

Sponsor Funding Request = \$ / CBFWA Funding Recommendation =

Recommendation:

NA - Umbrella Proposal

Comments:

Neither this umbrella proposal, nor the set of linked proposals in it, adequately summarize past results. Given the long funding duration of many of the proposals, it is disconcerting that the set of proposals, and the umbrella proposal, do not identify the strengths, weaknesses, and uncertainties of the supplementation program in the context of progress made thus far.

These studies should be producing results by now, but few are described. Any meaningful review to serve as a basis for continuing the work must include examination of the results to date in light of the original objectives. Low run strength was acknowledged to be a problem for the studies, but no assessment is provided of its impact on progress even though runs continue to decline. The proposals continue to include a commitment to genetic studies for assessing changes in the supplemented populations. Existing literature includes reports describing genetic change in supplemented populations and loss of productivity (smolts per egg, or other similar survival index). The relevant questions now concern significance of the loss, or ways to overcome productivity losses rather than further demonstrations of change. The study design should be recast to address these questions. Additionally, to facilitate better coordination of the projects and consistent reporting, someone, perhaps a population geneticist, should act as a coordinator between the projects.

Perhaps a symposium similar to the recent Lower Snake Compensation Plan symposium (February 1998) could be used for project sponsors to present and discuss their results and assess programmatic level progress. The results of the studies and such a symposium could offer valuable regionally relevant information.

Are the projects scientifically sound? The studies make more sense now than they did at the outset. Because the Council approved supplementation to “save” populations threatened with extinction, supplementation stocking now has two goals: protection of endemic fish and increasing fish abundance. Many elements of the studies are directed to finding appropriate brood sources for restoring extinct runs and for minimizing impacts on endemic fish in remnant stocks. Initial assumptions included increasing instead of decreasing survival, so numbers of fish may not be sufficient to make the necessary assessments required by the study design. Further, the presumption was that summer parr count was a viable assessment tool, but that presumptions did not hold, so some modifications or adjustments must have been made, but none are discussed. The absence of any analysis to date makes it impossible to vouch for continuing scientific soundness of the work.

Will the work benefit fish? Supplementation should produce more smolts and thus more returning adults unless spawning and rearing areas are limiting size of a supplemented

population. The Council has approved the use of supplementation to help protect runs that are threatened with extinction. That approval is a decision to proceed even though supplementation increases risk for endemic genotypes. The risk of losing at least some of these populations is so great, however, that the Council's perception is that the only chance to perpetuate these populations is via supplementation. Altered gene pools, increased mortality for endemics, and reduced productivity (measured, e.g., as smolts per 1000 eggs) are likely associated outcomes once a decision to supplement is made. Even though benefits are subsequently redefined to include protection of endemic genotypes as well as increased fish abundance; a result of high egg and fry survival in a hatchery, successful protection of endemic genotypes may decline in time if the life of the program is extended.

The supplementation effort in the Snake River Basin needs to be subjected to a programmatic review similar to the Lower Snake Compensation Plan symposium of February 1998.

ProjectID: 8909800

Idaho Supplementation Studies

Idaho Department of Fish and Game

Short Description: Evaluate various supplementation strategies for maintaining and rebuilding spring/summer chinook populations in Idaho. Develop recommendations for the use of supplementation to rebuild naturally spawning populations.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$974,229 / CBFWA Funding Recommendation = \$974,229

Recommendation:

Fund for one year. Subsequent funding contingent on a programmatic review of the supplementation effort in the Snake River Basin similar to the Lower Snake Compensation Plan symposium of February 1998.

Comments:

This is Idaho Fish and Game's portion of the supplementation study in Johns Creek, Crooked River, American River, Red River, White Cap Creek, Crooked Fork Creek, Brushy Fork Creek, Colt Killed Creek, and Big Flat Creek in the Clearwater Drainage. In the Salmon River drainage, it also includes mid-South Fork Salmon River, Sulphur Creek, Marsh Creek drainage, North Fork Salmon River, Lemhi River, Pahsimeroi River, Upper Salmon River, and Alturas Lake Creek.

This proposal provides an excellent discussion of statistical analysis – assumptions and procedures. There is strong integration with other efforts including referencing points of debate in the literature and describing sources of uncertainty. The proposal provides an excellent discussion on the issue of supplementation.

The abstract indicates that the project assumes at the outset that supplementation is a worthwhile procedure, and that problems with it found in evaluation will be “fixed,” rather than taking the more responsible outlook that supplementation may or may not be a good thing, and that if insurmountable problems with it (unavoidable, fatal flaws) are found, it will be abandoned. Study of natural populations is only vaguely mentioned. Such study ought to be emphasized as the major basis of comparison for the supplemented populations. Otherwise, the research questions posed are apt.

The methods outlined cover most of the necessities in a general way, but specifics are lacking, e.g., Task 1.e, estimate late-summer parr densities from snorkeling surveys. How will the estimation be calculated? How will sample areas be chosen? How will these areas be covered by the divers (and under what standardized conditions of weather, time of day, time of night); what data will be recorded; and by what methods of calculation will the data be converted to density estimates? Unless such questions are answered, the appropriateness of the methods cannot be judged. The one authority (Schaeffer et al. 1979) on sampling shown for this task in companion proposals in the 89098 series is not referenced in this project's proposal, and, in any event, does not appear on the basis of its title to be fully appropriate. The wording of Task 1.h is unclear: “Compare natural

production or supplements populations to unsupplemented populations and baseline data.” This sounds undecided about what sorts of populations to compare with what other sorts. And why even consider comparing natural production with unsupplemented populations?--aren’t the two things identical?

The specific part (treatment or control) each of these streams plays in the study is not presented, but the “Umbrella Proposal” outlines what appear to be reasonable procedures for addressing problems in the analysis. By now at least a preliminary analysis should now be available to provide a basis for a project assessment. Data from the three parts of the study should be compiled and analyzed as soon as possible, and subjected to a rigorous review. The review should include an assessment of the probability that the goals can be attained under present conditions for anadromous species in the basin.

ProjectID: 8909801

Evaluate Salmon Supplementation in Idaho Rivers (ISS)

U.S. Fish and Wildlife Service - Idaho Fishery Resource Office

Short Description: Evaluate various supplementation strategies for maintaining and rebuilding spring/summer chinook salmon populations in Idaho. Develop recommendations for the use of supplementation to rebuild naturally spawning populations.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$129,965 / CBFWA Funding Recommendation = \$129,965

Recommendation:

Fund for one year. Subsequent funding contingent on a programmatic review of the supplementation effort in the Snake River Basin similar to the Lower Snake Compensation Plan symposium of February 1998.

Comments:

This portion of Idaho Fish and Game's supplementation study is at Clear Creek and Pete King Creek on the Clearwater River. Tagged parr will be released in Pete King Creek either from Dworshak or Rapid River. Seven hundred juveniles from natural rearing will receive PIT tags. The choice of Dworshak or Rapid River stocks was not clear; are these two stocks being tested to determine which is "best" to supplement parr production in Pete King Creek? If so, are the two used in different years? How are results kept separate? If the trial is not to assess relative performance of parr stocking from the two brood sources, the purpose is not clear. Idaho Fish and Game concluded that summer counts of parr did not prove to be a useful technique. If that is the case here too, and evaluations have to be made based on smolt or adult counts, are numbers sufficient to provide useful statistical sensitivity?

Smolts from Kooskia (source of brood?) are stocked in Clear Creek where there is both an adult trapping facility and a screw trap to monitor downstream migrants. Presumably, the work is designed to be a smolt stocking treatment. Evaluation is based on 700 marked juveniles (700 each for hatchery fish and stream fish), but there is no analysis to show that with the low return rates experienced in the system that 700 juveniles will produce enough adults to complete the analysis.

Smolts are re-counted at Lower Granite Dam, adults are counted in Clear Creek, and redds are counted in both streams. The proposal is to obtain peak spawner counts, but given that such counts are notoriously unreliable, this measure of success should be re-assessed as an end-point for these research projects.

ProjectID: 8909802

Evaluate Salmon Supplementation Studies In Idaho Rivers

Nez Perce Tribal Fisheries/Watershed Program

Short Description: Evaluate various supplementation strategies for maintaining and rebuilding spring/summer chinook populations in Idaho. Develop

recommendations for the use of supplementation to rebuild naturally spawning populations.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$377,455 / CBFWA Funding Recommendation = \$377,455

Recommendation:

Fund for one year. Subsequent funding contingent on a programmatic review of the supplementation effort in the Snake River Basin similar to the Lower Snake Compensation Plan symposium of February 1998.

Comments:

This is the Nez Perce Tribe's portion of the Idaho supplementation study in Lolo, Eldorado, Newsome, Squaw, and Papoose creeks in the Clearwater Basin; and Slate Creek, Johnson Creek, Lake Creek, and the Secesh River in the Salmon River basin. The role of each stream is not described and readers are referred to the umbrella proposal (which explains the methods only at a general level). No progress is described so no project assessment is possible, although the project (or its parent project) approaches ten years' duration. The project is basically the same as 8909800, and 8909801, except for facilities, budget, and personnel. Therefore it is unnecessary that the experimental design be reviewed as part of this proposal as it has already been developed and reviewed elsewhere.

ProjectID: 8909803

Evaluate Salmon Supplementation Studies In Idaho Rivers

Shoshone-Bannock Tribes

Short Description: Evaluate various supplementation strategies for maintaining and rebuilding spring/summer chinook populations in Idaho. Develop recommendations for the use of supplementation to rebuild naturally spawning populations.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$228,438 / CBFWA Funding Recommendation = \$228,438

Recommendation:

Fund for one year. Subsequent funding contingent on a programmatic review of the supplementation effort in the Snake River Basin similar to the Lower Snake Compensation Plan symposium of February 1998.

Comments:

This is the Shoshone-Bannock Tribe's portion of the Idaho supplementation study in the South Fork Salmon River, Bear Valley Creek, Valley Creek, West Fork Yankee Fork Salmon River, East Fork Salmon River, and Herd Creek. All test sites are in the Salmon River drainage. The role of each stream is not described and readers are referred to the umbrella proposal (which explains the methods at only a general level). No progress is described to so no project assessment is possible, although the project (or its parent project) approaches ten years duration. This is the same proposal as the other supplementation proposals except for budget, facilities, and named areas. The reviewers asked: Is there nothing unique about the different study sites that is worthy of mention? Why does the experimental design and statistical approach need to be repeated in each proposal?

ProjectID: 20080

Evaluate a Modified Feeding Strategy to Reduce Residualism and Promote Smol

Idaho Fishery Resource Office, U.S. Fish and Wildlife Service

Short Description: Reduce residualism and improve smoltification of steelhead using a modified feeding strategy designed to stimulate smoltification, reduce residualism, increase emigration success, reduce interactions with wild fish, and increase adult returns.

ISRP Recommendation - DNF / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-DNF

Sponsor Funding Request = \$168,050 / CBFWA Funding Recommendation = \$146,800

Recommendation:

Do not fund, technically inadequate. More attention needs to be paid to experimental design.

Comments:

This project is directed to the problem that some steelhead released at Dworshak Hatchery do not emigrate. The hypothesis is that manipulation of steelhead feeding

levels during the winter prior to release will result in a greater proportion of the population leaving the system after release. The authors propose to test the prospect that their treatment groups (which are not identified) will experience differing capabilities for adaptation to saltwater. If that is a valid possibility, it should be tested before undertaking the expensive marking and release experiments included as part of the proposal.

The authors can expect a troublesome management problem associated with changing densities in the rearing ponds. They neglect to describe how they will prevent rearing density from becoming an uncontrolled variable. Preliminary experiments should be conducted at the hatchery and laboratory to address the saltwater adaptation problem, and to explore methods for dealing with density and other variables such as pond location. If and when a modified proposal is prepared, it should include data from preliminary trials (some suggested above).

The proposal is inadequate in that it seeks a dietary, hence physiological, solution to a problem that may be primarily behavioral, and ignoring behavioral matters that would confound the experiments. In their research design, the proponents appear to ignore important material cited in their own narrative in Section 8a (Tech. Sci Background), which brings up behavioral aspects. For example (p. 10, lines 6-10): “Hatchery practices can have a significant influence on the parr-smolt transformation process [refs], and need to be developed based on knowledge of how they directly influence the growth, physiology, and behavior of steelhead leading up to and during smoltification.” They go on to state (p. 10, lines 24-27) that “a review of the literature indicates that high variability in size (length) within a juvenile steelhead population is in part a product of social interactions, and the establishment of dominant and subordinate individuals, where dominants grow faster than subordinates. . .” But the proposal addresses merely the overall growth rate of the population, not its variability, and therefore misses the point. Moreover, the sponsors do not acknowledge in their design that growth, physiology, and behavior are not independent of each other. The proposal is written as if growth rate could be manipulated in isolation.

The authors ignore the traditional hatchery procedure of occasional “grading” (sorting by size with simple, sieving jigs) to separate socially dominant, faster growing fish from the “runts,” which results in faster growth of the latter. They fail to consider that this alone might solve the problem, obviating elaborate and possibly much more costly dietary manipulations in hatchery practice and physiological measurements in the proposed research. Even more importantly, they fail to consider that manipulating diet without grading the fish may be futile.

The proponents are “promoting the idea,” as they put it, “that the real need is to. . .” (page 10, lines 14-15). This suggests a preconception, which may rule out consideration of the full spectrum of reasonable possibilities. This runs counter to the unbiased inquiry that is necessary in experiments.

The Methods section neglects to describe the need for buying a digital camera or laptop computer and software, nor is the need explained in the narrative on budget. The travel

allotment of \$7,500 is not justified. For all these reasons, the reviewers judge that the proposal is not based on sound science.

ProjectID: 8909600

Monitor and evaluate genetic characteristics of supplemented salmon and steelhead

National Marine Fisheries Service, Conservation Biology Division

Short Description: Monitor changes over time in genetic characteristics of hatchery, natural (supplemented), and wild (un-supplemented) populations of Snake River spring/summer chinook salmon and steelhead. Estimate reproductive success. Use results to help evaluate effect

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$249,300 / CBFWA Funding Recommendation = \$175,000

Recommendation:

Fund. OK for a multi-year review cycle, do not need to review annually, however the ISRP would like to see it coordinated with the other supplementation studies and projects and would like to see the results of this study implemented in the supplementation projects.

Comments:

This is an excellent, well-written proposal. Summary statements of findings were provided showing significant progress. Several papers based on the results have been published in peer review journals, which indicate acceptance of the work by the scientific community. The study continues to make an important contribution to the understanding of the genetic structure of Columbia River anadromous salmonids.

Nevertheless, proposed uses of the data regarding genetic structure obtained in this study and in Project 900550 are not clear. Important questions remain concerning methods and strategies for protecting gene diversity in the Snake River basin, as well as identifying the amounts of diversity that need protection to ensure the future of these species. Use of resources to continually update databases with more refined information may not provide useful input for such questions, and may only provide an excuse for failing to make long overdue decisions to protect these resources.

Benefits: The project could be the basis of a conservation program, based on the present knowledge, to identify and protect gene diversity in the basin's fishes. Data from the present study can then be used to provide a continuing "test" of the program to identify deficiencies. Short of that, the project is not likely to provide any significant benefit for the fish.

ProjectID: 9005500

Steelhead Supplementation Studies in Idaho Rivers

Idaho Department of Fish and Game

Short Description: Evaluate the feasibility of using artificial production to increase natural steelhead populations and to collect life history, genetic, and disease data from wild steelhead populations in Idaho.

ISRP Recommendation - Fund in Part / CBFWA Tier 1 / ISRP Comparison with CBFWA: Partially agree-fund in part

Sponsor Funding Request = \$560,744 / CBFWA Funding Recommendation = \$407,744

Recommendation:

Fund in part, but do not fund the new tasks related to the genetics subcontract due to lack of adequate review information. The proposal needs a better description of who the genetics subcontractor is and what they are going to do. The reviewers are not provided adequate description of the methods the subcontractor will use, let alone the subcontractor's qualifications. The proposal should be included in the programmatic review of supplementation.

Comments:

The proposal describes plans to develop a genetic database for steelhead in Idaho. If approved, the study should be closely coordinated and developed with Project 8909600. Findings reported under 8909600 include statements regarding progress in steelhead genetics, but it is not clear how these findings were incorporated into the present study plan. How does this work fit in with the genetic work done by Waples et al.?

The project is difficult to evaluate and confusingly written. There are too many objectives, and the objectives have flip-flopped during the project's history—apparently without having any of the “experiments” brought to completion. Each component of the project should be submitted as a separate proposal and reviewed on its own merits. The project history contains detail on activities but less information on results and their interpretation. The information is not put into a context of application. The objectives and tasks are not specific to FY2000. For example, one objective is to assess the performance of hatchery and wild brood sources to reestablish steelhead in streams. The results of such a study will no doubt depend to some degree on the source of the hatchery fish. The proposal, however, does not test supplementation because the fish being used are hatchery stock, not wild stock. It was planned to use wild stock, but wild populations were too small to permit it. If the proposed project cannot test the real objective of supplementation, the development of a more abundant population of naturally spawning wild fish, why do it? To some extent, the project seems to be planned as a testing of traditional hatchery practice against supplementation, but not a test of supplementation against unassisted wild reproduction as should be the case. Is this “reintroduction?”

The proposal is not clear about the end point. There is no termination date for the work. The proposal includes a statement that it will continue until steelhead are restored. Since it was initially and subsequently approved with such a statement included, there seems to be little room for any new evaluation.

The project should be subjected to a rigorous review to assess progress to date, to evaluate, and to determine whether survival rates are sufficient to provide the statistical power required to meet project goals.

ProjectID: 9107300

Idaho Natural Production Monitoring And Evaluation

Idaho Department of Fish and Game

Short Description: Improves adult-to-smolt and smolt-to-adult survival of chinook salmon and steelhead. Identifies limiting factors and methods to improve survival. Provides monitoring to determine the effectiveness of recovery actions and population status.

ISRP Recommendation - Delay Funding / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-until corrected

Sponsor Funding Request = \$767,512 / CBFWA Funding Recommendation = \$767,512

Recommendation:

Delay funding until the project is subjected to comprehensive independent peer review. There is a clear programmatic need for monitoring and evaluation of supplementation efforts, but this project provides little evidence that the job is getting done.

Comments:

This is an ongoing study that is too huge, amorphous, and multi-faceted to inspire confidence in the reviewers in the project's future success or the competence of the project personnel. It is really a multi-project program. Separate proposals for each major component are needed to make the objectives clear and to enable evaluation. As it stands, the proposal is confused and has problems with logic of presentation. There is a lot of detailed background in the literature related to each of the proposal's objectives. The proposal should put these into context and interpret their findings.

This project builds quantified targets into its objectives, but the tasks are not directly aligned with achieving these objectives for objectives 1 and 2. For example, in Objective 2, tasks are a series of "continue to" activities. Have the conduct of these activities in the past led to increased survival? If not, what is the justification of continuing the same activities? There is not much explanation for a large budget.

The proposal mixes statements of method into the technical background and objectives. For example, the "products" of objectives are often stated as procedures. Therefore, the project's objectives have to some extent become the performance of methods rather than the attainment of biological results. Success of the project depends on several assumptions, some of which could be tested. Perhaps the study would be better served if its scope were reduced and some to these assumptions tested.

Other problems with the proposal include: (1) Past activities described for the "project" are not consistent with the project title. (2) The project history states the types (subject categories) of past findings but not what was found, i.e., no real information. (3) In the methods section, the discussion of aging seems problematic.

There is some discussion of the NMFS's specification of 12 metapopulations. If the monitoring is to assess the relative condition of each metapopulation, there should be some analysis of the number of sub-populations needed to represent the metapopulation. Further, given the high variability in data from monitoring salmonid populations there

should be some analysis (statistical) demonstrating that the sites chosen will provide the data necessary to make management decisions.

ProjectID: 20079

Assessing Adult Steelhead Escapement & Genetics In The South Fork Salmon

Nez Perce Tribal Fisheries/Watershed Program

Short Description: This project would document the current status, genetic profile, and life history characteristics of juvenile and adult steelhead in the South Fork Salmon River drainage. Results would be compared to the populations status as described by Thurow (1987).

ISRP Recommendation - DNF / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-DNF

Sponsor Funding Request = \$278,481 / CBFWA Funding Recommendation = \$175,000

Recommendation:

Do not fund, rationale not adequately justified, technically inadequate. Previous studies that were to form the basis of this work were not summarized or reviewed

Comments:

This is a new proposal to determine the status and genetic structure of the South Fork Salmon River steelhead. The proposal is flawed by the lack of a background literature review (Objective 1) was not conducted prior to development of the proposal. The proposal objectives change throughout. No summary of past data (i.e., the Thurow study) is presented. The genetic analysis is superfluous and is unlikely to produce samples that are representative of all parts of the population due in part to sampling difficulties because of water conditions during spring runoff. While it may be worthwhile to compare genetic profiles of the South Fork steelhead today to those of 1985, what specific assumption of hypothesis is the genetic analysis testing? Similarly, while it might be worthwhile to obtain a genetic profile of the S Fk South Fork steelhead using various state-of-the-art DNA technologies, as well as to archive DNA samples for future access as new technologies develop, this effort is probably only worthwhile only if it is part of a statewide or region-wide program to assess patterns of genetic diversity in Snake Basin steelhead in order to address specific questions related to conservation management or metapopulation structure. The proposal should be refocused to test specific hypotheses about the past sample, possible impacts of introgression with specific hatchery strains (if applicable), or it should be a necessary part of a larger genetic inventory of steelhead populations in Idaho pointed at identifying logical conservation units. Has no life history work been conducted on the South Fork Salmon steelhead? If not, this should be documented in the proposal as justification for the proposed work.

The lack of specific hypotheses and clear objectives lead the reviewers to judge that the proposal is not based on sound science. The proposal, background and objectives are flawed and should be better developed. The overall objective of monitoring status of the steelhead population in the South Fork of the Salmon is worthwhile and consistent with objectives in the FWP. If the proponents choose to resubmit this proposal in FY 2001, the literature background work should be completed and integrated into a more sharply

focused proposal that develops specific testable hypotheses based on the 1980s background data.

ProjectID: 9901800

Characterize and quantify residual steelhead in the Clearwater River, Idaho

U.S. Fish and Wildlife Service - Idaho Fishery Resource Office

Short Description: Describe unsuccessful hatchery smolts released into the Clearwater basin. Assess potential negative interactions with wild steelhead produced in the Clearwater basin. Recommend modifications to hatchery practices to produce more effective smolts and reduce

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA:

Agree-fund

Sponsor Funding Request = \$84,365 / CBFWA Funding Recommendation = \$84,365

Recommendation:

Fund

Comments:

The project will yield data largely applicable only to Dworshak National Fish Hatchery and its operating conditions. The proposal is well organized, thorough, well supported by references, and clearly written. There appear to be opportunities to coordinate more closely with a related Dworshak project (smolt feeding and growth related to residualism) on steelhead smolts being proposed (#20080). The experimental design and statistical methods proposed seem appropriate. The budget seems reasonable. Reviewers note that only \$500 is requested for travel, which includes “one or two professional meetings” at which findings may be reported.

Suggestions for improvement: The text includes a statement that NMFS has concluded steelhead of excessively small or large size will residualize and cause a predation problem for listed species. The basis for this conclusion needs to be presented here. If it is known that large or small steelhead will residualize, and it is known that they prey on listed species, the remaining questions concern the magnitude of the problem and not another demonstration that the problem exists. Questions concerning the numbers eaten by residualized steelhead relative to the total population, and how to prevent release of predatory sized steelhead from Dworshak are in order.

This proposal should perhaps be postponed for a year so the proposers can consider (literature study, consultation with experts) the effects of social and other behavioral status of the experimental animals and, if necessary, revise the design to include stratification for not just body size, but also the social status of individuals in the group within which they were reared. In other words, at any given release date and place, body size per se may not be the determinant of a juvenile steelhead’s tendency to residualize, but variation in size within the rearing group and the places of individuals in the social hierarchy may have even greater influence. The present design of the experiment seems tidy, but it may not go far enough into (or take sufficient cognizance of) the true mechanisms involved in residualization. If the experiment is too simple, it may be useless.

Lower Snake Captive Broodstock Proposals

ProjectID: 9606700

Manchester Spring Chinook Broodstock Project

National Marine Fisheries Service

Short Description: Rear Snake River spring/summer chinook salmon captive broodstocks from Idaho's Salmon River sub-basin and Oregon's Grande Ronde River sub-basin. Provide pre-spawning adults, eyed eggs, and juveniles to aid recovery of these ESA-listed stocks.

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$500,000 / CBFWA Funding Recommendation = \$450,000

Recommendation:

Fund (Look at other Manchester Proposals, 9305600, programmatic review of captive broodstock)

Comments:

This project is designed to develop and maintain captive broodstocks of chinook salmon in saltwater at Manchester, WA. The proposal is thorough with respect to hatchery procedures and describes the scientific and technical background of the problem, including a discussion of the potential risks and benefits of captive broodstock techniques. It clearly relates to a regional need and has strong connection to other projects. Some questions raised by reviewers include, in respect of the section on testable hypotheses: how do you either reject or fail to reject "sufficient"? And elsewhere: it's clear that monitoring is part of the project, but are all opportunities to evaluate the techniques used being pursued? Is this project correctly classified as research?

Propagating captive brood stock as a protection measure under ESA can not be viewed as a long-term strategy. Many problems are inherent in such propagation; a program that is not ultimately consistent with the needs of endangered species. The authors of this proposal seem to be aware of these problems and have included a discussion of several in their proposal.

ProjectID: 9703800

Preserve Listed Salmonid Stocks Gametes

Nez Perce Tribal Fisheries/Watershed Program

Short Description: Establish a gene bank to preserve male gametes from listed steelhead and chinook salmon conservation units that are at low levels of abundance and at high risk of extirpation.

ISRP Recommendation - Fund in Part / CBFWA Tier 1 / ISRP Comparison with CBFWA: Partially agree-fund in part

Sponsor Funding Request = \$185,122 / CBFWA Funding Recommendation = \$185,122

Recommendation:

Fund in part. Do not fund the portion to cryopreserve female genetic material, as this part of the proposal is too uncertain and experimental. While the objective appears

worthwhile, other funding sources such as USDA or NSF may be more appropriate to support basic research and technology development.

Comments:

This project describes work that seems important to at-risk stocks. Systematic sampling of gametes for cryopreservation along with detailed documentation would seem to be at a premium. The project should develop a careful sampling protocol that includes an examination of the implications of using fish from a hatchery environment. The objective of this project is to provide an additional safeguard against extinction. The strategy should be to gain representative samples of salmonid gene diversity present in the basin. Sampling should account for the fact that salmonids probably occur in metapopulations (relatively large populations comprised of sub-populations). The proposal does little to convince a reader that sampling needs have been considered in detail and within the context of the structure of these populations.

This project and the captive brood project should be part of the same program, or at least closely managed as parts of a single program. The captive brood program cannot possibly protect the genetic diversity present in the Columbia Basin, nor can it protect the structure even of the populations taken under culture for extended periods. The cryopreservation project should obtain samples that represent the populations under the captive brood program, but its primary thrust should be to obtain samples to represent all sub-populations of the basin's metapopulations. Small sub-populations are at greatest risk in the basin and they are likely a major source of gene diversity.

An argument is included in the proposal to justify determination of each fish's genotype. This level of detail is not necessary. The research team only needs to ensure that the samples collected adequately represent the gene pool of what remains of a population in their samples. This is a statistical problem; genotypes are not necessary. They propose to maintain a constant monitor on each stream to enumerate redds and establish spawning times. One strategy is to identify "spawned out males" to obtain their samples. There probably is no such thing as a "spawned out male." It may be more appropriate to set up monitoring stations downstream from spawning areas and capture males that drift through the area via nets or capture fish at existing weirs or other diversions. The genetic manipulation (selected matings) described in the proposal should be abandoned. Mating strategies should provide as close to random mating as possible.

Work to preserve embryos should be proposed as a separate project by the principal investigator actually doing the work. The proposal, which might be more appropriately directed to NIH or NSF than to BPA, should carefully outline past trials and summarize present knowledge. It should provide details of experimental methods. Such work has been going on for many years in a variety of labs without success, so the funding agency should be prepared to either fund specific experiments with completion dates or be prepared to continue the funding indefinitely.

Careful attention should be given to the budget requests. Costs in the proposal seem high and include as direct costs, some that are appropriately included as indirect costs.

Clearwater

ProjectID: 20534

Multi-Year Clearwater Anadromous Fish Plan

Columbia Basin Fish & Wildlife Authority

Short Description:

**ISRP Recommendation - na / CBFWA Tier na / ISRP Comparison with CBFWA:
Umbrella Proposal**

Sponsor Funding Request = \$ / CBFWA Funding Recommendation =

Recommendation:

NA - Umbrella Proposal

Comments:

The umbrella proposal is deficient; various proposal sections were skipped, and in the sections that were covered, much of the logic of what has been said is questionable. For instance, there is no summary, no abstract, and no technical or scientific background. Although the program's title is "Multi-Year Clearwater Anadromous Fish Plan", it in fact deals largely with non-anadromous fish. The only mention of artificial propagation in the proposal's statement of objectives is Objective 5: "supplement where needed with genetically-appropriate salmon and steelhead in the subbasin using stock specific escapement criteria capable of maintaining stock productivity, survival and genetic diversity." This statement is inconsistent with many of the projects under the umbrella, which deal with substitution stocking of resident species and stocking of anadromous species "to augment the run for harvest opportunity" (p. 8, last paragraph, lines 4-5). The umbrella statement describes a group of projects that appear to be lacking in coordination.

ProjectID: 8335000

Nez Perce Tribal Hatchery

Nez Perce Tribe

Short Description: Implement construction of Nez Perce Tribal Hatchery supplementation program to assist in the recovery and restoration of non-listed spring chinook and coho salmon and ESA listed Snake River fall chinook in the Clearwater subbasin.

ISRP Recommendation - DNF / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-DNF

Sponsor Funding Request = \$20,188,949 / CBFWA Funding Recommendation = \$14,590,000

Recommendation:

Do not fund. The proposal is not scientifically sound. The inadequacies in the FY99 proposal remain. While the proposal contains language to the effect that the ISRP endorsed the project, in point of fact the ISRP was critical of the proposal in FY99 (see ISRP 98-1 Appendix A, page 75).

Comments:

This proposal claims to have the blessing of the ISRP (which is not true) and others, but many of the “innovative” approaches described have not been proven to yield greater survival of released fish. Furthermore, the technical-scientific background section and the rest of the proposal depend on references that are almost exclusively from gray literature rather than from the peer-reviewed open literature.

Project advocates believe they will achieve greater efficiency and effectiveness than typical hatchery operations; however, typical hatchery programs have had many generations of experience to alter their programs for efficiency and are arguably highly efficient. Only a rigorous monitoring and evaluation program will determine whether the proposers' hopes can be realized.

The proposal makes various unsubstantiated claims, such as on p. 19, lines 8-10,: “Although returns [of potential brood fish] are predicted to be extremely low for these years [1999 and 2000], the improved juvenile survival and beneficial progeny: parent return ratio offered by hatcheries justify efforts to survive [sic] the broodyear [sic] through artificial propagation.” If this were so, wouldn't there be large numbers of salmon from the many, many existing hatcheries? At this point, the proposers ignore the problem of inferior post-release fitness of the hatchery-reared fish, though they acknowledge it elsewhere. Another unsubstantiated statement (beginning on next-to-last line of p. 23): “NPTH will rear fish at a density that is a third as much [as the 9.6 kg/m³ recommended by NMFS] and should impart economic efficiency to the hatchery. . .”, yet the proposers do not define how the benefit will occur.

The proposers also claim that by keeping within natural “carrying capacities” they will not impact populations of wild fish. Carrying capacity is difficult to measure and altering density at any natural population level through the addition of propagated fish will no doubt influence the population in nature. They also claim they will mimic natural

conditions of temperature etc., yet stream temperatures are not the same from year to year, and from site to site.

Other specific comments include: P. 22, line 5—“Phase III (11-20 years) will create opportunities for harvest. . .” Is this a departure from the hatchery’s “supplementation” objective? If so, is it justified? Bottom of p. 25—A 100% FTE administrative assistant/secretary for a fish hatchery seems out of line. Top of p. 27 and budget table, p. 8—Travel cost of \$36,407 seems excessive for building and beginning to operate a fish hatchery. Planning costs of \$8.87M to date certainly seem excessive.

ProjectID: 8335003

Nez Perce Tribal Hatchery Monitoring And Evaluation

Nez Perce Tribal Fisheries/Watershed Program

Short Description:

ISRP Recommendation - DNF / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-DNF

Sponsor Funding Request = \$992,847 / CBFWA Funding Recommendation = \$992,847

Recommendation:

Do not fund. The proposal is not scientifically sound.

Comments:

This is a proposal for monitoring and evaluation of a proposed hatchery. If this hatchery is to be built, its results should be monitored and evaluated. This project is large; its magnitude may not be recognized by the proposers. The numerous objectives seem well selected, except for parts of the first objective, which do not appear to be appropriate, engineering design and construction presumably should fall under proposal 8335000. The approaches and methodological strategies are generally well described, but some of field techniques are unclear. For example, it is not made clear in all cases what kinds of gear will be used to sample fish, what the sampling design will be or what the statistical methods will be.

From a programmatic standpoint, the panel was concerned about continued funding of such artificial production activities like this one without evaluating its effects on wild stocks. It would be dangerous for the Council to say that the region can more aggressively pursue artificial propagation and then manage diversity back into the populations. The region should be doing all it can to preserve natural production.

The Peer Review Group had specific comments on some proposal objectives: Objective 2 - The monitoring of genetic structure seems to have only one basis. That is, that if there is a loss of genetic variation then the genetic information will be available to make crosses required to re-constitute the desired variation. That is not the appropriate view for managing a program that is directed to increasing abundance while protecting natural variability. Methods for this objective include monitoring of stocks both from in-basin, and out-of-basin sources. Out-of-basin sources should not be permitted in programs directed to protection of gene diversity and natural production. Again, the genetic monitoring will not provide any insight into the “ ... effects of introducing hatchery-

reared chinook and coho salmon.” The “determinations” and answers outlined cannot be obtained by the proposed methods.

Objective 3 - This is a plan based on a naive foundation that managers can develop what is needed to maintain diversity in these runs. Why not think in terms of using brood stock from the different locations, or brood stock that returns to the different locations?

Objective 4 - Although left unstated, monitoring in both treatment and control streams or the impact of improved ocean conditions must be incorporated, or other out-of- basin improvements will not be included in the accounting.

Objective 5 -- Calculations of parr-to-adult survival rates seem not to take adult harvest into account.

Objective 6 -- How will recruits (at what life stage?) per spawner be measured?

Objective 7 -- The description of methods is too vague. What “intraspecific interactions” will really be measured? “Direct interaction of hatchery and wild salmon” is mentioned, but there is no explanation of how they’re going to observe these behaviors and what direct behavioral parameters will be measured. Will there be treatment and control streams? Treatment and control stream sections? A genuine plan for this objective does not seem to have been made.

Objective 8 - Monitoring for disease seems to be the “thing to do.” However, it never makes a difference until an epizootic occurs and then you don’t need monitoring to see it. This kind of work should be directed to preventing rearing conditions that result in epizootics. Furthermore, the methods are not spelled out. The statement that “sampling, diagnostic, and statistical analyses will conform with NWFH Survey protocols and procedures” doesn’t constitute a discussion of methods.

Objective 9 - Don’t we already know that predator abundance will follow prey abundance? Again, it seems that the appropriate question concerns the significance of this predation, and what can be done about it short of eliminating (probably impossible) other species? Also, while sub-objectives are stated, there is no discussion of methods.

Objective 11- Methods for estimating stream productivity for salmonids are not satisfactory.

ProjectID: 9501300

Nez Perce Tribe Resident Fish Substitution Program

Nez Perce Tribe

Short Description: Increase fish harvest opportunities to mitigate partially for anadromous and resident fish losses incurred as a result of the construction and operation of Dworshak Dam on the North Fork Clearwater River.

ISRP Recommendation - DNF / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-DNF

Sponsor Funding Request = \$850,000 / CBFWA Funding Recommendation = \$750,000

Recommendation:

Do not fund. The proposal is technically inadequate and scientifically weak

Comments:

This proposal is in need of clearly defined objectives and substantial editorial revision to avoid (or to succinctly define) such references as “a multi-species ecosystem approach,” “water quality and habitat problems” and “environmental conditions that limit fishery success.” To what approaches, problems and conditions do the proponents refer? Are tribal members capturing a significant number of the fish stocked and/or is all the harvest designated for tribal members? If not, are there fees, creel limits, etc. for non-tribal members? How is harvest monitored? What strains of fish are used in the pond? Are five full-time people truly required for the project? If so, experiments with species combinations and densities should be possible. Future proposals should offer more data on past accomplishments and performance of various ponds or fisheries, particularly with the manpower involved.

A serious concern among reviewers was a statement indicating that a “multi-species ecosystem approach” involving trout, bass, and sturgeon is to be used. What species of trout, bass, or sturgeon are considered? The approach on its face seems infeasible because trout and bass are not compatible. This leads to a lack of confidence in the proposal and concern that the work is not based on sound science principles. The proposal states that “both the Deer Creek and Cold Springs sites were considered suitable,” but neglects to say in what respects and for what? Material in the proposal is needlessly repetitive; for example, much of the project history is repeated in the methods section

ProjectID: 9608600

Clearwater Subbasin Focus Watershed Program - ISCC

Idaho Soil Conservation Commission

Short Description: Coordinate multiple jurisdictions, agencies and private interests to protect, restore, and enhance anadromous and resident fish, and wildlife in the Clearwater River subbasin.

ISRP Recommendation - Delay Funding / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-until corrected

Sponsor Funding Request = \$89,450 / CBFWA Funding Recommendation = \$89,450

Recommendation:

Delay funding until they demonstrate relation to fish and wildlife and include a clear statement of overall objectives of this project, the relationship of project objectives to overall basin restoration objectives, as well as timelines, and a rationale (prioritization via a watershed assessment) indicating why specific elements are being undertaken, and in what order. A comprehensive review, via a visiting committee, of all habitat restoration projects within the Clearwater basin is needed.

Comments:

This is a proposal for continued support of habitat restoration efforts in the western portion of the Clearwater basin. This project and 9706000 are closely related efforts to coordinate restoration of steelhead habitat in situations where multiple land ownership exists. Coordination projects can have positive results, but there is a danger of the work becoming fragmented and including activities not directly related to restoration goals. Success depends, in large part, on the willingness of leaders to “take the lead,” in coordinating personnel. For that reason, such proposals should include an outline of the specific types of actions guiding efforts in each basin. As it stands, neither this proposal nor its companion offers a convincing argument that anything other than “coordination” is to result from the work. The project needs a focus on increased flows that more closely approximate natural seasonal hydrographs. Many problems with salmon streams can be resolved with restoration of adequate discharge.

Little information is provided in the proposal as to how the funds will be used – the methods section consists primarily of a “toolkit” of restoration approaches. Where, why, when are difficult to determine. Furthermore, the project history section is thin. No real results to date are listed

ProjectID: 9706000

Clearwater Subbasin Focus Watershed Program - NPT

Nez Perce Tribal Fisheries/Watershed Program

Short Description: Manage and Implement a comprehensive system to coordinate multiple jurisdictions, agencies, and private landowners within the 1855 Nez Perce ceded territory area. These efforts will protect, restore, and enhance anadromous fisheries habitat.

ISRP Recommendation - Delay Funding / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-until corrected

Sponsor Funding Request = \$98,737 / CBFWA Funding Recommendation = \$98,737

Recommendation:

Delay funding until they demonstrate relation to fish and wildlife and include a clear statement of overall objectives of this project, the relationship of project objectives to overall basin restoration objectives, as well as timelines, and a rationale (prioritization via a watershed assessment) indicating why specific elements are being undertaken, and in what order. A comprehensive review, via a visiting committee, of all habitat restoration projects within the Clearwater basin is needed.

Comments:

This project is similar to companion Project 9608600, except that the focus is on the eastern portion of the basin. Many of the comments made on 9608600 are relevant to this project as well. Specifically, a) there is a danger of the work becoming fragmented and including activities not directly related to restoration goals, unless leadership is asserted

by the coordinating personnel. To that end, an outline of the specific types of actions is required, as written this proposal lacks a convincing argument that anything other than “coordination” will result; b) the project needs a more pronounced focus on increased flows that are closer to natural seasonal hydrographs, and c) the proposal offers only a vague discussion of methods. Unlike proposal 9608600, which at least provided a “toolkit” of possible approaches, no attempt is made to indicate what will be done. A typical example under Section e (project objectives) is the statement (for objective 2) that the product will be “watershed assessments ...”. Does this mean a report, or are on-the-ground improvements to be made? The panel was particularly concerned about the apparent lack of a fisheries focus. For instance, the proposal states “The critical assumption upon which the program was initiated was the anticipation that all groups, governments, industries, and individuals with resource interests in the Clearwater basin would endorse a watershed level coordinated effort to address fisheries concerns” . Yet there seems to be no fishery biologist involved in the project. It appears that this project may be a physical-social exercise having no direct relation to the fish or in which the genuine fishery aspects will be easily lost sight of. There is no discussion of the biological effectiveness of the project. The effort needs biological oversight and biological auditing. Finally, the proposers appear to have ignored Council’s guidance that watershed assessments are to be the basis for restoration efforts, and are to be completed before embarking on specific restoration project elements. No indication is given of how the project relates to a watershed assessment, or if one even exists

ProjectID: 9901400

Restore Anadromous Fish Habitat In The Little Canyon Creek Subwatershed

Clearwater Focus Watershed Program - Idaho Soil Conservation Commission
Short Description: Restore steelhead trout habitat in Little Canyon Creek subwatershed that are affected by upland agricultural land uses by implementing agricultural best management practices and coordinating ISCC, NRCS, and BPA funding sources.

ISRP Recommendation - Delay Funding / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-until corrected

Sponsor Funding Request = \$217,855 / CBFWA Funding Recommendation = \$196,855

Recommendation:

Delay funding until they demonstrate relation to fish and wildlife and include a clear statement of overall objectives of this project, the relationship of project objectives to overall basin restoration objectives, as well as timelines, and a rationale (prioritization via a watershed assessment) indicating why specific elements are being undertaken, and in what order. A comprehensive review, via a visiting committee, of all habitat restoration projects within the Clearwater basin is needed.

Comments:

This is proposal for continuation (second year) of habitat improvements in the Little Canyon Creek watershed, a tributary of the Clearwater. The focus of the project is on water quality improvements to mitigate agricultural nonpoint source pollution. The proposers argue that most water quality problems are traceable to agricultural

development on previously timbered, and highly erodable, soils. The proposers argue for an overall approach that focuses on these upland source areas, and outline a set of procedures for implementing a program of BMPs directed at private landowners. Some of the detailed statements of methods are made overly complicated by inclusion of background information (problem descriptions) which should have been in the technical-scientific background section. Task b of the monitoring scheme is too vague, especially since it is supposed to encompass the most important evaluation criterion of the project: an analysis of “riparian functions” and of fish population responses. “Fish surveys” is not an adequate description of method. The monitoring of a landscape-healing project such as this one should include broader measurements of biological integrity of the stream ecosystem than just fish population levels. For all its laudable aspects, the proposal makes the project appear (and perhaps the project really is) just a rote application of supposed BMPs without knowing or understanding their effect. How will the proposers know if the specific measures being undertaken are really “best” for the riparian zone, for the stream, and for the stream’s organisms, including the fish? As in Proposal 9706000, there is no biologist on the project staff, so the biological effectiveness can not be accounted for. The lack of biologists’ input on and participation in this project is a serious shortcoming. This proposal does not appear to be tied to a previous watershed assessment effort, so that the proposed work, while perhaps meritorious, cannot be evaluated in the broader context

ProjectID: 9901500

Restore Anadromous Fish Habitat In The Nichols Canyon Subwatershed

Clearwater Focus Watershed Program - Idaho Soil Conservation Commission

Short Description: Restore steelhead trout habitat in the Nichols Canyon subwatershed affected by upland agricultural land uses by implementing agricultural best management practices and coordinating ISCC, NRCS, and BPA funding sources.

ISRP Recommendation - Delay Funding / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-until corrected

Sponsor Funding Request = \$211,237 / CBFWA Funding Recommendation = \$186,237

Recommendation:

Delay funding until they demonstrate relation to fish and wildlife and include a clear statement of overall objectives of this project, the relationship of project objectives to overall basin restoration objectives, as well as timelines, and a rationale (prioritization via a watershed assessment) indicating why specific elements are being undertaken, and in what order. A comprehensive review, via a visiting committee, of all habitat restoration projects within the Clearwater basin is needed.

Comments:

This proposal is very similar to 9901400, by the same proposer. The focus is on the Nichols Canyon watershed, but the issues are indicated to be essentially identical to those identified for Little Canyon Creek – in fact, most sections of the two proposals are identical. Reviewers doubt that the issues in the two basins are the same. Comments made on 9901400 pertain – there does not appear to be any basis for the project in a prior watershed assessment, and an overall review of all of the habitat projects in the

Clearwater needs to be undertaken before this assessment goes forward. This proposal should show a definite funding horizon (presumably not more than five years) and a set of milestones against which progress can be evaluated periodically

ProjectID: 20557

Evaluate Bull Trout Population Status/N.F. Clearwater R. - Npt & Idfg

Nez Perce Tribe / Idaho Department of Fish and Game -- UMBRELLA

Short Description: Evaluate distribution, habitat use, and movement patterns of bull trout (*Salvelinus confluentus*) in the N.F. Clearwater River drainage, including Dworshak Reservoir.

ISRP Recommendation - na / CBFWA Tier 3 / ISRP Comparison with CBFWA: Umbrella Proposal

Sponsor Funding Request = \$ / CBFWA Funding Recommendation =

Recommendation:

NA - Umbrella Proposal

Comments:

This is an umbrella project description for Bull Trout recovery efforts in the North Fork Clearwater River by the Nez Perce Tribe and Idaho Department of Fish and Game. Three broad objectives are outlined: 1) Identify sub-populations and determine their status in North Fork Clearwater; 2) Identify how bull trout use Dworshak, and how they are impacted by operations; and 3) Develop and implement strategies to protect bull trout. Generally, the proposal makes a credible attempt to indicate how the various component projects interact, and are formulated to address the overall goals and objectives. One question that affects all projects under this umbrella is just how a sub-population is defined for purposes of the project. If sub-populations are defined as any clearly identified spawning aggregation, the data may already be available to meet this objective. If numbers of fish in each aggregation are estimated each year, at least a preliminary (and perhaps sufficient) risk assessment may be possible. A significant amount of habitat classification is identified as needed information in the proposals, but it is not clear how that data relates to one of the above objectives

ProjectID: 20147

Evaluate Bull Trout Population Status/N.F. Clearwater R. - NPT

Nez Perce Tribe

Short Description: Evaluate distribution, habitat use, and movement patterns of bull trout (*Salvelinus confluentus*) in the N.F. Clearwater River drainage, including Dworshak Reservoir.

ISRP Recommendation - DNF / CBFWA Tier 2 / ISRP Comparison with CBFWA: Disagree-DNF

Sponsor Funding Request = \$188,100 / CBFWA Funding Recommendation =

Recommendation:

Do not fund.

Comments:

This is one of two proposals for evaluation of Bull Trout populations in the North Fork Clearwater. This proposal, by the Nez Perce Tribe, appears to be primarily for work in the tributary. Studies in Dworshak Reservoir would be conducted by the Idaho Department of Fish and Game under proposal 20148. The umbrella proposal encompassing both projects (20557) reasonably articulates the problem (primarily a lack of background information). The premise is contradicted with claims, first, of an information deficit with respect to “distribution, abundance, and population viability of

native fish populations (specifically Bull Trout) in Dworshak Reservoir and its upstream tributaries” followed by “A substantial amount of data exists for the North Fork Clearwater basin from fisheries activities conducted in the reservoir and upper tributaries by NPT, USFS, and IDFG. We will assemble these data to determine streams where bull trout have been observed, and identify population sizes and densities.”

Assessment of these data should have been undertaken before or while developing the proposal. The question of how much information exists clouds the entire proposal. Specifically, information may already exist to locate spawning areas and to provide estimates of the number of spawners. Analysis of existing information may provide some estimates of the number of migratory fish at different locations and when they are there. Preliminary analysis of such data would provide the basis to estimate how many fish can be expected to be available for tagging, and what level of effort must be expended (and, whether that is realistic) to gain the recaptures necessary to provide reliable answers to questions. Without such information, the proposal is technically inadequate.

Failure to conduct a preliminary analysis of existing data left reviewers unconvinced that the approach would be successful. For instance, the approach involves Redd counts and PIT tagging of juvenile trout at selected sites (50 meters every 400 m) along “all known Bull Trout streams”. There are statistical issues associated with the design (why 50 m every 400?), yet none of these are discussed. Also, how does one know (or estimate) the magnitude of the undercount problem? Surely the snorkeling approach is not going to recover every subject in the sample zone, but there must be some way of estimating a recovery efficiency. The methods outlined under Objective 1 include extensive habitat work that has no relevance to the objective. More generally, key aspects of the methods should be better described. Brief mention is made that densities of bull trout populations in streams will be estimated via snorkeling, and that PIT tags will be placed in fish larger than 120mm. The sponsors include no information on the number of tags and observations needed to meet objectives. They offer no information describing methods for tag detection or monitoring methods/sites and include no statement as to the duration of the project. Escalating budgets are shown for every year to 2004, the last year included in the proposal form, but the proposal lacks a clear statement of what would be done in each year of the project, and when it would be completed

ProjectID: 20148

Evaluate Bull Trout Population Status/N.F. Clearwater R - IDFG

Idaho Department of Fish and Game and Nez Perce Tribe--Subproposal

Short Description: Evaluate distribution, habitat use, and movement patterns of bull trout (*Salvelinus confluentus*) in the N.F. Clearwater River drainage, including Dworshak Reservoir.

ISRP Recommendation - DNF / CBFWA Tier 2 / ISRP Comparison with CBFWA: Disagree-DNF

Sponsor Funding Request = \$154,920 / CBFWA Funding Recommendation =
Recommendation:

Do not fund.

Comments:

This is a companion proposal to 20147, for evaluation of Bull Trout populations in the North Fork Clearwater. This proposal, by the Idaho Department of Fish and Game, focuses primarily on Dworshak Reservoir; the companion proposal is for work in the tributaries to Dworshak. Like the companion submittal by the Nez Perce Tribe, this proposal does not reflect an adequate analysis of existing data. Reviewers are left to conclude that the proposal is technically inadequate.

The Methods section is cursory, and does not provide information necessary to determine if the objectives can be met. For example, the proposal states that radio transmitters would be implanted in “50 Bull Trout annually for 5 years” but neglects to describe the statistical implications of this sample size. What issues exist with respect to non-randomness of the sample selection, due to inevitable complications in recruiting the subjects? Part of the proposal is to evaluate the impact of operations at Dworshak on bull trout, but the methods are to monitor conditions (temperature) in the reservoir and attempt to explain the distribution of radio-tagged fish when temperature conditions change. These and other potential effects cannot be evaluated unless operations at Dworshak can be manipulated for the express purpose of answering these questions. Otherwise, any number of other alternative explanations will exist for observations made under uncontrolled operations.

From the standpoint of coordination (with the companion project), more detail needs to be provided on how the joint tasks under Objective 3 will be conducted. Finally, like the companion proposal, no clear statement of project duration is given, nor are milestones presented for individual years; it appears that the proposers intend that the project would go on forever. Absent information an assessment of summarizing past data, and adequate description of methods, this is not a scientifically defensible proposal

ProjectID: 20019

Evaluate Status Of Pacific Lamprey In Clearwater River Drainage, Idaho

Idaho Department of Fish and Game

Short Description: Determine the status and life history of Pacific lamprey in the Clearwater River drainage, Idaho, with emphasis in the South Fork Clearwater drainage.

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA:

Agree-fund

Sponsor Funding Request = \$119,039 / CBFWA Funding Recommendation = \$73,000

Recommendation:

Fund

Comments:

This is a new proposal to collect information about the Pacific lamprey in the Clearwater basin. The proposers argue that very little is known about the life history characteristics of the species, which is nonetheless thought to be in decline. The methods, which are reasonably well detailed, are aimed at evaluation of background information for various life history stages of the animal. The budget appears reasonable, although no time horizon is indicated. This proposal addresses a need for information in a systematic way.

It provides good scientific/technical background and justification, and appears to be well coordinated with other projects. However, given the nature of the proposed work, there is no reason why a project duration of longer than two, or at most three, years is needed. The publication plan appears adequate, although it needs to be made clear that masters theses do not constitute “publication”, and are not an alternative to publication in the peer-reviewed open literature. The panel recommends that the proposers evaluate information on historical abundance that may come from oral histories, journals, and agency reports; they may wish to contact Ted Bjornn at the University of Idaho for additional information sources

ProjectID: 9303501

Enhance Fish, Riparian, And Wildlife Habitat Within The Red River Watershed

Idaho County Soil and Water Conservation District

Short Description: Restore physical and biological processes to create a self-sustaining river/meadow ecosystem using a holistic approach and adaptive management principles to enhance fish, riparian, and wildlife habitat and water quality within the Red River watershed.

ISRP Recommendation - DNF / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-DNF

Sponsor Funding Request = \$550,000 / CBFWA Funding Recommendation = \$450,000

Recommendation:

Do not fund. This is not a scientifically justifiable proposal. An audit of both scientific accomplishments to date, and project expenditures should be conducted before any consideration is given to further expenditure of Program funds on this project.

Comments:

This project is intended to enhance fish and wildlife habitat in the Snake River Basin. It should have proceeded based on assessments of successes or failures of similar projects elsewhere such as the Bear Valley Creek restoration project of the 1980's. If fish runs are restored to Red River, does the restored section contribute more smolts (and other plant and other species' abundances) to the outmigrant population than similar areas that were left to “heal” on their own? No such comparison seems forthcoming. The CBFWA technical evaluation includes the observations that “This watershed is still being grazed and logged. There is considerable concern about the high cost and uncertain biological effectiveness. Project proposes a major structural solution without addressing ongoing land management activities.” The ISRP concludes that the project is of questionable benefit to fish and wildlife.

The sponsors argue that the Red River has the potential to be a major spring chinook and steelhead production stream, but that logging roads and mining have resulted in sediment loads that diminish the prospect. However, the proposal does not indicate why this particular reach of 4.4 miles is a bottleneck to production in the watershed. Is this a priority area for this kind of investment? This project remarkably is in its sixth year, with expenditures to date of over \$1.6M. Compared with other similar channel restoration projects, the costs seem very much out of line, as a minimum a justification for the

unusually high costs should have been provided. Furthermore, it is difficult to identify or assess the project's achievements to date.

The Methods description includes such statements as "The Lower Red River Meadow Restoration Project uses a holistic approach ...". The meaning in this context is unclear. If the habitat problem in this basin is sediment, one would hope that for \$1.6M after six years, some information could have been presented comparing the sediment yield of this basin with others not having the same management history, and that an argument would be made as to how load reductions could or will be achieved. Yet, there is nothing in the proposal indicating that any real habitat improvements will result from this project.

Six years is too long for a project to continue without a comprehensive review. A visiting committee should be convened specifically to evaluate this project. In the interim, no further expenditure of Program funds can be scientifically justified

Clearwater Habitat Proposals

General Comments on the Nez Perce Tribe's Clearwater Habitat Proposals (20084, 20086, 20087, 9607708, 9607709, 9607711, 9901600, and 9901700). The comments below pertain to the set of proposals 20084-9901700, all of which propose to obliterate stretches of roadway that may cause mass failures or that are potential sources of sediment for stream channels, to protect reaches of riparian habitat by excluding livestock grazing with fencing, and to revegetate some project sites within Clearwater River basin tributaries. Although elements of the proposals may be meritorious (experimental evidence generally shows that halting excessive input of sediments to streams, protecting stream banks and riparian vegetation all contribute to good fish habitat), these are all implementation projects that do not appear to be integrated on a system-wide basis. Furthermore, there is no basis for distinguishing between these proposals short of visiting each to make a personal assessment of damage. Presumably, BPA has models, or other decision tools, available for establishing the relative importance of such activities in an overall basin view. It is curious, however, that no proposals for location problems other than those in the Clearwater River basin were submitted. If no such plan/model exists, there is no "scientific soundness" of BPA's program for habitat restoration.

Although the proposed actions have some potential for improving conditions for fish in poorly managed watersheds, those activities associated with road obliteration also have potential for doing additional harm and should be conducted with extreme care. Monitoring should occur on a real time basis to ensure that the actions taken produce the desired result. Few of these projects include any details as to whether such monitoring of obliteration projects will occur or how it will be conducted. Careful monitoring is required to ensure obliteration projects do no harm. On the other hand, fencing projects require little or no monitoring. The proposals are made on the basis that fencing will help to protect habitat based on experimental results demonstrated and described in the literature. Monitoring, other than to ensure livestock are excluded, in the proposed projects only indicates that there is no confidence in the published experimental results. If that is the case, these projects should not be initiated until sufficient experimental evidence is available from carefully controlled trials to overcome any perceived inadequacies in the published studies. Revegetation efforts should be based on experimental demonstrations that natural seeding and growth will be insufficient. Information must now be available from many sites including BPAs own project on Bear Valley Creek to show whether natural revegetation of a stabilized area is insufficient and can only be accomplished if facilitated by hand seeding and planting. If a case cannot be made for either alternative from existing information, these proposals should be re-cast as research proposals with clear controls, and intensive monitoring.

Although all the proposals in this group mention as part of their justification a previously conducted comprehensive watershed analysis, little detail was provided to assure the reviewers that the eight projects were identified as the priority sites for habitat restoration. Ideally, an umbrella proposal could have been written providing much of the background information on the Clearwater subbasin and describing the comprehensive watershed analysis and the identification of these specific areas and projects as a priority

need. Additionally, an umbrella proposal might facilitate coordination among the various projects and activities in the basin.

Management of eight projects concurrently is probably beyond the capabilities of tribe staff, and phasing of the projects would be preferred; that phasing should be based on prioritization of the locations and types of habitat problems and likelihood for mitigation. Such information is nowhere presented. All proposals contain a section on monitoring and evaluation, which is laudable. However, the M&E tasks are not explained in enough detail to determine whether they are scientifically defensible. This is the case especially in the case of sediment monitoring, where the project teams appear not to have sufficient expertise – one would hope to see some collaboration with the U.S. Geological Survey in the design and execution of credible pre- and post-restoration monitoring programs. Finally, the requested (and ongoing) expenditures for these projects are of such a magnitude (several million dollars per year) that appointment of an expert oversight group to evaluate and comment on plans and ongoing work would be highly desirable.

ProjectID: 20084

Protect And Restore The North Lochsa Face Analysis Area Watersheds

Nez Perce Tribal Fisheries/Watershed Program

Short Description:

Protecting and restoring the North Lochsa Face Watershed to increase anadromous fish populations is the overall goal of this project. We will achieve this working within an overall watershed approach, based on comprehensive studies of the analysis area.

ISRP Recommendation - Delay Funding / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-until corrected

Sponsor Funding Request = \$204,782 / CBFWA Funding Recommendation = \$154,782

Recommendation:

Delay funding until the monitoring and evaluation plan is better described and a qualified fluvial geomorphologist is included on the project team. A comprehensive review of all habitat restoration activities in the Clearwater basin is needed.

Comments:

With respect to Proposal 20084, the proposers identify sediment as “a limiting factor for increasing anadromous fish populations” in the area. The proposers should have provided a reference, and some hard numbers showing sediment yield for the basin as compared with other comparable basins that have not been subjected to the same land use history. The proposed project would retire ten miles of roads within the area. Although the case has been made elsewhere that debris flows initiated by cut slope failures can be a major sediment source in logged watersheds, there are several aspects of this project that are of concern. First, insufficient information has been provided to show that retiring ten miles of roads will result in significant sediment load reduction. Why the ten miles specifically picked? Second, it appears that some of the methods proposed (i.e., removing culverts, regrading steep slopes) could well make the problem worse rather than better. Is there sufficient expertise on the project team to assure that the medicine won't be worse than the disease? As a minimum, the project needs to include a well-

qualified fluvial geomorphologist. Supervision by an Engineer-in-Training is not sufficient. The methods to be used for M&E (Objective 2) are not explained in nearly enough detail. Pre-and post-monitoring must include measurement of sediment loads, but sediment loads tend to be disproportionately affected by a few small intense storms. How will the ensuing problems of statistical significance be resolved? Another concern is why this project should not be paid for by USFS, which apparently built the roads in question. If those roads are the source of the problem, certainly they must have a financial liability. Finally, while it appears that the project will wind down by the end of five years, the reviewers could not find a definitive statement of project duration.

ProjectID: 20086

Rehabilitate Newsome Creek - S.F. Clearwater River

Nez Perce Tribal Fisheries/Watershed Program

Short Description: Protect and enhance Newsome Creek watershed for the benefit of both resident and anadromous fish. This will be accomplished using an overall watershed approach.

ISRP Recommendation - Delay Funding / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-until corrected

Sponsor Funding Request = \$364,725 / CBFWA Funding Recommendation = \$301,689

Recommendation:

Delay funding until priority of activities is justified and a fluvial geomorphologist is included on the project team. A comprehensive review of all habitat restoration activities in the Clearwater basin is needed.

Comments:

With respect to Proposal 20086, one curious aspect is that mining activities are identified at the beginning of the project description as a key source of habitat degradation. Yet, it is not clear that the project will really address those problems. Objective 3, "Design channel rehabilitation ..." would appear to be relevant, but there is no mention in the methods section that anything specific would be done – the focus seems to be primarily on the road issue. Insufficient information has been provided to show that retiring the roads specified will result in significant sediment load reduction. Why the particular road segments? Other issues raised in the Proposal 20084 panel summary pertain here as well. Specifically, there is a real possibility that the road work could make the problem worse rather than better, and it does not appear that the project team has the proper qualifications to undertake this work. The problem may well be an important one, and perhaps the proposers are even on the right track, but the proposal(s) simply don't provide any confidence that the projects are well conceived. The panel was also concerned about the lack of a watershed restoration plan or plans that could provide overall context for the project(s).

Some additional panel comments on Proposal 20086 include:

- 1) There seems to be over-reliance on the Rosgen method. Project personnel should get second-opinions on their hydrologic/geomorphic approach from qualified fluvial (and watershed) geomorphologists of the non-Rosgen school.

- 2) On p. 13—“health of the stream” cannot be measured by the proposed method. The proposers should better define what they are driving at and include biological factors.
- 3) The abstract mentions certain biological monitoring (“snorkel counts to document juvenile survival, and redd counts to document adult spawning success”), but such are not covered in the methods section—and the way they are expressed in the abstract leads one to believe the proposers probably don’t know what they are talking about. The monitoring and evaluation plans are inadequate.
- 4) P. 14, end of first paragraph—“The hydrological data [from the ‘Rosgen method’] will be used to create a good picture of what is happening within the watershed and help identify limiting factors within the watershed” (italics added). Limiting of what?

ProjectID: 20087

Protect And Restore Mill Creek Watershed

Nez Perce Tribal Fisheries/Watershed Program

Short Description: Protect and enhance critical riparian areas of the Mill Creek Watershed to provide quality habitat for Chinook salmon, Steelhead trout, Bull trout, and resident fish by working with an overall watershed approach.

ISRP Recommendation - Delay Funding / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-until corrected

Sponsor Funding Request = \$63,036 / CBFWA Funding Recommendation = \$63,036
Recommendation:

Delay funding until this project is scientifically and fiscally justified. The budget request is grossly in excess of the need. A comprehensive review of all habitat restoration activities in the Clearwater basin is needed.

Comments:

This particular proposal for Mill Creek identifies livestock damage to the stream as the primary problem, and fencing of the riparian corridor as the relevant response. Reviewers wonder whether Program funds of over \$200k are necessary to construct three miles of fence. In 1998, a fencing contractor in Montana quoted \$5,500 per mile for a ranch’s stream-protection fence that probably wouldn’t differ much from what’s proposed here, suggesting a cost for 3 miles would be about \$16,500. The proposal includes several statements like “working with an overall watershed approach” (in the short description) and similar statements throughout the proposal. However, there isn’t much evidence in the objectives and methods that there will be any substantive coordination, and/or how the tasks relate to an overall vision of watershed restoration. The applicant also hasn’t described how bad the grazing damage is, i.e., what is the current condition of the channel and riparian zone? Creation of a “riparian corridor” is mentioned, but there is no indication of how wide or long this corridor will be. How far from the creek will the fence be built?

ProjectID: 9607708

Protect And Restore The Lolo Creek Watershed

Nez Perce Tribal Fisheries/Watershed Program

Short Description: Protect, restore, and enhance the Lolo Creek Watershed to provide quality habitat for Chinook salmon, Coho salmon, Steelhead trout, Pacific Lamprey, and resident fish. This will be accomplished by working with an overall watershed approach.

ISRP Recommendation - Delay Funding / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-until corrected

Sponsor Funding Request = \$203,750 / CBFWA Funding Recommendation = \$203,750

Recommendation:

Delay funding until the monitoring and evaluation plan is described in greater detail. This is not a scientifically adequate proposal. A comprehensive review of all habitat restoration activities in the Clearwater basin is needed.

Comments:

This particular proposal for Lolo Creek identifies cattle grazing in the stream corridor as the primary problem, and fencing of the riparian corridor as the relevant response. About 13 miles of fencing have already been installed. The proposal also identifies stream bank stability as a habitat problem, and revegetation as the response. How much stream will be protected? How much (more, if any) fence will be built/repared? How far is/will the fence be from the channel? What is the evidence that planting is needed at all? What is the present density of key or beneficial plants? An M&E objective related to road obliteration is included, but reviewers cannot find mention of what roads, if any, have or will be retired. Given that the fencing has already been accomplished, reviewers wonder why continuing expenditures of over \$0.5M through 2004 are required. Certainly, M&E is necessary, but those activities should not be nearly as expensive as the budget suggests. Finally, for such a simple task, why are university professors needed? What are they going to do?

ProjectID: 9607709

Protect And Restore The Squaw To Papoose Creeks Watersheds

Nez Perce Tribal Fisheries/Watershed Program

Short Description:

Protecting and restoring the Squaw to Papoose Creek Watersheds is the overall goal of this project. We will achieve this working within an overall watershed approach, based on a completed watershed analysis.

ISRP Recommendation - Delay Funding / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-until corrected

Sponsor Funding Request = \$353,607 / CBFWA Funding Recommendation = \$303,607

Recommendation:

Delay funding until the monitoring and evaluation plan is described in greater detail and a qualified fluvial geomorphologist is included on the project team. A comprehensive review of all habitat restoration activities in the Clearwater basin is needed.

Comments:

This particular proposal for Squaw and Papoose Creek identifies logging activities, and associated flood damage (largely sedimentation-related) during the late 1995 floods, as the primary habitat problem in the basin, and road obliteration as the relevant response. About 12 miles of road were apparently removed in 1998. Other habitat mitigation measures, such as hillslope stabilization, addition of woody debris to channels, and stream bank revegetation have also been undertaken (although they are not mentioned in the project objectives or methods. This is an expensive project (total cost 2000-2004 over \$1.5M), and it is not possible to determine from the proposal how much of the work has already been accomplished. The panel was concerned that despite initiation of the project in 1996, there are apparently no monitoring results.

ProjectID: 9607711

Restore McComas Meadow/ Meadow Creek Watershed

Nez Perce Tribal Fisheries/Watershed Program

Short Description: Restore, enhance, and protect the diversity of physical and biological characteristics of Meadow Creek and associated wetland area to provide quality habitat for Chinook salmon and Steelhead trout by working with an overall watershed approach.

ISRP Recommendation - Delay Funding / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-until corrected

Sponsor Funding Request = \$166,622 / CBFWA Funding Recommendation = \$166,622

Recommendation:

Delay funding until a connection to fish benefits is demonstrated and the monitoring and evaluation plan is strengthened. A comprehensive review of all habitat restoration activities in the Clearwater basin is needed.

Comments:

This particular proposal for Meadow Creek identifies overgrazing and conversion of meadows to pasture, with associated development of irrigation ditches (within the McComas Meadow), as the primary habitat problem in the basin. High road density is also identified as a problem. Removal of irrigation ditches, riparian fencing and restoration of riparian vegetation are identified as the relevant response measures. However, the proposal doesn't describe the riparian zone or justify the need for plantings. Reviewers had such questions as: What is the prognosis for natural regrowth of vegetation? Why won't that suffice? Is a NEPA analysis really needed for a fence and some plantings? Why despite identification of high road density as a problem, is it that no measures are being undertaken to mitigate road effects?

Although there is a strong Monitoring and Evaluation component to the project, specifics of the monitoring design are missing. In particular, what long-term data are being collected to document reductions in stream temperature that should result from the restoration efforts? What is the sediment monitoring program? The panel noted that the monitoring program is absent any emphasis on fish and associated biological conditions, which are supposed to be the primary focus of the program.

Finally, the project cost seems excessive with respect to what is intended to be accomplished for the fish and their stream. The university role seems inconsistent with the practical goals of the project; why are university professors needed to install fences?

ProjectID: 9901600

Protect & Restore Big Canyon Creek Watershed

Nez Perce Tribal Fisheries/Watershed Program

Short Description: Restore Big Canyon Creek to a more healthy and productive system which is capable of sustaining a self perpetuating population of anadromous and resident fish.

ISRP Recommendation - Delay Funding / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-until corrected

Sponsor Funding Request = \$61,276 / CBFWA Funding Recommendation = \$61,276
Recommendation:

Delay funding until the monitoring and evaluation plan is strengthened. A comprehensive review of all habitat restoration activities in the Clearwater basin is needed.

Comments:

This particular (Big Canyon Creek) proposal identifies logging activities, and associated flood damage (largely sedimentation and erosion related) during the late 1995 floods, as the primary habitat problem in the basin. Although roads are identified as the source of 60% of the sediment delivery to the creek, apparently no road mitigation measures are to be undertaken (as they are in companion projects). Instead, the project focuses on riparian fencing, revegetation, and removal of livestock from the riparian corridor as the primary mitigation measures. Reviewers wonder whether the project can hope to be successful if the sediment problem is not addressed. Furthermore, the proposal doesn't tell how many miles of stream and fence are involved, nor does it describe the riparian zone or justify the need for plantings. Statements like that made in Section 8a, paragraph 1—" . . . due to man made [sic] influences the stream can no longer act as efficiently as it once did." are meaningless. Efficiently in what respect? What are the units of stream efficiency? In the same paragraph, fecal coliform are mentioned. Why? What do they do to fish?

ProjectID: 9901700

Protect & Restore Lapwai Creek

Nez Perce Tribal Fisheries/Watershed Program

Short Description: Restore Lapwai Creek to a more healthy and productive system which is capable of sustaining a self perpetuating population of anadromous and resident fish.

ISRP Recommendation - Delay Funding / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-until corrected

Sponsor Funding Request = \$61,276 / CBFWA Funding Recommendation = \$61,276
Recommendation:

Delay funding until the project is scientifically justified. A comprehensive review of all habitat restoration activities in the Clearwater basin is needed.

Comments:

This proposal for Lapwai Creek identifies irrigation activities, and flood damage from the 1996 flood, as the primary habitat problem in the basin. The mitigation actions identified are riparian fencing and streamside revegetation. However, the proposed activities are inconsistent with the habitat problems identified, specifically those associated with the 1996 floods. Specifically, the proposal state that "... Lapwai Creek can no longer handle high flow events ...". Yet it criticizes flood control activities as having "... created major habitat constraints". How would this project assure that future floods don't neutralize any habitat improvements that might be accomplished by planned activities? If, as the proposal indicates, "Stream reaches that are not channelized were heavily damaged in the 1996 flood event", is the solution channelization? Most habitat managers feel that channelization is itself responsible for habitat loss. This conflict, which appears to be central to the proposal's goals, is not addressed at all.

ProjectID: 8709900

Dworshak Dam Impacts Assessment and Fisheries Investigation

Idaho Department of Fish and Game

Short Description: Determines ways to minimize entrainment losses of fish into Dworshak Dam. Also, evaluates impacts to the kokanee population caused by drawdowns and routine operations of the dam.

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$285,000 / CBFWA Funding Recommendation = \$285,000

Recommendation:

Fund

Comments:

This is a proposal to evaluate measures (specifically the use of strobe lights) to reduce entrainment losses of kokanee into Dworshak Dam turbines. The project has been ongoing since 1987, since then strobe lights (and possibly other measures) have been tested off-site. Apparently the primary current-year tasks would be on-site testing. Information presented suggests that the project has shown some success in reducing turbine entrainment. The proposal includes a good summary of what has been learned, clearly outlines the problem, and describes methods that are clearly consistent with the objective. One concern is why over ten years were required (with funding apparently of several million dollars) to get to the point of on-site testing. The proposers should be encouraged to develop a definitive evaluation of the measure, and a long-term proposal for implementation. At that point, funding of ongoing costs should be as a reservoir operations line item, and not a Program expense. One other concern is that the publication plan is inadequate, publication of results of the tests (both off- and on-site) in a peer-reviewed journal should be a funding requirement.

ProjectID: 8740700

Dworshak Impacts/M&E And Biological/Integrated Rule Curves

Nez Perce Tribe

Short Description: Obtain and assess thermal, physical, chemical, primary production, zooplankton and benthic data for formulating biological/integrated rule curves for Dworshak Dam and Reservoir and for enhancing baseline data for monitoring and evaluation.

ISRP Recommendation - Delay Funding / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-until corrected

Sponsor Funding Request = \$199,485 / CBFWA Funding Recommendation = \$199,485

Recommendation:

Delay funding until project team incorporates expertise in modern water management modeling and evaluation.

Comments:

This is a continuing proposal to develop alternative rule curves for operation of Dworshak Reservoir, that will capture relationships between physical factors affecting the biology of the reservoir system (e.g., fish entrainment, reservoir and discharge temperature) as well as downstream reservoir operating objectives such as flood protection and fish flows in the lower Snake River system. There is no doubt that this kind of work is needed; it is only through use of simulation models that the implications of alternative reservoir operation strategies can be understood. However, while the qualifications of the project staff appear adequate for the biological aspects, background in hydrology and water resources operations is conspicuously absent. Perhaps it is for this reason that almost no details are given as to how the alternative operating rules will be evaluated. Reviewers had unanswered questions such as: What retrospective period of analysis will be used? How will the modeling activities be coordinated with operations studies being conducted by other agencies, such as COE and BPA? There is now the potential to use simplified simulation languages, such as Stella, to allow interactive evaluation of reservoir operating strategies. Such approaches provide an ideal mechanism for evaluation of tradeoffs between competing system demands. The panel was concerned that this work will result in a set of rules the feasibility of which will not be adequately demonstrated in the context of historical reservoir inflows, or in the context of the larger system within which Dworshak must be operated. This project has been ongoing for over 10 years, with cumulative funding now in excess of \$1M; it concerns reviewers that a set of operating rules is still not developed. The project publications, and interactions with the professional water resources community are inadequate. The reviewers would have expected, after ten years of funding, to have seen several papers in journals that deal specifically with reservoir (and more generally water resources operations) issues, such as the ASCE Journal of Water Resources Planning and Management, or the journal of the American Water Resources Association.

The proposers acknowledge that success of the project depends entirely on acceptance of the rule curves by NPPC and by the operating agencies. All of these participants must be brought into the process. Before the project proceeds, all participants need to be convinced that the project is important to them so that there is a positive, constructive

view of its development. Otherwise, the final product has little or no chance to be incorporated into the system, and the project will be only wasted effort. This is unlikely to occur unless and until technical expertise in interactive water management modeling and evaluation, including the human dimensions aspects thereof, is added to the project team. Even so, the approach will be a tough sell because of conflicts between demand for water to support a productive fishery in Dworshak and water for downstream uses.

ProjectID: 9501600

Genetic Inventory Of Westslope Cutthroat Trout In The N F Clearwater Basin

Nez Perce Tribe

Short Description: Document the extent of hybridization among native westslope cutthroat trout and introduced rainbow trout and evaluate the effects of Dworshak resident fish mitigation on wild trout in the North Fork Clearwater basin.

ISRP Recommendation - DNF / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-DNF

Sponsor Funding Request = \$200,000 / CBFWA Funding Recommendation = \$180,000

Recommendation:

Do not fund. This study duplicates work that has already been published (reference) and has no scientific justification.

Comments:

This is an ongoing project for which reviewers find little justification.

The proposal indicates that evidence of introgression of introduced rainbows into native populations has been found, but this result was a virtual certainty given the presence of both species in the basin. There is little reason to continue this line of inquiry; if managers do not want introgression to occur, they should halt the stocking programs immediately and hope that the cutthroat trout can re-establish themselves. The project has had adequate investment of time and money to address the stated objectives, i.e. to document the extent of introgression. The morphometric analysis is not useful and is expensive. Project personnel costs are high. The CBFWA technical evaluation also notes that adequate data is in hand to establish that a problem exists, and that a management action should result. CBFWA comments that this proposal has outlived its usefulness as a research activity and that continued work will be of questionable value to fish.

ProjectID: 20156

Identification Of Redband And Rainbow Trout In The N F Clearwater Basin

Nez Perce Tribe

Short Description: We are proposing a 12 month genetic study to identify if native wild redband trout exist in the North Fork Clearwater basin, and determine if introgression from hatchery rainbow threatens native redband and cutthroat trout in the basin.

ISRP Recommendation - Fund / CBFWA Tier 3 / ISRP Comparison with CBFWA: Disagree-fund, but not high priority

Sponsor Funding Request = \$110,925 / CBFWA Funding Recommendation =

Recommendation:

Fund

Comments:

This project is intended to show whether redband trout exist in the North Fork Clearwater River basin, and to determine whether rainbow trout have introgressed into redband populations. It is of interest to know whether redband trout exist in the basin; however, if redbands are present, introgression is likely. In any case, knowledge that their gene pool

now includes rainbow trout genes is of little utility primarily because there is no reasonable way to regain their original genetic structure. The best to be done now, is to stop stocking exotic rainbow trout. If a decision is made to continue stocking Dworshak Reservoir with trout, the brood stock should be from the native fishes. The project may have some potential benefit to the extent that remnant native populations can be identified, and the project should focus more on tasks related to this objective.

Salmon River Subbasin

ProjectID: 20535

Multi-Year Salmon Anadromous Fish Plan

Columbia Basin Fish & Wildlife Authority

Short Description:

**ISRP Recommendation - na / CBFWA Tier na / ISRP Comparison with CBFWA:
Umbrella Proposal**

Sponsor Funding Request = \$ / CBFWA Funding Recommendation =

Recommendation:

NA - Umbrella Proposal

Comments:

Five ostensibly “outcome-based” objectives are listed that the co-managers have adopted to address the problems identified in the proposal. The fifth of these is: “supplement where needed with genetically-appropriate salmon and steelhead in the subbasin using stock specific escapement criteria capable of maintaining stock productivity, survival and genetic diversity.” This objective is in fact not outcome-based, but rather states foremost the expected performance of an activity (supplementation). The emphasis appears to be on keeping technical programs going rather than on achieving results. The underlying outcome-based objective, if a valid one exists (it may be hinted at in the last part of the quoted sentence), should be made clear in a re-casting of this fifth item.

ProjectID: 9700100

Captive Rearing Initiative for Salmon River Chinook Salmon

Idaho Department of Fish and Game

Short Description: Develop captive rearing techniques for chinook salmon and evaluate the success and utility of captive rearing for maintaining stock structure and minimum number of adult spawners in three drainages.

**ISRP Recommendation - Fund in Part / CBFWA Tier 1 / ISRP Comparison with
CBFWA: Partially agree-fund in part**

**Sponsor Funding Request = \$546,385 / CBFWA Funding Recommendation =
\$546,385**

Recommendation:

Fund in part, at a base level, to meet production objectives; do not fund research component of proposal because of technical inadequacies. There should be quality research associated with this project, designed with suitable methods and testable hypotheses to address recognized uncertainties associated with captive brood technology.

Comments:

The proposal appears to have as its basic assumption that captive reared fish are the same ecologically, behaviorally, and genetically as the native stock; however, this assumption should be tested as the project’s major null hypothesis, rather than serving as its primary assumption.

Captive rearing may be a reasonable (but last-ditch) effort in the current situation; reviewers assume that policy has been formally reviewed and approved in the region. No

cost sharing is indicated in the proposal, and that seems unexpected. Progress on the project in 1997-98 is only superficially described, but it appears that results from captive-reared fish that were released in 1998 will be very important. The FY2000 budget, a major increase from previous years, is justified (by the authors) by the apparent need to hire an additional biologist and expand facilities.

The proposal's stated objectives seem reasonable at first glance, but the tasks described in the methods section will not meet the objectives, so the proposal is unsound from scientific standpoints. For example, Objective 1 is to produce chinook having morphological, physiological, and behavioral characteristics similar (how similar?) to those of naturally-produced fish. However, no morphological, physiological, or behavioral tests are described for comparing the artificially-raised fish against wild counterparts, except that under Objective 2 it will merely be observed whether or not the hatchery products "spawn in the wild." Where are the genuine morphological, physiological, and behavioral measurements, what is the statistical design, and where are the wild "control" animals?

Objective 2 is to "evaluate spawning behavior and success of outplanted (captive-reared) adults." The primary measure of spawning success should be the production of offspring that are as fit as wild counterparts, i.e., that survive as well to the spawning stage as do wild fish, and that produce offspring that are as viable as those of wild fish. The methods include (1) observation of spawning behavior in a weired section of a stream and (2) "snorkel surveys to quantify juvenile production." This experiment is not replicated, and it is not stated what method will be used to convert raw counts of juveniles into an estimate of the actual number produced. Neither is it stated how the snorkelers will know which juveniles are offspring of the subject spawners and which are immigrants from elsewhere.

Objective 3 is to "assess population viability and develop conservation management plan" (bottom of p. 14). Under that statement it says there are "no testable hypotheses." If the applicant believes no testable hypothesis exists for assessing population viability, then population viability cannot be assessed. Therefore, the objective should not exist. The proposal contains no description of methods for Objective 3.

In the past-accomplishments table (Section 4, p. 3), the following 1997 item is shown: "Successful outplanting of up to four, brood year 1994, three-year-old male chinook salmon to source streams. Movement and behavior documented. Reviewers wonder if this is a misprint.

The proposal indicates (p. 16, end of first paragraph under Obj. 2) that "a framework" is still being developed for the FY2000 methods. Because the applicant does not yet know what the methods will really be, and the logic of the proposal is so faulty, this proposal should not be funded.

ProjectID: 9705700
Salmon River Production Program

Shoshone-Bannock Tribes

Short Description: Use instream, sidestream, and in-lake incubation and on-site rearing methods that provide increased natural adaptation to the environment and higher quality smolts than traditional production techniques to increase natural production.

ISRP Recommendation - DNF / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-DNF

Sponsor Funding Request = \$931,376 / CBFWA Funding Recommendation = \$931,376

Recommendation:

Do not fund, technically inadequate.

Comments:

This proposal requires greater detail and clearly stated objectives with provisions for monitoring and evaluation of results. The CBFWA evaluations included the comment that the “Proposal is vague and does not provide a complete project description.” Except in describing other projects (Sec. 8c), it addresses fishery resource problems only in the vaguest of terms. Its content is directed toward developing a rather unspecified method of artificial propagation and description is lacking of any results of previous funding in 1996-98. There is no clear discussion of method other than a listing of several possible “low-tech” culture techniques. Monitoring methods are equally vague and there is little evidence of planning here. The authors neglect to justify the proposed costly expenditures on facilities, equipment, travel, etc. Hatchbox technologies could be tested on a much smaller scale. There is no provision for cost sharing.

The technical intent has some admirable qualities (e.g., “low tech”), but the applicants’ explanations are naïve and do not show convincingly how it would solve a resource problem. Stream-side incubators a) have received favorable media attention and suggest increasing local awareness of the issue and b) have involved many young people in the process, but their biological efficacy should be assessed and compared with other options before the program is expanded. As it stands, the project is almost purely activity-oriented rather than fishery-results-oriented, and thus appears to be busy work. Additionally, with a budget request of \$913K, the proposal would be “low tech” at a very high price.

The Abstract notes that “based upon scientific principles and theory for recovery of naturally reproducing native fish species, proposed methods involve reforming and redirecting existing hatchery programs and practices in conjunction with the addition of small, relatively inexpensive (streamside and satellite) facilities to incubate eggs and provide volitional releases of naturally acclimated juvenile fish.” Nowhere in the proposal are any scientific principles or theory stated. Some of the proposal’s review of general problems provides only equivocal argument for embracing the applicants’ proposals. For example, the table on p. 10 shows “expected life history survival for different production strategies,” but the source of the data is not identified.

ProjectID: 9604300

Johnson Creek Artificial Propagation Enhancement Project

Nez Perce Tribal Fisheries/Watershed Program

Short Description: Implement and monitor supplementation program to recover native summer chinook salmon in Johnson Creek. Construct facilities for adult collection and holding, NATURE's concept rearing, and smolt acclimation.

ISRP Recommendation - Delay Funding / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-until corrected

Sponsor Funding Request = \$2,800,000 / CBFWA Funding Recommendation = \$2,800,000

Recommendation:

Delay funding until clear scientific evidence is provided that this project is a high priority in the Salmon River drainage.

Comments:

This was a very difficult proposal to evaluate. It was difficult to assess the priority of spending nearly \$3 million to initiate artificial propagation – this is a major policy issue, not really a scientific or technical one. Are there potential significant biological benefits in creating a new facility versus continuing to use the existing facilities at McCall? The proposal does not convince the reviewers that this is the best location for this activity relative to other locations in the Salmon River basin. It may be, but this is not described in enough detail. The authors cite a letter from NMFS toward this point, but do not describe the contents. Why is this a priority area? This is the same criticism the ISRP had of this proposal last year. Funded work in the past has been collecting baseline life history information on Johnson Creek chinook (to examine survival of wild fish) but no results are presented. The authors propose to use the NATURE's concepts in rearing and releasing smolts, but failed in the proposal to describe or reference the NATURE's program. Visible implant tags are proposed for large-scale use in the study in spite of recent studies in Montana (N. Amer. J. Fish Mgt 16 [4]) that indicate substantial tag loss associated with this technique. The proposal needs better expressed goals and a timeline.

Nevertheless, reviewers found many positive things in the proposal. The proposal was very well written. The proposal makes clear from the outset that the project is an emergency effort to prevent extirpation of an ESA-listed stock, then sets forth a logical plan. The array of objectives is thorough (indeed, exceptionally large) and for the most part well stated. Most of the methods are thoroughly presented. There are a few vague points, such as (p. 20, lines 2-3) the method for calculating parr (abundance?) and survival estimates is not described. But the quality of the proposal and the qualifications of project personnel leave little doubt that they have a proper method in mind. It is highly commendable that the authors included discussions of risks. This is one of the only proposals that covered this requirement.

The budget warrants further scrutiny. Personnel and travel budgets look excessive. It concerns reviewers that the fish hatchery, the associated investigative project, or the two combined should need such extensive support personnel as an office manager, a program manager, and a contract administrator.

ProjectID: 9102800

Monitoring Smolt Migrations of Wild Snake River Sp/Sum Chinook

National Marine Fisheries Service

Short Description: Collect time series information to examine migrational characteristics of wild ESA-listed Snake River spring/summer chinook salmon stocks. Mark wild spring/summer chinook salmon parr with PIT-tags annually; intercept and decode tagged smolts as they pass.

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$385,200 / CBFWA Funding Recommendation = \$325,200

Recommendation:

Fund. OK for multiyear funding, review on 3-5 year timeframe

Comments:

This is an adequate proposal to continue a smolt monitoring project that provides invaluable data basic to making management decisions affecting the stocks involved. The project objectives (Section 4) are formulated as data-gathering and information-providing tasks, rather than as statements of desired outcomes (i.e., to find out if X exists or whether Y is performing better than Z, etc.). Therefore, the project would seem to be more a data-gathering exercise than true research. Some genuine research questions (problems) are touched on in the narrative. These should be incorporated in the objectives. The data-gathering and info-providing functions should be discussed as methods toward the revised objectives. Any statistical design is lacking in the proposal and should be included.

The proposal to install and operate a new rotary screw trap in Lower Big Creek seems unjustified to reviewers. The presentation of this as a “wonderful opportunity” seemed a matter of convenience only. In a biological (and wild chinook management) sense, why would a new trap site be worth the allocation of resources?

ProjectID: 9703000

Monitor Listed Stock Adult Chinook Salmon Escapement

Nez Perce Tribal Fisheries/Watershed Program

Short Description: Monitor adult salmon escapement over time, with a passive temporary facility using underwater time-lapse video technology. This would allow comparison to redd count survey data and evaluation of recovery actions on unsupplemented chinook populations.

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$163,122 / CBFWA Funding Recommendation = \$156,122

Recommendation:

Fund. The emphasis should be on research and development and peer-reviewed publication of results. Major review recommended in one or two years to evaluate the benefits of the technology and the applicability to other systems.

Comments:

This is a well-designed and well-written proposal. The proposal describes a clear programmatic need and involves new technology on a control unsupplemented stream. It also ground-truths the new technology against long-standing methodology of surveyed redd counts. Additionally, the history of the project documents a collaboration amongst co-managers and an adaptive management approach to solving the problems that plagued the 1997 initial field season. This technology would be particularly valuable if it can be shown to be functional during peak runoff conditions. Review of the project and its results in a year or two would be useful in order to determine whether to discontinue the approach or to implement it on a larger scale.

Some reviewers had misgivings about the proposed technology development. Their comments are summarized as follows. Development of a technique that gets a better count of salmon adults than redd counts usually get may be desirable but getting counts is not the only purpose of redd surveys, which will probably have to continue anyway for various other purposes. Statistical design for comparing video results with redd counts is not described. The proposal fails to include the very important aspect of comparing the cost of this method with that of multiple-count redd surveys. Lengths of streams and numbers of spawners are not described, nor are other stream characteristics.

Despite generalized assertions, there was no evidence presented in the proposal that accurate fish counts were made in 1997-98. The opinion that the monitoring facility will not influence fish passage is unsubstantiated and probably wrong. Chinook salmon are known to be very shy of structures resembling the proposed device. The proposal says (p. 12) that “the fish counting station did not appear to impede fish movement or displace spawning downstream in 1997 and 1998.” But did they really look at this situation? By what method? Where is the evidence of no influence? A much different situation has been found for chinook (and maybe other fishes) at other barrier-like facilities. The reliability of the proposed technique appears low. The proposal indicates that the equipment does not work well. Especially in view of high susceptibility to flood washout, disruption by turbidity events, and inevitable equipment malfunction, how could this fragile, high-tech, failure-prone method be better than redd counts? Redd counts are simple and reliable, usually don't require fancy, expensive equipment (unless a helicopter is needed), and don't disturb the fish much. The video technique is complex, unreliable, expensive, and could be highly disruptive of fish migration.

The technology transfer section of the proposal fails to mention the publications that have arisen from this project thus far. No doubt others should come out of the work. They should be explicitly recognized, and represent a more important technology transfer to the general scientific community than does the cited annual report, which at least in part is required contractually to fulfill BPA contracting needs, and may be a poor vehicle for technology transfer to the general fisheries community. The proposed budget seems appropriate to the project. Once the technology is developed, the costs would be expected to stabilize at a much lower level.

ProjectID: 9902000

Analyze the Persistence and Spatial Dynamics of Snake River Chinook Salmon

U.S. Forest Service, Rocky Mountain Research Station

Short Description: Emerging conservation theory suggests that recolonization and persistence of widely ranging species may be strongly influenced by the spatial geometry of remaining habitats. The relevance of these concepts to the persistence of declining stocks of chinook

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$103,850 / CBFWA Funding Recommendation = \$50,000

Recommendation:

Fund. OK for a multi-year review cycle, look at in two years (medium priority)

Comments:

The proposal describes work intended to assess the spatial distribution of spawners via aerial counts. The proposal is a strong, well-written one with exceptionally qualified staff. The work is academically interesting, but is already quite well understood. We did not feel the proposal adequately described how results of this analysis might be used to increase the protection or enhancement of chinook populations. In general, we were supportive of the portion of this proposal that examines the accuracy of aerial redd counts. However, aerial redd counts have been ground-truthed for decades, but no summarization of those results was presented. Groundwater effects should probably also be considered.

There is no justification of why one month's time for each of the two cooperating scientists is needed or how it would be utilized, nor is there explanation of why FY2000 budget is doubled from that of FY99. Use of subcontractors is not adequately described.

ProjectID: 20055

Evaluate A Mark-Resight Survey For Estimating Numbers Of Redds

U.S. Forest Service, Rocky Mountain Research Station

Short Description: We propose a pilot study to evaluate the use of a mark-resight survey for obtaining estimates of numbers of Snake River chinook salmon redds. If successful, our method would provide a statistically rigorous means of monitoring salmonid populations.

ISRP Recommendation - DNF / CBFWA Tier 3 / ISRP Comparison with CBFWA: Agree-DNF

Sponsor Funding Request = \$43,050 / CBFWA Funding Recommendation = Recommendation:

Do not fund as a new proposal. Instead, do this within 9902000.

Comments:

A strong proposal that provides a comparison between aerial and ground surveys of redds. This research is much needed and should result in improved technique. The budget seems high. Nevertheless, the proposal does not appear to be justified. Its main tasks are those already being done in 9902000. The work, which appears valid and needed, could easily be completed as part of that project, without additional funding. As a general topic, increasing the power of redd counts is important, but this proposal would not be a cost-effect approach.

ProjectID: 9107200

Redfish Lake Sockeye Salmon Captive Broodstock Program

Idaho Department of Fish and Game

Short Description: Establish captive broodstocks of Redfish Lake sockeye salmon. Spawn captive adults to produce eggs, juveniles, and adults for supplementation and future broodstock needs. Monitor nursery lake conditions. Evaluate juvenile outmigration by release option.

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$680,096 / CBFWA Funding Recommendation = \$680,096

Recommendation:

Fund. OK for a multi-year review cycle, review again in three to five years.

Comments:

This proposal deals with a stock at imminent risk of extinction and continues a long-running captive rearing program. The proposal is clearly written with appropriate objectives and tasks. Project history and accomplishments are well documented, including specific data by year and by lake.

Criticisms of the proposal included that 1) Adult return should be one of the proposal's objectives and should be considered and measured in the tasks, including monitoring and evaluation. Success in the project is measured against smolt numbers (at various life stages), but not against adults, even recognizing that in some ways, this places an unfair burden of proof on the project. Nonetheless, ultimate success of the project (and related projects) depends solely on this parameter. 2) The proposal does not describe

benchmarks of criteria that would terminate the project due to success or to failure. Future versions of the proposal should identify those benchmarks and address how they will dictate the ultimate fate of the project. 3). No mention is made of peer-reviewed publications as an end product of the Technology transfer section.

ProjectID: 9204000

Redfish Lake Sockeye Salmon Captive Broodstock Rearing And Research

National Marine Fisheries Service

Short Description: Incubate and rear Redfish Lake sockeye salmon captive broodstocks. Provide pre-spawning adults, eyed eggs, and juveniles to aid recovery of this ESA-listed endangered stock in Idaho.

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$500,000 / CBFWA Funding Recommendation = \$475,000

Recommendation:

Fund. OK for a multi-year review cycle, review again in three to five years

Comments:

The overall intent of the project is laudable, but the proposal is inadequate. The objectives are poorly stated. Coverage of progress to date is minimal or lacking. While this project is primarily implementation rather than research, to the extent that it includes research, an experimental design should be developed and clearly stated. Objectives (p. 3) are not appropriately stated. Tasks need to be stated as measurable activities. The proposal cautiously describes the benefits and possible/probable negative effects of captive broodstock technology. The project has also demonstrated a steady record of publications and technical reports beyond the required final BPA reports.

The proposal includes a large budget request. The budget could probably be reduced significantly, especially travel.

ProjectID: 9107100

Snake River Sockeye Salmon Habitat And Limnological Research

Shoshone-Bannock Tribes

Short Description: Increase carrying capacities of Snake River sockeye salmon rearing lakes (Redfish, Pettit, and Alturas). Evaluate the effects of nutrient additions and fish stocking on the lake's ecosystems.

ISRP Recommendation - Delay Funding / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-until corrected

Sponsor Funding Request = \$438,461 / CBFWA Funding Recommendation = \$427,000

Recommendation:

Delay funding until project describes that a risk assessment has been done pertaining to risks associated with altering food web structure. In addition, if funded, this project needs careful annual review with better reporting on results.

Comments:

Programmatic justification for the project seems literal, rather than descriptive and logical. The proposal fails to provide compelling evidence that nutrient addition will adequately enhance Snake River sockeye. Published reports (Trans. Am. Fish Soc .127[1]) suggest that “whole-lake fertilization would aid in the recovery of Snake River sockeye” and “fertilization should be considered an important short-term tool for decreasing erosion of stock”, but also that “8 years after the end of a 3-year fertilization period, adult returns would only be 5% greater than for unfertilized conditions.” If (or when) adult sockeye resume migration to the lakes, fertilization might be more cost-effective; it may not be effective now.

This project should be classed primarily as research, secondarily as implementation (one aspect only). The narrative on project history is inappropriately mixed into the technical background section. The proposal is inadequate in its consideration of possible unwanted side-effects. The fertilization could have many ramifications for the biotic community. The authors need to describe the risks inherent in the action of fertilizing the lake and changing the nutrient level and makeup of the plankton community. The proposal does not adequately address the extensive research done in Canada. The proposal remains inadequate for the same reasons the ISRP identified last year [see last year’s report and comments on page 89, appendix A]. Funding level appears high.

Peer reviewed publications in fisheries or aquatics journals should come from this work. Given the nutrient-poor status of most of the Snake Basin, the results of the large-scale fertilization experiment represent an important opportunity for technology transfer to the fisheries community. Funding has been provided since 1991 at about \$500K per year, aimed at many basic research questions. The project should support a solid publication base. Reports to the Technical Oversight Committee are certainly necessary for oversight, coordination and for adaptive management to occur. But these and the required final report to BPA fall considerably short of the potential for transfer of information to both the scientific community and to a public interested in the fate of the Redfish Lake Sockeye and the Endangered Species Act. Peer review publication, particularly of the fertilization experiments, should be expected.

The proposal does not seem to adequately describe the role and contribution of the subcontractor. It appears there is a change in the subcontractors (previously from Utah State with a good publication record for the project), which raised concerns among the reviewers regarding the project’s continuity.

ProjectID: 9202603

Idaho Model Watershed Administration/Implementation Support

Idaho Soil Conservation Commission

Short Description: Provide a basis of coordination and cooperation between local, private, state, tribal, and federal fish and land managers, land users, land owners and other affected entities to manage the biological, social and economic resources to protect, restore and . . .

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$185,400 / CBFWA Funding Recommendation = \$185,400

Recommendation:

Fund for one year. Subsequent funding contingent on a performance audit of these three proposal, 9202603, 9401700, and 9306200, to determine if the results are benefiting fish and wildlife in a cost effective manner. The proposals should be consolidated into one proposal with better described methods for selecting and prioritizing restoration efforts and for monitoring and evaluation. They also need a timeline for termination.

Comments:

The Lemhi River once had a chinook population, but the river dried up in drought years. The watershed program has subsequently united previously contentious parties. However reviewers are concerned about the quality of the proposal. This proposal, along with 9401700 and 9306200, list exactly the same accomplishments, since 1993. Most of the narrative portions of all three proposals are also identical. Because of this, the three proposals either need to be combined into a single proposal, or two of the three should be discontinued. There appears to be no performance accountability in any of the proposals. The project is more implementation than “watershed.”

The project's history is mixed into the technical background section. Instead, that section should present the scientific basis for the project. The proposal mentions “holistic” watershed management, but doesn’t describe in detail how the concept enters into its objectives or tasks. The planned “watershed plan update” (\$10,000) is undefined. The proposal’s literature references are inadequate. Qualifications of project personnel are inadequately described. The proposal fails to describe US Forest Service and other federal management in the watershed. Nor does it adequately describe the biological component of their monitoring and evaluation.

A “hatchbox” program is mentioned in the proposal but is not covered by any of the objectives or methods—and such a program certainly could not apply to any objective of a watershed project. Hatchbox projects, while popular with the media and public, have a record of poor success. The inclusion of a hatchbox program in this proposal, particularly without defining a rigorous plan to test and evaluate their effectiveness, is not appropriate. Reviewers suggest elimination of the hatchbox program and its \$9,600 budget item (p. 8).

This proposal supports a project coordinator and office staff with \$185K. While the model watershed program is a good one, and is doing important work that is gaining

momentum in the community, a performance audit might result in some tightening of the program and its budget. For example, one individual (Glen Seaborg) is shown as “full time” not only on this project but also on project 9401700 and on project 9306200. Can equivalent results be accomplished with a lower level of funding?

ProjectID: 9401700

Idaho Model Watershed Habitat Projects

Lemhi and Custer Soil and Water Conservation Districts

Short Description: To protect, enhance and restore anadromous and resident fish habitat and achieve and maintain a balance between resource protection and resource use on a holistic watershed management basis.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$400,000 / CBFWA Funding Recommendation = \$400,000

Recommendation:

Fund for one year. Subsequent funding contingent on a performance audit of these three proposal, 9202603, 9401700, and 9306200, to determine if the results are benefiting fish and wildlife in a cost effective manner. The proposals should be consolidated into one proposal with better described methods for selecting and prioritizing restoration efforts and for monitoring and evaluation. They also need a timeline for termination.

Comments:

This project supports anadromous and resident fish habitat protection and restoration. There is evidence of good collaboration with agencies and landowners.

This proposal, along with 9401700 and 9306200, list exactly the same accomplishments, since 1993! Most of the narrative portions of all three proposals are also identical. Because of this, the three proposals either need to be combined into a single proposal, or two of the three should be discontinued. There appears to be virtually no performance accountability in any of the proposals. The project is more implementation than “watershed.” The Project's history is mixed into the technical background section. Instead, they that section should present the scientific basis for the project. The proposal pays mentions “holistic” watershed management, but doesn’t detail describe in detail how the concept plays enters into its objectives or tasks. The “watershed plan update” (\$10,000) is undefined. The proposal’s literature references are inadequate. Qualifications of project personnel are inadequately described. The proposal fails to describe US Forest Service and other federal management in the watershed. The methods listed are generic only, and give no indication of the activities planned for FY2000.

While the model watershed program is a good one, and is doing important work that is gaining momentum in the community, a performance audit might result in some tightening of the program and its budget. For example, one individual (Glen Seaborg) is shown as “full time” on this project and on project 9401700 and on project 9306200.

ProjectID: 9306200

Salmon River Anadromous Fish Passage Enhancement

Lemhi and Custer Soil and Water Conservation Districts

Short Description: To protect, enhance and restore anadromous and resident fish habitat and achieve and maintain a balance between resource protection and resource use on a holistic watershed management basis.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$100,000 / CBFWA Funding Recommendation = \$100,000

Recommendation:

Fund for one year. Subsequent funding contingent on a performance audit of these three proposal, 9202603, 9401700, and 9306200, to determine if the results are benefiting fish and wildlife in a cost effective manner. The proposals should be consolidated into one proposal with better described methods for selecting and prioritizing restoration efforts and for monitoring and evaluation. They also need a timeline for termination.

Comments:

The short description of this project is identical to that of 9401700. This proposal states what the problem is that is being dealt with but falls short on most details. Objectives and methods are mixed together, and the methods listed are described so generally that they can't be evaluated. Little biological monitoring is identified, and the methods for it are inadequately described. Alternative approaches are not described. Unwanted side effects are not discussed. The proposed budget covers materials purchase only. Personnel are not described well. Otherwise the proposal is clearly written and articulates the rationale, past history, and accomplishments, as well as describing general future activities in the 2000-2005 time frame. Past work under the project has resulted in biological benefits which, although very tersely presented, document improved summer flows (dewatering common for 1-6 weeks annually before this project), a doubling of spawning counts of resident rainbow trout in the target monitoring sections, and elimination of many migration barriers often through consolidation. While the results were very general in nature (and reviewers wished for more quantification), the presentation of results and progress toward an identified goal was noteworthy. While the model watershed program is doing important work that is gaining momentum in the community, a performance audit might result in some tightening of the program and its budget. For example, one individual (Glen Seaborg) is shown as "full time" on this project and on project 9401700 and on project 9306200.

ProjectID: 9401500

Idaho Fish Screen Improvement - O&M

Idaho Department of Fish and Game

Short Description: Enhance passage of juvenile and adult fish in Idaho's anadromous fish corridors by consolidation and elimination of irrigation diversions. Minimize impact of irrigation diversion dams, screen pump intakes and loss of fish to irrigation canals.

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$1,000,000 / CBFWA Funding Recommendation = \$1,000,000

Recommendation:

Fund, ok for multiyear funding, run to completion in 2005.

Comments:

This is an excellent proposal to continue an expensive fish screening program. Apparently no monitoring and evaluation of results is conducted so it is not possible to gauge the cost per smolt protected. If smolts are considered priceless, that is appropriate; otherwise, this may simply represent a subsidy to engineers and construction workers. The reviewers suggest incorporating monitoring and evaluation protocols and benchmarks into the project. There appears to be good collaboration among agencies and landowners. The proposal notes that screening should be complete by 2005. If the project is not linked with a smolt monitoring project it should be considered.

ProjectID: 9405000

Salmon River Habitat Enhancement M&E

Shoshone-Bannock Tribes

Short Description: Maintain habitat improvements and evaluate benefits; monitor salmonid populations; coordinate evaluation of land and water stewardship activities; coordinate the planning, implementation, monitoring, and evaluation of new improvements and protections.

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$245,000 / CBFWA Funding Recommendation = \$245,000

Recommendation:

Fund (medium priority)

Comments:

This proposal focuses on monitoring and evaluation of results of previously completed “enhancement” work. This is appropriate, but there is no indication whether before-project habitat and fish data exist as a comparison. Proposed methods seem reasonable and standardized. There is to be little or no active collaboration with others, apparently, although there is mention of working cooperatively. Alternative approaches and unwanted side-effects are inadequately addressed.

ProjectID: 20017

Restore Habitat Within Dredge Tailings On The Yankee Fork Salmon River

Shoshone-Bannock Tribes, Idaho Department of Fish and Game, U.S. Forest Service

Short Description: Restore natural hydraulic and sediment regimes, restore floodplain and riparian function, expand available chinook salmon and steelhead spawning and rearing habitat, connect the West Fork Yankee Fork and Yankee Fork Salmon River priority critical reaches

ISRP Recommendation - DNF / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-DNF

Sponsor Funding Request = \$207,260 / CBFWA Funding Recommendation = \$65,000

Recommendation:

Do not fund, technically inadequate

Comments:

The proposal intends to develop a channel restoration design for a portion of the Yankee Fork and to conduct a small pilot project. The proposal cites a six-mile stream segment on private land as the intended target area, but that is not entirely clear. The authors do not establish that this area is a critical bottleneck limiting production and therefore, that it deserves priority consideration. A project manager would be hired at a \$50K salary. An easement or land exchange with private landowners would be necessary but there is no further mention of interaction with the company. No cost sharing is shown although they list collaborators. This appears to be a poorly conceived project with little chance of success. Alternative approaches and unwanted side-effects are not discussed and a monitoring and evaluation plan is not described. The CBFWA evaluation notes that planning is not completed and the proposal "...does not describe biological objectives or milestones. Monitoring plan is inadequate." Reviewers consider the proposal deficient in sound scientific principle and lacking in clearly defined objectives, particularly in advancing provisions for monitoring and evaluation.

ProjectID: 20032

Protect Bear Valley Wild Salmon, Steelhead, Bull Trout Spawning Habitat

Shoshone Bannock-Tribes and Idaho Department of Fish and Game

Short Description: Protect critical spawning, rearing and migratory habitats for wild chinook salmon, steelhead trout, bull trout and westslope cutthroat trout in the Elk Creek portion of the Bear Valley Basin by permanently closing the allotment to livestock grazing.

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$310,000 / CBFWA Funding Recommendation = \$310,000

Recommendation:

Fund (high priority)

Comments:

This is an excellent proposal. It emphasizes protection and passive restoration of habitat and supports its points with data. Proposed is an unconventional approach of buying-out

a USFS grazing allotment. Even though the proposal is clear and well written, no information was provided on the current status of bull trout and cutthroat trout. Good collaboration with others is evident here. Reviewers asked: Is this a precedent-setting proposal? Is it compatible with established policy?

ProjectID: 9901900

Restore the Salmon River, in the Challis, ID area, to a healthy condition

Custer County Watershed Group

Short Description: Restore river corridor to a healthy condition by reestablishing riparian vegetation and allowing the floodplain to become functional. Social and political factors are being addressed through a county-based watershed group.

ISRP Recommendation - DNF / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-DNF

Sponsor Funding Request = \$50,000 / CBFWA Funding Recommendation = \$50,000

Recommendation:

Do not fund, technically inadequate.

Comments:

This proposes to alter stream banks along 12 miles of the Salmon River near Challis, Idaho, with much of the cost to be borne by the Corps of Engineers. There is no documentation why this reach is critical or more critical than others. The proposal does not adequately convey that this is a priority area for these activities. This project is potentially an effective use of a relatively small amount of BPA money, but a more thorough plan should be developed. The proposal falls short of establishing sound scientific principles and demonstrating clear benefits to fish and wildlife. The proposal lacks detail particularly of proposed methods and cites several references in the text that are not subsequently included in the reference list. CBFWA also noted that the proposal is a "Good concept but the proposal lacks enough detail to adequately review the project. ... Sections 3 and 4 are incomplete. ... An adequate proposal should include implementation activities and an effective monitoring plan. Reviewers suggest that the authors make further efforts to interact with other model watershed projects in the Lemhi, Pahsimeroi, and East Fork Salmon. Together with the collaborators identified in Section 9 they could develop technically defensible approaches, procedures and a viable proposal.

ProjectID: 9600700

Irrigation Diversion Consolidations & Water Conservation; Upper Salmon R

Lemhi County Soil & Water Conservation District

Short Description: Irrigation consolidation of gravity diversions 10 Acre Canal (S-13) with the Pope Canal (S-14) and the Kane/Ramey Canal (S-12) with the Edwards Canal (S-11). Construct new fish screens on S-14 and S-11.

ISRP Recommendation - Delay Funding / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-until corrected

Sponsor Funding Request = \$753,816 / CBFWA Funding Recommendation = \$293,113

Recommendation:

Delay funding until they can demonstrate that the water saving will be secured for instream use, through filing of instream water rights and monitoring of those rights.

Comments:

This is not a watershed proposal; this is implementation of irrigation screening. What is proposed is to consolidate irrigation diversions and improve fish screens. A small amount of BOR funding would apparently be available. Any purported “saving” of water should be formalized by filing for an instream water right, but that issue is not addressed in the proposal. There was no evidence of fish losses presented to justify the proposal. There was no indication that other agencies (esp. IDFG) feel that this is a high-priority project that justifies its substantial cost.

Grande Ronde and Imnaha

ProjectID: 20531

Multi-Year Grande Ronde Anadromous Fish Plan

Columbia Basin Fish & Wildlife Authority

Short Description:

ISRP Recommendation - na / CBFWA Tier na / ISRP Comparison with CBFWA: Umbrella Proposal

Sponsor Funding Request = \$ / CBFWA Funding Recommendation =

Recommendation:

NA - Umbrella Proposal

Comments:

This umbrella proposal gives a brief overview of CBFWA activities associated with anadromous fishes in the Grande Ronde basin. The presentation assumed that the reviewer had extensive knowledge of the status of chinook and summer steelhead stocks, neither explaining it in this proposal, nor providing any references for the benefit of the reviewer. The umbrella did mention that coho and sockeye were extirpated, suggesting that, for these two species, there was a need to address the problem. The presentation did not give a clear rationale for the set of studies included under this umbrella, only listing those studies in Section 3. There was nothing more about them and no time sequencing. The proposal acknowledges that habitat degradation is a problem, but does not address solutions for that problem. The hatcheries emphasized here, even when the hatcheries are soundly designed, does not mitigate for lost habitat, and the reliance on captive broodstock assumes and requires solutions to habitat problems to increase adult survival. Overall, only a bare minimum was presented in this umbrella; in the future, more detail on rationale for the overall efforts and on their integration would be particularly helpful.

ProjectID: 20556

**Grande Ronde Endemic Spring Chinook Supplementation Program
Umbrella**

Short Description: Implement supplementation program and associated monitoring and evaluation for endemic spring chinook salmon in Catherine Creek and the upper Grande Ronde and Lostine rivers through captive brood and conventional production.

**ISRP Recommendation - na / CBFWA Tier / ISRP Comparison with CBFWA:
Umbrella Proposal**

Sponsor Funding Request = \$ / CBFWA Funding Recommendation =

Recommendation:

NA - Umbrella Proposal

Comments:

This umbrella proposal describes a comprehensive program to implement a spring chinook salmon supplementation program in the Grande Ronde basin. This plan includes extensive monitoring of fish reared in captive and conventional brood production; however, it did not describe how the components of the umbrella fit together or give a time line for the actions.. This proposal highlights a shift in the chinook salmon program in the Grande Ronde River away from mitigation and toward conservation. Despite the acknowledgment that overharvest and habitat degradation associated with dam construction and operation, timber harvest, agriculture, and urban development have played a major role in the observed declines in spring chinook salmon abundance and distribution, there is no strong integrated habitat protection and enhancement component under this umbrella proposal. Otherwise the umbrella provided background and justification for the program, with numerous references, and gave a good description of the relationship of this program to overall Fish and Wildlife Program goals and recommendations.

The use of captive broodstock raises specific concerns; its value seems to be overstated, and its risks understated. The approach is in effect a placebo, as it does not address the factors that are causing fish stocks to be at very low densities. The proposal needs to develop a rationale and plan for how captive broodstock programs fit into overall current recovery efforts, dam configurations, ecosystem health, etc. The reliance on captive broodstock to preserve populations can be regarded only as a short-term and temporary solution to the threat of extinction. Captive broodstock programs offer many threats, including domestication, poor breeding success or survival, and increased disease sensitivity. They also are extremely costly and seem intractable as a tool for preserving all or even many Basin populations. Additionally, it would be hard to imagine species with more complicated life histories, more difficult to replicate in culture, than anadromous Pacific salmon. To retain these animals in culture is surely to alter selective pressures and lose both environmentally and genetically based traits of wild fish, no matter how much hatcheries become more natural. It is quite possible that small wild populations are more viable in the wild than are the captive brood they may produce after capture.. Recent studies and reviews in conservation biology are recommending captive broodstock be a last-resort strategy and be preceded by careful field studies, a determination that other preferable alternatives are not available, and clear demonstration

that captive breeding is necessary for short-term survival. The proposals covered by this umbrella acknowledge that threats to adult survival, particularly habitat and passage, must be solved for the broodstock programs to be effective in fish recovery. To fund these programs without concomitant emphasis on solving the root problems seems financially foolish and futile. Additionally, reviewers wondered whether it might not be a good idea to develop preserved genomes now, using cryopreservation perhaps, for populations that are not yet critically low. Collection from such populations might not have the same potential for damage and could result in better preservation of genetic diversity. Any such alternative to captive broodstock techniques would entail the same reliance on habitat restoration.

ProjectID: 9800702

Grande Ronde Supplementation - O&M/M&E - Nez Perce Tribe Lostine

Nez Perce Tribe

Short Description: Operate adult trapping and juvenile acclimation facilities in the Lostine River to implement the Grande Ronde Endemic Spring Chinook Supplementation Program. Monitor and evaluate the Supplementation Program and provide basis for assessment.

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$430,929 / CBFWA Funding Recommendation = \$384,800

Recommendation:

Fund. The Grande Ronde supplementation program is a reasonable project and is recommended for funding. However, the program should be subject to annual review, with an in-depth evaluation of year-to-year results. This project should submit annual proposals that summarize results and interpretation through the period of initial release and return of hatchery fish. Additionally, future proposals should address comments below.

Comments:

This is a comprehensive proposal that incorporates a strong monitoring and evaluation component. If a supplementation program is to exist, then certainly data need to be taken on its effects and effectiveness; the data to be gathered by this project are a part of those needed data. In 1999, the first 12,000 conventional brood smolt are anticipated to be released in the study area. In 2000, the first F1 captive brood fish will be released. This proposal is to provide life-history, genetics, population, and environmental data for both wild and hatchery fish. The project also has collected baseline (pre-supplementation) data, apparently for 2 years. The fish stocks to be conserved by captive and conventional brood are in jeopardy, and attention has been given to not harvesting all wild fish for hatchery use (e.g., the discussion of a sliding scale method, which should be more thoroughly explained and discussed).

Even though many of the sections of the proposal are very well done, some of it is less than adequate. Essential information on the analytical methods is lacking. The objectives have a hypothetical underpinning, but the proposal lacks detail about how hypotheses will be tested, levels of confidence, etc. The objectives (e.g., operate fish trap, coordinate/develop GRESP, etc) are not biological goals, they simply state tasks that might address biological goals. The collection of habitat data is limited to temperature and discharge information at trap sites. Although smolt-to-adult survival has continued to decline, there is no apparent effort to investigate or link habitat characteristics to adult returns. The proposal does not demonstrate strong skills in quantitative analysis in the person responsible for data analysis.

The proposers appear to embrace improved hatchery technologies, but do not question the role of hatcheries in recovery efforts. [See programmatic comments on artificial production and captive broodstock.] All of the GRESP and other captive broodstock and conservation-related hatchery proposals note that there are risks in captive broodstock

technology/intervention, but they seem to understate the risks. In fact, fish may be more likely to go extinct (from disease or catastrophe) in captivity than in the wild, and hatchery fish are expected to be at least somewhat domesticated, decreasing their fitness in the wild. Hatcheries are taking many actions to offset these risks, but they cannot be entirely removed. Additionally, the financial costs of captive hatchery technology are large and it is unlikely that this technology could be implemented for all of the many local stocks that are or are likely to be in danger of extinction. These programs should not be expanded without clear appreciation of their risk, of the temporary nature of their value. A general problem of the GRESP is that (as most proposals acknowledge) smolt to adult survival must be increased greatly for GRESP to be effective in restoring fish. Thus, these proposals tend to treat symptoms, not the root problem.

Reviewers provided several more specific comments:

Objective 3 - Why would migration not be impeded by a weir (so, what will be monitored?). The same applied to steelhead and bull trout, unless they are small enough to pass through the pickets, but Objective 4 anticipates capturing both species.

Objective 4 - They plan to monitor genetic and life history diversity prior to supplementation, and in the Abstract they say that the first artificially produced chinook will be released in 1999. But in the methods they say that they will determine hatchery to wild fish ratios. Doesn't this imply that there already has been supplementation? They say they will collect and analyze baseline information, but in the methods section, all they say is what information they will collect - nothing is said about how the data will be analyzed. Thus, it is hard to know on what basis they will reject or support their hypotheses.

Objective 6 - similar problem. How are they actually going to determine smolt survival and influence of size on survival? There is no information beyond the statement that it will be done. Unfortunately, this is not very helpful.

ProjectID: 9800703

**Facility O&M And Program M&E For Grande Ronde Spring Chinook Salmon
Confederated Tribes of the Umatilla Indian Reservation**

Short Description: Develop, implement, and evaluate integrated conventional and captive brood hatchery projects to prevent extinction, and stabilize populations of threatened spring chinook salmon populations in the Grande Ronde River.

ISRP Recommendation - Delay Funding / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-until corrected

Sponsor Funding Request = \$597,516 / CBFWA Funding Recommendation = \$489,000

Recommendation:

Delay funding until the sponsors provide detail on the data collection and statistical methods to analyze the data. Also, the travel budget needs to be reviewed and justified before funding. As noted for 9800702, the proposers need to report annually on their results.

Comments:

This proposal is for operation and maintenance associated with the spring chinook salmon supplementation program in the Grande Ronde River. This proposal gives testable hypotheses and evaluation targets. It demonstrates understanding of the issues of supplementation - i.e., captive and conventional approaches, the reasons for each, and the use of a sliding scale to apportion each method. The project does not have a specific habitat component, but it is linked to habitat programs that are being implemented by the co-managers.

The hypotheses are numerous and provide a framework for evaluating aspects of the project, however, there is no explanation of how these hypotheses will be tested. For instance, what statistical tests will be used to determine if sample sizes are adequate, which tests will be used to do the comparisons, and what will be the basis for rejecting hypotheses. Experimental methods also are vague. For instance, why feed maintenance rations rather than growth rations? Effluent will be tested, but how and for what? How will effects of weirs on migration be estimated? The sampling design for spawning ground surveys is not given: is it to be a complete survey or a stratified design? If stratified, how? How will stream temperature and flow be monitored? The project is listed as I&M, but it also includes a component that is apparently R&M. The R&M portion of the proposal is weak. The proposal lacks detail on the statistical aspect of monitoring and evaluation. Adaptive management is integrated among the program co-managers, but the proposal lacks information on how the knowledge gained from monitoring will be used to adjust and improve operations. The proposers should closely review the other supplementation projects that they acknowledge are not successful.

The proposal suggests some problems of coordination that should be improved. First, to which umbrella does this project belong? The proposal says 20556, but 20556 does not list this proposal, while 20531 does. Also, both this project and 9800702 take responsibility for capturing the 27 adult fish from the Lostine River in 1997. These proposers said they kept 6 for spawning; the other group said they kept 7. Also, the proposal mentions bull trout and steelhead in passing. Isn't there more of an opportunity to do something useful with these species as part of a project like this. For instance, how many get captured in the weirs; what kinds of information might be obtained from them; what of possibilities for collaboration with others working specifically on bull trout and steelhead? There should be a coordinated effort to standardize the collection of data across species.

This and other related proposals acknowledge that threats to adult survival, particularly habitat and passage, must be solved for the broodstock programs to be a successful conservation or recovery strategy. To fund these hatcheries without concomitant emphasis of solving the root problems seems financially foolish and futile. The reliance on captive broodstock to preserve ESU's can be regarded only as a short-term and temporary solution to the threat of extinction of these salmon stocks. Captive broodstock programs offer many risks, including domestication, poor breeding success or survival, and increased disease sensitivity. The approach also is costly and is probably intractable as a tool for preserving all Basin ESU's. It would be hard to imagine a species with a more complicated life history, one more difficult to replicate in culture, than those of

anadromous Pacific salmon. To retain these animals in culture is likely to alter selective pressures and to lose some of the coadapted genomes of wild fish, no matter how much hatcheries become more natural. It is quite possible that small wild populations are more viable in the wild than they would be as captive brood taken from the wild. Recent studies and reviews in conservation biology are recommending that captive broodstock be a last-resort strategy and that they follow only after careful field studies and a determination that preferable alternatives are not available and that captive breeding is necessary for short-term survival.

ProjectID: 9801001

Grande Ronde Basin Spring Chinook Captive Broodstock Program

Oregon Department of Fish and Wildlife

Short Description: Implement captive broodstock programs and associated research, monitoring, evaluation, and fish health for spring chinook salmon populations in Catherine Creek, upper Grande Ronde and Lostine rivers, to conserve genetic diversity and assist in recovery.

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$646,097 / CBFWA Funding Recommendation = \$616,097

Recommendation:

Fund. See proposals 9800702, 9800703 and 9801006.

Comments:

This proposal is from ODFW to continue the implementation and evaluation of the captive broodstock program for spring chinook in the Grande Ronde basin. It is a focused proposal with a good description of the experimental protocol and the reasoning behind it. This project is listed under implementation, but it appears to be more closely associated with research and monitoring. This is a very comprehensive monitoring program that will assess how different hatchery and broodstock protocols affect survival to spawning. Monitoring of disease and infectious agents in the hatchery and of effectiveness of therapeutic treatments are important components of the program. The program includes data that will be needed to evaluate the spring chinook program in the Grande Ronde Basin.

The proposal also has some weaknesses. The objectives listed on page 16 are more tasks than objectives; the objectives listed in the abstract are better. The project would be strengthened by more direct reference to these objectives and the desired outcomes they represent, rather than to “process.” The methods are reasonable, but statistical protocols are not given.

In addition, the ISRP noted that the reliance on captive broodstock to preserve stock can be regarded only as a short-term and temporary solution to the threat of extinction of these salmon stocks. Captive broodstock programs offer many threats, including domestication, poor breeding success or survival, increased disease sensitivity. It also is extremely costly and seems intractable as a tool for preserving all Basin strains. It would be hard to imagine a species with a more complicated life history, one more difficult to

replicate in culture, than those of anadromous Pacific salmon. To retain these animals in culture is likely to alter selective pressures and to lose some of the coadapted genomes of wild fish, no matter how much hatcheries become more natural. It is quite possible that small wild populations are more viable in the wild than they would be as captive brood taken from the wild. Recent studies and reviews in conservation biology are recommending that captive broodstock be a last-resort strategy and that they follow only after careful field studies and a determination that preferable alternatives are not available and that captive breeding is necessary for short-term survival. Even though the proposal acknowledges that threats to adult survival, particularly habitat and passage, must be solved for the broodstock programs to be successful conservation or mitigation tools, to fund these captive broodstock programs without concomitant emphasis on solving the root problems seems financially foolish and futile.

ProjectID: 9801006

Captive Broodstock Artificial Propagation

Nez Perce Tribal Fisheries/Watershed Program

Short Description: Implement the captive broodstock project through the collection of juvenile salmon from the wild and maintaining them in captivity. The founding generation is spawned at maturity and the resulting F1 generation is released back to the parental stream.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$146,031 / CBFWA Funding Recommendation = \$131,031

Recommendation:

Fund for one year as part of the Grande Ronde spring chinook supplementation and conservation experimental program. Subsequent funding contingent on the project actively reporting data and undergoing annual review with in-depth evaluation of year-to-year results. The proposers do not adequately address the risks inherent in captive broodstock (see comments for related proposals 20056, 9800702, 9800703).

Comments:

This is proposal associated with the spring chinook salmon supplementation program in the Grande Ronde was well written but has some shortcomings. Monitoring and evaluation are integral to the project. However freshwater habitat and marine conditions are completely ignored as variables that influence abundance of salmon in the basin. Information concerning the project history is limited to the number of fish incorporated into the captive brood stock and the amount of money spent for monitoring and evaluation, but no data were presented to summarize the results of the program and variations among the three source areas used to collect brood stock. No statistical design was provided for most of the testing of hypotheses. No criteria are provided for evaluation of the results. Proposers should carefully consider and address whether the hatchery practices would select for any particular traits, as conservation of genotypic and phenotypic variation is their goal. Also, the proposers need to show how they plan to integrate their results into future work. See comments on captive broodstock programs in programmatic section and for related proposals 20056, 9800702, 9800703.

Additionally, this proposal has activities that overlap with those under 9800702. Is there duplication? The 2 proposals should make clear the overlap, the unique and distinct contributions, and the coordination. This project (Objective 3) appears to overlap with 9800703 (Objective 3) in comparing results of treatment of groups at the various facilities. It also overlaps with 9800702 in monitoring adult migration into Lostine River.

ProjectID: 8805301

Northeast Oregon Hatchery Master Plan

Nez Perce Tribe

Short Description: Plan and develop conservation production facilities in the Imnaha and Grande Ronde rivers necessary to implement salmon recovery programs for native, ESA listed, steelhead, spring and fall chinook and reintroduction of coho and sockeye salmon.

ISRP Recommendation - DNF / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-DNF

Sponsor Funding Request = \$1,217,017 / CBFWA Funding Recommendation = \$1,217,017

Recommendation:

Do not fund. This proposal is not scientifically sound and does not offer justification for the belief that building another hatchery in the Columbia Basin would contribute significantly to the restoration of spring chinook salmon.

Comments:

Although this program is funded under the guise of spring chinook restoration, planning and development for coho and sockeye salmon reintroduction and steelhead supplementation are listed as specific objectives of the project. Population declines of chinook salmon are attributed to decreased production resulting from juvenile and adult mortality that occurs at Snake and Columbia mainstem dams and reservoirs; it is unclear how hatchery supplementation will overcome these factors. Without freshwater habitat and marine survival information, it will be difficult to accurately assess the role of supplementation in annual variation in the number of returning salmon. For these reasons, the reviewers judge the proposal to be of questionable benefit to fish.

Overall, this proposal fails to adequately justify its expense. This project is more planning and coordination than construction, though it involves some collection of baseline data. The objective is to plan and build hatcheries, but a more appropriate scientific objective would be to evaluate the roles of various hatchery approaches, or of hatcheries and alternative approaches, or of the relationships of hatcheries and complementary approaches. No such development of rationale is given; there is no justification of projects or construction. The single greatest cost is for designing the facilities. This cost is not justified at all, except that it is a contract to Montgomery and Watson. In view of the existing knowledge of such approaches as NATURES and of the construction of other facilities, this expenditure needs to be defended. The next greatest cost is for NEPA analysis. The proposers say that BPA is the lead on NEPA compliance, so reviewers ask why this project needs to perform NEPA analysis? The third greatest cost is personnel; the large staff is not justified by the proposal.

Reviewers provided some more specific comments and questions about the project: Why might it be a good idea to increase the number of facilities for producing salmon in the region? What are the alternatives to increased facility construction and operation? What are the financial and ecological costs to the various approaches? Even if the Lookingglass hatchery were larger, might there still be a reason to spread the effort over more sites to reduce the possibility of catastrophic loss at a single site from disease or other failure? Are separate incubation and rearing facilities needed for spring chinook and coho because they are in different rivers?

ProjectID: 20512

Grand Ronde River Basin Umbrella

Oregon Department of Fish and Wildlife

Short Description: The management intent for GRR basin involves protecting and enhancing fish and wildlife species, their habitats and watershed health to ensure their persistence. The objectives and strategies to achieve this goal are described in this umbrella proposal.

ISRP Recommendation - na / CBFWA Tier na / ISRP Comparison with CBFWA: Umbrella Proposal

Sponsor Funding Request = \$ / CBFWA Funding Recommendation =

Recommendation:

NA - Umbrella Proposal

Comments:

This umbrella project integrates implementation of captive broodstock programs with research related to life-history strategies and habitat utilized by chinook salmon, summer steelhead, and bull trout in the Grande Ronde River. Restoration and enhancement of instream and riparian habitats is a major component of the project. Research and monitoring represent an integral component of the program. The umbrella encompasses a wide variety of projects, some of which are addressed in other, more focused programs. Several of the individual projects seem to be particularly appropriate for the agency to undertake, particularly the habitat enhancement and land acquisitions. These actions should help to focus the program and perhaps make it more efficient.

ProjectID: 8805305

Northeast Oregon Hatcheries Planning And Implementation - ODFW

Oregon Department of Fish and Wildlife

Short Description: Work with comanagers to develop endemic broodstocks for supplementation of spring chinook salmon in the Grande Ronde basin and continue planning for additional anadromous salmonid enhancement programs in the Grande Ronde, Imnaha, and WallaWalla basins.

ISRP Recommendation - DNF / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-DNF

Sponsor Funding Request = \$660,422 / CBFWA Funding Recommendation = \$226,000

Recommendation:

Do not fund. The proposal is not scientifically sound; it lacks adequate detail on rationale and methods.

Comments:

This proposal is from ODFW to participate in planning and implementation of NEOH, particularly for spring chinook and possibly steelhead, coho, and sockeye. It is stated that planning might also cover species other than chinook; this is disturbingly vague. It would be desirable to have an integrated master plan for all of the species to improve efficiencies and reduce overlap. This would seem to be a role of ODFW.

Although this proposal fits under the umbrella for spring chinook, conversion to endemic summer steelhead broodstocks represents a major component of the project. Monitoring includes assessment of the effects of the program on spawner distribution, survival, and behavior; contribution of hatchery adults to spawning; and progeny-to-parent ratios. Genetic and life-history characteristics of supplemented and non-supplemented populations in the basin and the hatchery will also be evaluated. Assessment of viral, bacterial, fungal, and parasitic agents will occur in natural spawning areas and hatcheries. Additionally, it appears that the proposers are introducing conventional “enhancement” production along with the openly proposed “supplementation.”

The proposal has many weaknesses, failing to provide needed detail and justification for the project. The methods are only superficially described. The methods sections refer to documents that purportedly describe methodologies and justification for activities associated with the program, but details were entirely lacking so quality of the approach could not be assessed. Information on monitoring the project to evaluate its success was vague. What methods and criteria will be used to determine success or failure? The proposal has little detail on either monitoring and evaluation or “adaptive management”. Monitoring components outlined in this proposal should be associated with milestones and summarized in previous accomplishments. The reviewers conclude that the proposal is of questionable benefit to fish.

The budget gives no defense of personnel requirements or capital costs. What will the 4 FTEs be doing? Capital costs “for facilities we expect will be needed” are not justified (the unexplained anticipated need does not provide rationale or justification for such expenditures). Additionally, the supplies budget is large and inadequately justified.

ProjectID: 9202604

Life History Of Spring Chinook Salmon And Summer Steelhead

Oregon Department of Fish and Wildlife

Short Description: Investigate the abundance, migration patterns, survival, and alternate life history

strategies exhibited by spring chinook salmon and summer steelhead from distinct populations in the Grande Ronde and Imnaha River basins.

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$797,616 / CBFWA Funding Recommendation = \$700,000

Recommendation:

Fund. The project has high programmatic value and the proposal is suitable for a multi-year review cycle; ISRP will not need to review it next year.

Comments:

The panel agreed that this is an excellent proposal that provides a comprehensive evaluation of spring chinook salmon and summer steelhead life-history variation in relation to habitat characteristics such as substrate composition, stream depth, water temperature, and discharge. Comparison of techniques for estimating abundance of summer steelhead smolts is included in the project. One value is that they will be able to monitor the effects of hatchery releases on native populations. The data could be extrapolated for more general use. As hatcheries are about to be added in this area, this proposal will provide extremely valuable baseline and continuing data for evaluation and understanding of the experiments and mitigation efforts. Examples of adaptive feedback to management are also a strong point of the project.

The panel had several specific comments and questions: Why is Objective 8 considered “descriptive” and not subject to hypothesis testing? The PIs should justify how much more they need to know and these needs should justify the project’s expense. Why is the habitat work needed, since they say they have already determined that juvenile salmon are most abundant in pools. It would seem that the habitat of the various rivers should be protected and restored in light of the dire situation of the salmon. Since apparently much field work has been done, the data should be analyzed and a report written.

ProjectID: 8402500

Protect And Enhance Anadromous Fish Habitat In Grande Ronde Basin Streams

Oregon Department of Fish and Wildlife

Short Description: Protect and enhance fish habitat in selected streams on private lands in the Grande Ronde Basin to improve instream and riparian habitat diversity, and increase natural production of wild salmonids.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$366,782 / CBFWA Funding Recommendation = \$273,000

Recommendation:

Fund for one year. Subsequent funding contingent on yearly review. The primary weakness is the monitoring and evaluation component of the project, which should be improved in future proposals.

Comments:

This is a generally well-written and comprehensive proposal that integrates riparian area and instream habitat enhancement with specific monitoring and evaluation projects to determine the success of these treatments. Habitat protection is viewed as the most productive method of maintaining quality fish habitat. The proposal is to continue working with private landowners to improve stream habitat by rehabilitating riparian zones and instream activities on Meadow Cr., Hurricane Cr., Whiskey Cr., and Lostine R. The project has been in operation for 15 years. This proposal has a good scientific/technical background and strong ties to regional programs. . Watershed assessment was used to identify areas where habitat improvement was needed. Evaluation is accomplished using photopoint comparisons; water temperature monitoring; stream channel and vegetative response; and biological surveys of terrestrial and aquatic organisms. However, information on the monitoring of progress is vague, e.g., “inventories of nesting birds, fish population estimates” is not very informative. These are good biological endpoints to measure, but the actual changes measured and the specific target objectives should be specified. The proposal presents project history in an evaluative way that is very useful. However, the proposers should provide analysis on why some areas are improving, others static, etc. It would also help to know more about the reason for 15 year leases: will desired results (e.g. mature overstory) be achieved in that time?

Reviewers also offered several more specific questions and comments: Reviewers asked whether there might be a mismatch between priorities for habitat restoration and the money allocation: e.g., only 5% is going to Objective 2, improving instream habitat, and 23% to fences and weeds. Parts of Task d of Objective 4, bird nesting surveys, etc., seem to be beyond the scope of this project and reviewers asked whether these might be more efficiently carried out by a separate group.

Although the proposers caution the reviewers that the project has been criticized in the past for its high cost, one reviewer suggested that the opposite might be the case - that it is underfunded. While the project describes progress over its 15-year course, the achievements should be critically evaluated and presented: Stream habitat is of critical importance to survival and spawning in the regional streams. It would seem that ensuring good habitat is a first step in the process of restoring salmon and other species. Project 9202604 provides information on critical habitat locations that give guidance to this project. Are locations identified by 9202604 ones where they find fish because habitat in those places is relatively good? Maybe places where fish are not found should get more attention.

ProjectID: 9202601
Grande Ronde Model Watershed Program
Grande Ronde Model Watershed Program

Short Description: Continuation of the Grande Ronde Model Watershed Program to coordinate, plan and implement salmonid habitat restoration projects.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$930,000 / CBFWA Funding Recommendation = \$930,000

Recommendation:

Fund for one year. Subsequent funding contingent on a better developed evaluation plan developed. In addition, the project should implement an evaluation procedure for its subbasin-wide impacts; this is only mentioned in the current proposal. The proposal must consider how local priorities match regional priorities and must develop a protocol for integrated monitoring and evaluation among the projects.

Comments:

This proposal requests funding to plan and support the comprehensive Grande Ronde Model Watershed Program and to undertake some specific habitat improvement activities. Leveraging of BPA funds is a strong point, as is the low personnel cost. The proposal suggests a comprehensive approach to habitat rehabilitation, with extensive planning for activities by location. It invokes a science-based methodology for planning and implementation of habitat restoration. Although the project history provides a substantial list of completed projects, the results of post-project monitoring are not provided. This proposal has good detail on the watershed council structure and process, but less detail on methods used and justification for those methods.

The structure of project presents some problems for scientific review. Proponents prepare proposals for individual projects, which requires good-faith understanding that individual projects will be of high quality. Project review is essential, but impossible for a reviewer not intimately familiar with all players to evaluate. There is a similar problem for monitoring. The proposal states that “basin-wide monitoring will facilitate adaptive management” and “project development will use monitoring information to implement those practices”. However, the monitoring procedures, results, and evaluation are not presented for review. More description of (and formal evaluation of) the cumulative effects of all watershed council activities should be given. There needs to be an overall evaluation plan, at the subbasin-wide level. Additionally, more information is needed to evaluate the effectiveness of and rationale for such treatments as noxious weed control and tree density manipulation, which are said to improve upland watershed conditions.

ProjectID: 9608300

Ctuur Grande Ronde Basin Watershed Restoration

Confederated Tribes of the Umatilla Indian Reservation

Short Description: Protect and enhance riparian, floodplain, and instream habitat with particular emphasis on the holding, spawning, and rearing areas of salmonid fishes, thus improving water quality and quantity and promoting natural ecological functions.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$250,000 / CBFWA Funding Recommendation = \$125,000

Recommendation:

Fund for one year. Subsequent funding contingent on clearly justified methods that are presented in more detail..

Comments:

Watershed assessments are used to determine priority subbasins/stream reaches for habitat improvement projects. Results of projects funded in 1997 and 1998 suggest positive effects of these projects. The proposed work appears to coordinate well with 8402500. Monitoring and evaluation activities are conducted on all projects, but the results should be given in more detail. The proposal should report progress toward accomplishment of biological objectives. Also, more details about methods are needed. The descriptions of tasks and of methods used to achieve the objectives are very general. How specifically will these objectives be met, and how will success or failure to meet them be assessed? The budget is inadequately justified and detailed. For instance, what is the travel for? What do the technicians do, since all the major work is contracted? The projects appear to include a lot of hard engineering; this needs to be justified.

ProjectID: 9403900

Wallowa Basin Project Planner

Nez Perce Tribe

Short Description: Act as the liaison between the Nez Perce Tribe and Wallowa County. Help coordinate efforts in Wallowa County between the Tribe, County Court, Grande Ronde Model Watershed Program, local landowners, and state and federal agencies.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fold into other NPT proposals

Sponsor Funding Request = \$58,035 / CBFWA Funding Recommendation = \$55,313

Recommendation:

Fund for one year, but fold into 9702500 (or other proposals for specific projects to be undertaken or overseen by the planner) as an administrative cost of the work. Without association with a proposal for specific work, the quality of the work by the planner/coordinator cannot be evaluated. Future specific proposals should better describe how projects are prioritized for funding and should included more detail on monitoring of specific projects, including both monitoring plans and evaluation of outcomes. Evaluation needs to include evaluation at the watershed- to subbasin-level.

Comments:

This proposal requests funding for a liaison to function as a planner and coordinator for the NPT's involvement in the Wallowa County and Grande Ronde Watershed plans. This proposal is a reasonable description of the need for planning and coordination and of the approach to be taken. Tasks described are reasonable, and some attention is paid to how to measure the impacts of this position would be useful. This proposal is for support for a planning position that is independent of any particular project; it would make more sense to integrate the position into related projects. The proposal makes a good case for the project based on the view that success of many rehabilitation projects depends on the cooperation of landowners. The proposal acknowledges that downstream problems for

salmon may negate the effects of local improvements in habitat quality, but it would seem that rehabilitation of rivers in this watershed is a positive action for wildlife in general. The budget is modest. Although the objectives are reasonable and of value, reviewers noted that the proposer suggests that Objective 6 (improving habitat) will lead to construction of new steelhead and salmon production facilities. The proposal gives no scientific support for the desirability of such follow-up action, which goes well beyond the scope of the proposed work and is not supported by the ISRP at this time.

The panel noted that one cannot evaluate the scientific soundness of work from this proposal alone, so the planner should be funded as part of a proposal for the work to be done. However, the cost is modest, the need for a planner can be accepted, and the following proposal (9702500) is scientifically supportable, justifying the planner to implement it.

ProjectID: 9702500

Implement The Wallowa County/Nez Perce Tribe Salmon Habitat Recovery Plan

Nez Perce Tribe

Short Description: Maintenance and/or restoration of salmon habitat through cooperative and voluntary methods is a stated goal in the Wallowa County/Nez Perce Tribe Salmon Habitat Recovery Plan. Funding of this project will help to implement the Plan.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$50,000 / CBFWA Funding Recommendation = \$20,000
Recommendation:

Fund for one year. Subsequent funding contingent on a significantly improved proposal. Future proposals should develop technical justification for the methods used, should better describe how projects are prioritized and selected, and should develop a better comprehensive evaluation procedure.

Comments:

This proposal requests funds to be used to establish small (<\$2,000) cost-share projects with land owners to protect small parcels of habitat. This proposal is not well organized. This project has strong coordination with other watershed projects and the tasks described are reasonable, but the proposal requires additional information to fully justify its funding, and it would benefit greatly from being rewritten in a concise manner. There is some merit in having contingency funds available for opportunistic projects that benefit fish and wildlife. It might be a good idea to simply implement Objective 2 and then come back with a proposal to specifically address each of the areas identified for action. However, the amount of money requested is small and could be used to capture opportunities that might otherwise disappear if actions were delayed.

ProjectID: 20130

Northeast Oregon Mitigation Trust Fund

Nez Perce Tribe

Short Description: Provide long term funding for the O & M of the NEOR Wildlife Mitigation Project through the use of a Trust Fund. This would assure long term stability of funding in the future.

ISRP Recommendation - DNF / CBFWA Tier 3 / ISRP Comparison with CBFWA: Agree-DNF

Sponsor Funding Request = \$4,500,000 / CBFWA Funding Recommendation = Recommendation:

Do not fund. See 9608000.

Comments:

This project would set up a trust fund to administer operation and maintenance on NEOR wildlife mitigation project over the next 60 years, Project 9608000 would fund one year of administration, operation, and maintenance on the NEOR wildlife mitigation project. Protecting habitats by purchasing land is a worthwhile use of money, particularly in the Pacific Northwest, where so much has been severely degraded. The proposal is weakened because, although there is some description of kinds of activities that would be carried out, there is no scientific information provided to justify specific management actions. Reviewers had special concern about the justification for “noxious” weed programs and fire programs, about development of a long-term management plan as a prerequisite to long-term funding of this project, about whether maintaining access roads and facilities is beneficial for fish and wildlife (the primary goal of this project is to manage the property “for wildlife in perpetuity”), about whether employment of a full time site manager is justified, about the justification for extensive travel.

ProjectID: 9608000

Northeast Oregon Wildlife Mitigation Project

Nez Perce Tribe

Short Description: Provide funding for the Operation & Maintenance activities on 16,500 acres of the NEOR Wildlife Mitigation Project located on the breaks of Joseph and Cottonwood Creeks, tributaries of the Grande Ronde River, in NE Oregon.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-Fund

Sponsor Funding Request = \$235,325 / CBFWA Funding Recommendation = \$235,325

Recommendation:

Fund for one year. This proposal and 20130 are not distinct in scientific content, but rather present alternative particular funding mechanisms. The scientific part of this proposal is supportable for the short-term, as described below, but subsequent funding requires further development and justification of the long-term management and evaluation plan. The trade-offs among and constraints on funding mechanisms are beyond biological review.

Comments:

Project 20130 would set up a trust fund to administer operation and maintenance on NEOR wildlife mitigation project over the next 60 years, this project would fund one year of administration, operation, and maintenance on the NEOR wildlife mitigation project. Protecting habitats by purchasing land is a worthwhile use of money,

particularly in the Pacific Northwest, where so much has been severely degraded. The proposal is weakened because, although there is some description of kinds of activities that would be carried out, there is no scientific information provided to justify specific management actions. Reviewers had special concern about the justification for “noxious” weed programs and fire programs, about development of a long-term management plan as a prerequisite to long-term funding of this project, about whether maintaining access roads and facilities is beneficial for fish and wildlife (the primary goal of this project is to manage the property “for wildlife in perpetuity”), about whether employment of a full time site manager is justified, about the justification for extensive travel. .

ProjectID: 20112

Securing Wildlife Mitigation Sites - Oregon, Wenaha Wma Additions

Oregon Department of Fish and Wildlife

Short Description: Protect and restore grassland, bench, and shrub-steppe habitat values through land acquisition or easement and implementation of enhancement activities.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$142,302 / CBFWA Funding Recommendation = \$42,302

Recommendation:

Fund for one year. Subsequent funding contingent on submission of a detailed and justified management plan. The acquisition portion of the proposal is fundable, but the management plan for operation and maintenance plan is inadequate.

Comments:

This is a well-written proposal that puts the proposed activities in a larger perspective. It coordinates well with other activities and it invokes a systematic approach that includes using evaluation information to improve practice. The work should have broad benefits and appears to be cost-effective, using strategic acquisitions to enlarge an existing WMA. Funds requested in this project would be used to purchase title or conservation easement on land that has previously been identified by GAP analysis techniques as of high-priority for protection and enhancement of wildlife habitat. The proposal includes acquisition of additional land that is adjacent to an existing WMA and will add riverine habitat to it. The value of the acquisition is justified. Remaining funds will be used to develop and implement assessment, restoration, operations and maintenance, and monitoring and evaluation plans, however these plans are not yet well developed or clearly justified. The monitoring plan is particularly vague. What will be monitored and why? What will be the direct wildlife measures?

Proposals for management and monitoring of wildlife mitigation land should be amenable to multiyear funding, but this would require a clear set of biological objectives (with justification), a specific plan for meeting them, and a description of a monitoring and evaluation plan that would allow assessing how well the plan was meeting objectives and whether particular management activities were successful, cost productive, or otherwise justified.

ProjectID: 20114

Securing Wildlife Mitigation Sites - Oregon, Ladd Marsh WMA Additions

Oregon Department of Fish and Wildlife

Short Description: Enhance wetland habitats on lands adjacent to the Ladd Marsh Wildlife Management Area to mitigate for wildlife habitats impacted by the lower four Columbia River hydroprojects.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$360,637 / CBFWA Funding Recommendation = \$144,637

Recommendation:

Fund for one year. Subsequent funding contingent on submission of a detailed and justified management plan. The acquisition portion of the proposal is fundable, but the management plan for operation and maintenance is inadequate. Proposals for management and monitoring of wildlife mitigation land should be amenable to multiyear funding, but this would require a clear set of biological objectives (with justification), a specific plan for meeting them, and a description of a monitoring and evaluation plan that would allow assessing how well the plan was meeting objectives and whether particular management activities were successful, cost-productive, or otherwise justified

Comments:

This proposal is for acquisition of land for wildlife mitigation and for management of the land to benefit wildlife. This is a well-written proposal that puts the proposed activities in a larger perspective. It coordinates well with other activities. It takes a systematic approach and advocates using evaluation to improve practice. This project is similar to the previous (20112), but the target area is the Ladd Marsh WMA. Funds requested in this project would be used to purchase title to a 375-acre parcel of land that has previously been identified by GAP analysis techniques as high-priority for protection and enhancement of wildlife habitat. Remaining funds will be used to develop and implement assessment, restoration, operations and maintenance, and monitoring and evaluation plans for two other previously acquired parcels. The programmatic need for and value of the land acquisition is made clear, but the management plan is not similarly justified. Much of the work is to enhance wetland habitat. . Although much of this proposal is for land management, it cites no land management or restoration literature. Why not remove, rather than alter, agricultural practices? The monitoring plan is not adequate to establish success of the management, nor are clear and measurable objectives of the enhancement/management given. The cost of acquisition is reasonable; one cannot judge whether the cost of O&M is reasonable without better presentation of the work. Proposers demonstrate good collaboration with TNC and good use of Federal Reserve funds.

ProjectID: 20133

Irrigation as a Management Tool for Stream Temperature

Dept. of Rangeland Resources, Oregon State University

Short Description: Cooling water by moving it toward stream beneath the ground. Subterranean irrigation will be used to put water in contact with subsoil.

**ISRP Recommendation - DNF / CBFWA Tier 3 / ISRP Comparison with CBFWA:
Agree-DNF**

**Sponsor Funding Request = \$81,444 / CBFWA Funding Recommendation =
Recommendation:**

Do not fund; not technically justified. The experimental design is inadequate, as is the likely benefit to fish and wildlife.

Comments:

This proposal is to undertake a study of how irrigation practices can affect stream temperatures. Although the proposer classified this proposal as implementation, the ISRP noted that the proposal was primarily for research. The ISRP found the work to be inadequately justified under either implementation or research evaluation criteria. The proposal concerns effects of 2 particular irrigation techniques on water temperature, with studies to be done on one stream, a tributary to Catherine Creek. The long-term objective is to provide a framework for determining the impact of flood and subterranean irrigation practices on stream temperature, but the experimental design lacks detail and appears to be inadequate. Apparently the experimental site was selected because it would allow experimental manipulation of irrigation regimes. The site has not been irrigated for 25 years, but has head ditches and diversion dams. It is unclear, however, if this site is representative of other areas in eastern Oregon. It is reasonable to assume that vegetation has changed during the past 25 years, and that it will be affected substantially by the change back to irrigated pasture. Important information on statistical design and analysis is lacking. It is also difficult to determine if sample size for instream temperature monitoring sites and access wells is adequate to detect statistically significant differences in water temperature. Further, it is unclear whether these would be biologically significant. Too little information is provided to evaluate the likely success of the project. E.g., what is the stream flow and temperature and what is the volume of the irrigation flow? How cold would a volume of irrigation water need to be to depress the temperature of a volume of stream water 1 degree? Furthermore, the argument that BPA should fund this work is weak: How is Objective 4 relevant to the FWP or of benefit to Fish and Wildlife? The references are virtually all by the project's PI and few are peer-reviewed, so they contribute to establishing his credentials but do not establish a broader regard for or interest in the work or that the methods are generally accepted.

ProjectID: 20129

Dworshak Mitigation Cultural Resource Survey Project

Nez Perce Tribe

Short Description: Provide funding for cultural resource surveys on lands bought by the NPT to fulfill its obligations under the Dworshak Mitigation Agreement. Funds were not provided by BPA under the agreement to cover cultural resource surveys in the future.

ISRP Recommendation - na / CBFWA Tier 3 / ISRP Comparison with CBFWA: na Sponsor Funding Request = \$45,000 / CBFWA Funding Recommendation = Recommendation:

Defer decision to BPA (no scientific recommendation). The issue of responsibility of BPA or NPT for cultural resource surveys, and how it depends on the history of funding in this particular case, are administrative, not scientific, issues. These are not amenable to scientific review.

Comments:

This proposal lacks adequate description of activities to be conducted. A cultural resource survey may well be needed, but more information is needed on what cultural resources are at stake, how they are surveyed, and what happens with the information from the survey. There is not enough information presented to determine how the cultural resource survey would be conducted and if it would follow established survey protocols. Cultural resource surveys will be supervised by the tribe archaeologist, but the target species listed are birds and mammals. Are birds and mammals a problem? Reviewers cannot tell from the proposal whether Kronemann is an archaeologist.

ProjectID: 20532

Multi-Year Imnaha Anadromous Fish Plan

Columbia Basin Fish & Wildlife Authority

Short Description:

ISRP Recommendation - na / CBFWA Tier na / ISRP Comparison with CBFWA: Umbrella Proposal

Sponsor Funding Request = \$ / CBFWA Funding Recommendation =

Recommendation:

NA - Umbrella Proposal

Comments:

The umbrella proposal gives little information to help reviewers understand the program it represents. It is impossible to evaluate the scientific merits of this project without more information to support the basic assumptions and assertions. There is no technical or scientific background section and the proposers have poorly defended the need for the project. The proposal gives little evidence that the Imnaha was ever important to anadromous fish, and no evidence that it is important to other species. It also provides no evidence that its ability to support wildlife has been compromised. The proposal states that activities in the subbasin “are not thought to be major limiting factors on fish production.”

ProjectID: 8712703

Imnaha River Smolt Monitoring Program Project

Nez Perce Tribal Fisheries/Watershed Program

Short Description: Operate smolt traps to provide the Fish Passage Center with information and indices on spring emigration timing, estimated survival, smolt performance and health of wild and hatchery salmonid smolts from the Imnaha River to Snake and Columbia River dams.

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$188,722 / CBFWA Funding Recommendation = \$188,722

Recommendation:

Fund. The ISRP found this proposal to be suitable for a multi-year review cycle. However, the proposal referred to an opportunity to transform the current trapping facilities into more permanent ones; this idea was not developed and should not be implemented without a direct proposal including adequate explanation and justification.

Comments:

This proposal is for needed and valuable quantitative research on the natural history of hatchery-produced and wild salmonid smolts, focusing on steelhead. This is a well-constructed proposal to investigate a question of high potential benefit. It is coordinated well with other projects and provides a good scientific/technical background, although there needs to be more information on how data are used to operate dams.

Methods and investigators appear to be competent. This project will provide valuable information concerning timing of spring emigration, estimated survival, smolt performance, and health of wild and hatchery salmonid smolts from the Imnaha River to Snake and Columbia River Dams. The project has been ongoing for five years, and all tasks have been completed and summarized in published (or recent draft) reports. Future submissions should report summary and highlight information that has been gained from the work so that its productivity, reliability and success can be better judged. It is important for reviewers to understand the quantitative results obtained, how variable they are, and how they have been interpreted and used. Sampling protocols are tied directly to specific objectives and substantial effort is expended to reduce stress on all fish, especially wild chinook salmon.

The ISRP noted that the work appears to be of general interest and value. Data from this project should be especially valuable because it can be used to evaluate the effectiveness of the hatchery program for supplementing wild runs of anadromous salmonids.

Additionally, the program provides timely information for assessment of in-season water budgets, evaluation of spill requests, and monitoring of fish health. The ISRP encourages the investigators to more publication of results in open, peer-reviewed literature.

Reviewers provided some specific questions and comments, as follows: Objective 1 - how variable is the timing of smolt migration between years? Is it necessary to monitor it each year in order to adjust water budgets and accommodate spill requests? Do smolts arrive en masse at dams, or are they spread out over a long reach of the river and take longer to pass? This must have implications on the effectiveness of water management. What is the range of variability in the other parameters that have been measured all these years (Objectives 1-3)? E.g., in 4 years survival of natural steelhead smolts ranged

between 71% to 93%. Are there any statistically or biologically significant differences between any of the estimates?

Upper Snake

ProjectID: 20135

Consumptive Sturgeon Fishery-Hells Canyon And Oxbow Reservoirs

Nez Perce Tribe

Short Description: Provide fishery opportunities for white sturgeon in Oxbow and Hells Canyon reservoirs to mitigate for loss of white sturgeon fisheries in Columbia and Snake River basins due to hydropower development and operations.

ISRP Recommendation - DNF / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-DNF

Sponsor Funding Request = \$250,000 / CBFWA Funding Recommendation = \$250,000

Recommendation:

Do not fund. This proposal is not scientifically sound.

Comments:

Justification of this project is predicated solely on mitigation. It seeks to evaluate the potential for a fishery by simply beginning to introduce and harvest fish. The proposal asserts that there will be virtually no impact to naturally spawning populations, but no data are given to justify the claim. The proposal further asserts that natural spawning of sturgeon is limited by reservoir conditions, but that conditions are suitable for rearing; again, no data are cited to support this claim. The proposal cites project 8605000 as a cooperative effort to evaluate sturgeon status and to provide plans for enhancement and restoration. This project must have abundant data by now, but none are described. The proposal identifies what is to be done, but does a poor job of justifying the work and is often confusing in presentation. For example, hypotheses listed on page 7 are different from those listed on pages 10-12. The proposal lacks description of how hypotheses will be tested. The goal of harvest of 250 white sturgeon is not ecologically explained or justified, nor is the stocking rate that is intended to achieve it. The proposed project would add 900 fish before developing a management plan. There should be at least a tentative management plan before stocking fish. Additionally, the stock source for the sturgeon is not identified. The proposal states that stocking densities are low relative to historical levels, but does not explain how low or explain how stocking density would relate to current reservoir conditions or other fish populations.

There is no description of alternative ways to solve the problem of lost fish harvest nor is there a discussion of dangerous or unwanted side-effects of the project. Previous experience with other species in the Columbia River basin would suggest that this type of program rarely justifies expense and is often associated with unexpected and unwanted side effects. The authors state that development of alternative white sturgeon fishing opportunities through augmentation may reduce the pressures on impacted populations, but they do not provide any support for this assumption. There are numerous examples with salmonids that suggest it is not always the case, and considering that angling pressure for sturgeon is already increasing, it may actually accelerate the expanding

interest in sturgeon fishing. Frequently, as anglers become more reliant on hatchery production, they have less interest in protecting wild fish. Furthermore, once a fishery based on hatchery fish is developed, it is very difficult to shut it down if negative effects are detected; again, there are numerous examples with salmonids. Rather than focusing on mitigation, efforts to restore wild populations of wild sturgeon in the Upper Snake River should be expanded. If this work is done, many of the scenarios listed as assumptions should be recast as hypotheses and tested (e.g., emigration out of the reservoirs will be minimal and will not pose a risk to natural spawning sturgeon populations). The proposal is poorly referenced, and no description is given of what skills and experience personnel will be expected to have.

Reviewers asked several specific questions: What will be the objectives of the management plan? Why will augmentation begin before the plan is reviewed and approved? How can release of fish in the summer of 1999 follow the recommendations of the plan if the plan is not approved? How will post-release monitoring and evaluation (p.10) be conducted?

The CBFWA evaluation concluded that “There are no specific biological objectives.” It is unclear that this project would have benefits to fish or wildlife, and potential effects on other fish are not adequately described or addressed.

ProjectID: 9201000

Habitat Restoration/Enhancement Fort Hall Reservation

Shoshone-Bannock Tribes

Short Description: Provide conditions to maintain a self-perpetuating tribal subsistence and trophy trout fishery through implementation of habitat restoration, enhancement, and protection activities on the Fort Hall Reservation.

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$132,821 / CBFWA Funding Recommendation = \$132,821

Recommendation:

Fund. The ISRP recommends this proposal for a multi-year review cycle, review again at mid-point, perhaps 2002.

Comments:

The goals of this project are to restore, protect, and enhance streams so that they may support native salmonid populations at historic levels. Overall, this was a well-written proposal that met the evaluation criteria well. Habitat protection and enhancement are cost-effective approaches to assuring persistence of native species. The land addressed provides habitat for wildlife as well, particularly birds. Presentation of quantified results to date is useful and gives confidence that the on-going work is achieving desired results. The proposal notes direct improvements due to past activities: 5-fold increase in fish density in one creek, increased spawning grovels and stream depth, and stabilization of eroded riparian areas. This project seems to be producing successful habitat improvements and direct benefits to fish, and some casting of the work in an experimental framework (e.g., treated and untreated streams or reaches) and publication of results is desirable. Future proposals should continue to report detailed results of past work. The proposal also is supported well by citations of published research.

Reviewers had several other comments and questions: The authors should quantify “historic levels” of Yellowstone cutthroat trout so that a restoration target is identified. How is the effect of water management (that previously affected habitat) being controlled? What is meant by “optimizing” management of land and water use? What factors are considered in optimization decisions?

ProjectID: 9500600

Shoshone-Bannock/Shoshone Paiute Joint Culture Facility

Shoshone-Bannock Tribes

Short Description: Planning, development, and operation of a hatchery facility to provide native trout for re-introduction of stocks affected by hybridization, habitat loss, and exploitation on the Duck Valley and Fort Hall Reservations

ISRP Recommendation - Fund in Part / CBFWA Tier 1 / ISRP Comparison with CBFWA: Partially agree-fund in part

Sponsor Funding Request = \$282,621 / CBFWA Funding Recommendation = \$282,621

Recommendation:

Fund in part. The ISRP recommends funding for Objectives 1-4 only. These first four objectives are slated for completion in June of 2001. These objectives provide valuable survey work on native fishes and the habitats that support them. These objectives could be folded into 9200100, which contains related habitat restoration efforts; the name of project 9200100 also better describes this work. Objectives (5 – 8) should not be funded without a more scientifically sound approach to establishing the need for and feasibility of a hatchery component. The ISRP does not support the hatchery development and fish-stocking portions of the proposal. If a hatchery is supported at all, it should focus on the possibility of using Yellowstone cutthroat or other native species. Nevertheless, the hatchery effort is premature.

Comments:

This proposal includes two hatchery efforts, one of which might eventually be supportable and one of which is highly unlikely to be a biologically sound program. The first involves production of native cutthroat to foster reintroduction of the species. This could be desirable, though taking of small populations for hatchery broodstock can be a dangerous strategy and the risk may not be warranted. The second, and clearly unsupportable, involves production of domestic rainbow trout, which are one of the causes of problems for the cutthroat that the first hatchery effort is proposed to address.

The first component of the work includes a valuable survey of existing cutthroat stocks on Fort Hall, as well as redband trout on the Duck Valley Reservation. A hatchery may not be needed at all, and may not be effective, given that habitat rehabilitation is likely to allow cutthroat trout to increase in abundance and that there are significant risks to cutthroat of rainbow introduction and collection from and stocking into small populations of fish. Another objective is habitat improvement, focused on streams with populations of native cutthroat or redband, as well as collection of baseline data on the streams that have supported these populations. Some methods for evaluation are sketchy, for instance, how well creel surveys can be used to establish whether put-and-take fisheries reduce fishing pressure on native stocks or whether stocking is successful (which presumably includes no escapement of stocked fish). The proposal needs more clarification regarding interaction with the 9200100 on site selection, stream repair, and budget items, anyway. It's not clear in the project objectives how coordination takes place. It would be useful to cast the survey work in an explicit comparative and hypothesis-testing framework. Can desirable stream conditions for the fish be identified from where they have thrived or maintained themselves? Can the most effective or economical remediation be identified

by careful assignment of treatments to streams and reaches which are monitored for comparison to control streams? Objectives 1-4, for 1999-2001, are biologically supportable and likely to benefit fish and wildlife.

The broodstock and hatchery production programs (Objectives 5-8) are not warranted for funding. Reviewers doubt, for instance, that the authors can demonstrate that the put-and-take fisheries will relieve pressure on native populations and that the stocked fish can be kept from escaping. The ISRP was concerned that this component of the project will not accomplish the stated objectives. Establishing a put-and-take fishery for rainbow trout does not increase the probability of persistence of native Yellowstone cutthroat trout. Providing a substitute for native fishes may actually reduce support for assuring their persistence. Neither redband nor “domestic” rainbow trout were native to the Upper Snake River, and they should not be introduced anywhere above Shoshone Falls. If mitigation were deemed essential in the Upper Snake River, then all put-and-take fisheries should be supported by hatchery populations of native cutthroat trout. Additionally, any “domestic” hatchery strain of Yellowstone cutthroat trout used for the purpose of reestablishing wild populations should be associated with a rigorous genetic monitoring and maintenance program. A less expensive alternative would be to obtain gametes from genetically-pure wild native populations that are found in watersheds with characteristics similar to those of the habitat that will be the focus of reintroduction efforts.

ProjectID: 9505700

Southern Idaho Wildlife Mitigation

Idaho Department of Fish and Game AND Shoshone-Bannock Tribes
Short Description: Protect, enhance, and maintain wildlife habitats to mitigate construction losses (a total of 54,292 HU) for Palisades, Anderson Ranch, Black Canyon, and Minidoka hydroelectric projects as described in Section 11 of the FWP. This project has been ongoing

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$4,334,510 / CBFWA Funding Recommendation = \$1,153,964

Recommendation:

Fund for 1 year. Subsequent funding contingent on submission of a proposal that includes detailed monitoring plans and evidence of outcomes assessment and achievement.

Comments:

This appears to be a successful habitat mitigation program that fits most of the proposal evaluation criteria. The proposed land purchase is well justified and should benefit a variety of fish and wildlife. However the management plan and the monitoring and evaluation component are not well developed. A clear management plan needs to be developed. Reasons for continuing enhancement should be given. Are these directly beneficial to wildlife? Enhancement and other management activities are the long-term costs of the project. They are substantial, and they should be clearly justified as needed and should not inhibit development of a self-sustaining system. Data supporting the long-

term benefits of particular plantings, weed control, etc., should be taken and presented. Such techniques as large-scale spraying and removal of Russian olives require explanation. There are likely ecosystem-level effects of these activities, and they likely would create conditions favorable to weedy growth. If such large-scale, hard restoration is done, then it should be done under an experimental design that will allow clear evaluation of effectiveness and costs/benefits of the removal and of the techniques used. The monitoring and evaluation plans lack detail. What populations will be monitored? Will a survey design be used that could detect value of enhancements or other active management techniques versus passive restoration? What does it mean to manage for maximum benefit to wildlife? Objective 4 of this proposal refers to monitoring in perpetuity to “maximize benefit to wildlife.” But “maximum benefit” is not defined, nor are measurements for monitoring and evaluating it specified. It is also not clear why 11 more years are needed to achieve the remaining 25% HUs. It would be helpful to keep active reference to the final objective: “achieve and sustain levels of habitat and species productivity” and to try to develop quantified indicators of this productivity. How else will success be evaluated?

ProjectID: 9106700

Idaho Water Rental: Resident Fish And Wildlife Impacts - Phase III

Idaho Department of Fish and Game

Short Description: Quantify changes in resident fish habitat in the upper Snake River basin resulting from the release of 427,000 acre-feet of water for anadromous fish flow augmentation. Recommend release strategies to benefit weak, native resident fish populations.

ISRP Recommendation - DNF / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-DNF

Sponsor Funding Request = \$119,465 / CBFWA Funding Recommendation = \$119,465

Recommendation:

Do not fund; this proposal is not scientifically justified as sound. It addresses an important problem that deserves analysis, but the proposal does not provide an adequate framework to address the problem.

Comments:

This proposal suggests a means to evaluate the influence of flow augmentation on weak populations of potamodromous fishes. The proposal has numerous deficiencies. The objective schedule table lists no measurable biological objectives. The results of the study to date are not clearly described. The proposal gives some informative background, but should take the approach of testing whether returning to a more natural hydrograph will significantly improve conditions. The proposal has several “belief” statements that should be recast as testable hypotheses. Release strategies have been recommended but the nature of the data to date that support them is not given. How well supported are these recommendations and how effective have they been in achieving goals? In Phase III (to monitor and evaluate the impacts of flow augmentation releases on resident fish through effects on habitat)

Descriptions of methods are only sketchy and the experimental (sampling) design and analyses/interpretation are unclear. The proposal relies heavily on modeling and physical data, and it would be much stronger if there were provisions to model randomly selected native populations that would be affected by the flow augmentation. Reviewers had some specific questions: Objective 1: wouldn't you also want to assess impacts on fish in addition to impacts on their habitat? The proposal notes information may be made available on IDFG's web site; this is a good idea, but how, specifically, will the project "enable managers to assess the trade-offs between fishes and wildlife affected by upriver reservoir releases and anadromous fish affected by flow augmentation releases"? What specifically does it mean to "maximize benefits" to resident fish? The proposal should clearly lay out the trade-offs it seeks to clarify and resolve.

The CBFWA evaluation noted that "There are no milestones listed." and asked the question, "When is this project going to end?" The ISRP concludes that the proposal is of questionable benefit to fish.

ProjectID: 9800200

Snake River Native Salmonid Assessment

Idaho Department of Fish & Game

Short Description: Investigate population status and trends, life histories, habitat needs, limiting factors, and threats to persistence of native salmonids in the Snake River and tributaries upstream of Hells Canyon Dam in Idaho, and implement recovery/protection plans.

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$225,208 / CBFWA Funding Recommendation = \$225,208

Recommendation:

Fund. The ISRP recommends multiyear funding. ISRP criticisms can be addressed in the contracting process; particularly, assessment of current stock status using presence/absence and abundance should be augmented with population structure information.

Comments:

This is a well-presented proposal for assessing status, trends, life histories, and habitat associations of native salmonids in the Snake River. This information is called for by Council and past scientific reviews, and it is needed to design habitat recovery or protection plans to benefit fish. The proposal describes good basic research directed to restoration and protection of native fish over a large geographic area in southern Idaho. It also includes an attempt to evaluate the effect of brook trout removal in one stream. This sort of small-scale experimental work is needed if removal is to be considered for future implementation. The proposal specifies analyses and ultimate biological goals of the work and it emphasizes watershed function. Bull trout, redband trout, Yellowstone cutthroat trout, and whitefish are target resident species. The PI has a history of publishing experimental work with salmonids. This well-written proposal will provide important information essential for protecting native salmonids in the Snake River and tributaries upstream of Hells Canyon Dam.

Reviewers offered several suggestions to improve the work. Assessment of current stock status using presence/absence and abundance should be augmented with population structure information. The proposal does not explain why mitochondrial DNA testing was selected for use in determining genetic composition of native salmonid populations. Are there other more effective or efficient alternatives? The goal of restoring populations to self-sustaining harvestable levels is vague. Populations can be sustained at many levels; what would be the target level and how will success be measured? Reference points for decline should also be specified. Additionally, the budget is not well-explained, although the amount seems reasonable for the work to be done. It is difficult to determine what is being done this year as compared to outyears. The objectives should more clearly specify targets to assess the success of their project. Objective 5 is a good example of how to incorporate biological measures to an objective. In the future, the project history should show more data, including interpretations of results to date. This project is sufficiently sound for multi-year funding with a review of results and progress to determine future funding after about 5 years.

ProjectID: 20091

Construct Warm Springs Wetland

Southwest Idaho Resource Conservation and Development Council, Inc.

Short Description: Protect the water quality of the Boise River by the development of a wetland to treat urban overland flows through biofiltration and decrease sedimentation. Enhance wildlife habitat with open water and vegetation areas for cover, food and nesting.

ISRP Recommendation - DNF / CBFWA Tier 3 / ISRP Comparison with CBFWA: Agree-DNF

Sponsor Funding Request = \$47,200 / CBFWA Funding Recommendation = Recommendation:

Do not fund. The proposal does not contain adequate information to determine scientific soundness of the approach. The proposal needs a better description of site-specific actions, programmatic justification, and potential negative impacts.

Comments:

This is a relatively inexpensive proposal to implement a constructed wetland to limit urban runoff into the Boise River. The proposers appear to have experience with constructed wetlands, and the work involves input from a coalition of agencies and interests. Water quality is a recognized problem for fish and wildlife, and species to be benefited are identified. This proposal shows strong coordination and tie-in with other efforts, including work-share and cost-share. It is part of a longer term plan that includes monitoring, though who will pay for monitoring is not clear. Cost is low.

The ideas expressed in this proposal are interesting, but the proposal lacks important information in several areas. There is minimal explanation of whether the project employs the best scientific information or how the particular wetland design was chosen. The work is not set in experimental form, but is inexpensive and does have a monitoring plan. This plan should be more clearly developed, along with criteria for evaluating success. Also it seems odd to spray toxins to control weeds when the system is intended as a toxin filter. Weeds should not be a long-term problem if the wetland is well designed and plants are well chosen (which should also be better documented). Reviewers ask are there any likely effects of contaminants on wildlife using the wetland created to treat overland urban water that should be anticipated and avoided? It was not clear why BPA should be responsible for funding this project, which concerns urban non-point-source pollution.

Malheur

ProjectID: 20090

Logan Valley Wildlife Mitigation Project

Burns Paiute Tribe

Short Description: This acquisition will integrate fish and wildlife management practices that restore the associated land and water that is critically important to the persistence of threatened, endangered and sensitive fish, wildlife and plant species.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$2,002,301 / CBFWA Funding Recommendation = Recommendation:

Fund for one year. The ISRP recommends short-term funding for acquisition and further on-ground survey work. Subsequent funding for monitoring and evaluation contingent on development of a clear plan for monitoring and evaluation with criteria to evaluate efforts.

Comments:

Securing suitable habitat for threatened, endangered, and sensitive species is a cost effective and ecologically compatible method of improving the probability of persistence, and this appears to be a reasonable proposal. The acquisition section of the proposal is strong, but the ongoing restoration and monitoring/evaluation are weak. Species to be benefited are identified and the land and its value are clearly described. A variety of valuable natural communities will be protected and the acquisition cost (from TNC) is reasonable. This proposed acquisition offers potentially large benefits of connecting two other wildlife areas. Bull trout and redband trout should benefit in addition to wildlife. The proposal had several important weaknesses. The restrictions under the conservation easement should be better described. The proposal describes M&E to determine if desired results are achieved, but specific desired results are not given. What are they and how exactly will they be evaluated? The emphasis on passive restoration is positive, but there also are vague descriptions of active restoration without clear justification of need, explanation of techniques to be used, or explanation of evaluation procedures and criteria.

ProjectID: 20136

Burns Paiute Mitigation Coordinator

Burns Paiute Tribe

Short Description: Develop wildlife mitigation strategies consisting of selection, scientific analysis, implementation (acquisition, enhancement, etc.), O&M, and evaluation of wildlife Mitigation projects for the Burns Paiute Tribe.

ISRP Recommendation - Fund / CBFWA Tier 3 / ISRP Comparison with CBFWA: Agree-fold into other BPT proposals

Sponsor Funding Request = \$50,494 / CBFWA Funding Recommendation = Recommendation:

Fund, fold into the related Burns Paiute Tribe projects, as an administrative/staffing cost. This proposal requests a reasonable coordination position, but, as a separate proposal, it does not allow for a scientific review. The relationship to the other proposals that describe the actions for which this position is responsible must be made clear. There appears to be no reason to separate this from the other proposals. As the ISRP commented last year, funding for administrative functions should be incorporated in the action proposal.

Comments:

The proposal is included under the Oregon Wildlife Mitigation Umbrella. The employment of a coordinator-planner for the Burns Paiute Tribe is probably justified. However, this proposal cannot be evaluated well for scientific criteria, as it does not include the specific acquisition or OM, ME with which the coordinator will be involved.

However, the Oregon Mitigation proposal is well formulated as to acquisition and the planner is a reasonable position. It appears that the Malheur acquisition is to be supervised by the planner and that proposal is well justified. Budget detail is good.

Reference is made to projects that have been started but not completed. How do these relate to work being proposed? The proposal has a lot of detail on the total effort to secure wildlife mitigation sites but much less on the role and actions of the mitigation coordinator position, for which funding is requested. The specifics of the Burns Paiute activities are hard to discern except in the table of objectives and tasks. This is probably a reasonable proposal, but the specifics are not explained well.

ProjectID: 20137

Acquisition Of Malheur Wildlife Mitigation Site.

Burns Paiute Tribe

Short Description: The project would protect and enhance critical fish and wildlife habitat. The project consist of riparian/riverine that can be restored to its natural state. In many places there are large areas of shrub steppe that can provide significant HU's.

ISRP Recommendation - Delay funding / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-until corrected

Sponsor Funding Request = \$2,030,079 / CBFWA Funding Recommendation = Recommendation:

Delay funding until concerns about value and cost-effectiveness of land acquisition are addressed. Future proposals should better develop and justify management and monitoring and evaluation plans.

Comments:

This proposal suggests that the habitat selected for acquisition and restoration would benefit numerous sensitive species. The land to be purchased includes riverine and riparian as well as sage-steppe and includes water rights, so should benefit fish as well as wildlife. The land is in the same river basin as the Stinkingwater Salmonid project and the redband trout and bull trout life history study. The land to be purchased and rationale for purchase are clearly described. In addition to game species, a number of valuable non-game species are noted as present. The strategy to use HEP in monitoring is a good start, but objectives should be better specified in terms of biological measurements.

Acquisition of the land appears justifiable, but the management plan is not. Several questions should be addressed during contracting for the work: What will be done with the water rights and cattle grazing rights? Who will own the land? Is the cost reasonable for a ranch in poor condition? Do the location and water rights of the land make up for its poor condition?

Further, the OM plan needs much better development and justification. What will happen to the land once acquired? The methods here lack detail. What are the specific management objectives for the land? Will cattle grazing continue? Use of repeated HEPs on baseline areas not directly affected by enhancement activities or maintenance activities is a good idea, as it allows evaluation of naturally occurring trends and

contributes to a design in which effects of enhancement can be evaluated, but the experimental design and evaluation criteria need to be clearly described.

ProjectID: 9701900

Evaluate The Life History Of Native Salmonids In The Malheur Basin

Burns Paiute Tribe - Natural Resource Department

Short Description: Evaluate and determine the life history, distribution, and critical habitats pertaining to populations of redband and bull trout in the Middle Fork Malheur subbasin.

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$201,184 / CBFWA Funding Recommendation = \$201,184

Recommendation:

Fund. The ISRP recommends this project for multiyear funding. This proposal is adequate for its duration through 2003, subject to contractually agreed upon deliverables.

Comments:

This proposal is for research to contribute to understanding the life history and ecology of native resident fish in the Malheur subbasin. The work addresses the need for assessment of resident fish and preservation or recovery of them and it involves a blocked area from which anadromous fish are removed. Overall this proposal suggests an effective strategy for evaluating the life history of native salmonids in the Malheur Basin. Although the project is relatively new, it is ongoing since 1997 and should be able to report some data/results to date. These results of the project should be valuable to the region, and the principal investigators should pursue publishing in a peer-reviewed journal. This proposal has good coordination with agencies and other projects, including incorporation of academic research. It shows evidence of coordinated planning.: the proposal involves good agency cooperation and coordination with habitat preservation and improvements. There is a good relation between objectives and tasks and between methods and findings of earlier studies. Use of technology and budget explanation are good. The information transfer goes beyond “presenting results at meetings” to show how findings will benefit management. There is not a significant description of personnel qualifications.

ProjectID: 9701901

North Fork Malheur River Bull Trout And Redband Life History Study

Burns Paiute Tribe - Natural Resources Department

Short Description: Identify the seasonal distribution and life history characteristics of bull trout and redband trout in the Malheur River Basin through the use of radio telemetry, PIT tags, genetic sampling, spawning surveys, and habitat surveys.

ISRP Recommendation - Fund / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$113,826 / CBFWA Funding Recommendation = \$113,826

Recommendation:

Fund. The project appears to be adequate for multiyear funding for its duration through 2001, subject to contractually agreed upon deliverables.

Comments:

This proposal is for work that will provide important information on the seasonal distribution and life history characteristics of bull trout and redband trout in the Malheur River Basin. This information is critical for the management and protection of these particularly sensitive native salmonids. It is a parallel project to 9701900, and the same comments apply: It shows evidence of coordinated planning. There is a good relation between objectives and tasks and between methods and findings of earlier studies. Good use of technology. Good budget explanation. The information transfer goes beyond “presenting results at meetings” to show how findings will benefit management. This project shows good coordination, cost-sharing and integration with other projects and agencies.

Owyhee

The ISRP has these general comments on the suite of proposals for Duck Valley: The proposals for recovery efforts in the Owyhee subbasin have significantly improved from last year. However, the proposal authors need to better demonstrate systematic development of the program. The proposals do justify the need for one year of funding to develop an integrated plan, as well as specific methods for the individual proposals, but none of the proposals should be funded for more than one or two years until the plans are developed. The budget for administrative costs under the umbrella proposal should be folded into the other projects. The least scientifically sound proposals of the group are the two ongoing projects, 8815600 and 9501500. Those two proposals should not receive long-term funding until they are determined to be scientifically sound and consistent with the approaches described in the other proposals in the subbasin. In particular, the emphasis on use of non-native stocks is problematic, when native stocks, such as redband trout, are available. Specific comments follow.

ProjectID: 20536

Develop Management Plan & Assess Fish & Wildlife - Owyhee Basin, D.V.I. R.

Shoshone-Paiute Tribes of the Duck Valley Indian Reservation

Short Description: Design a comprehensive (umbrella) fish & wildlife management program for the Owyhee River basin within the Duck Valley Indian Reservation - for the cost-effective restoration of its natural ecosystem for the benefit of the Shoshone-Paiute Tribe & society.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 3 / ISRP Comparison with CBFWA: Agree fold into other DVIR proposals

Sponsor Funding Request = \$133,820 / CBFWA Funding Recommendation = Recommendation:

Fund for 1 year (with dollar costs folded into the relevant proposals for specific work, as an administrative cost), during which the initial objectives of planning and testing sampling methods could be done. Subsequent funding to implement the programs could then be evaluated for the scientific quality of the sampling and management schemes, which can not yet be done. A continuation proposal could at that time be expected to

provide solid descriptions and justifications of methods to be used and could give background data such as species lists, abundance, distributions, etc.

Comments:

This umbrella proposal provides background and integration for the several proposals from the DVIR for development of fish and wildlife programs. The plans are at any early stage, and most of the sub-proposals request money for planning, including the incorporation of consultants to aid in development of sampling and other technical plans where expertise is not yet available internally. The proposed work includes surveys of fish and wildlife to establish management needs, habitat enhancement and protection, and some stocking of a particular fishery. The proposals covered by this umbrella are much improved over those submitted last year and the decision to devote time to planning, using consultants to provide needed expertise, is a good one. The umbrella has a good comprehensive overview of the problem but is short on detail as to how it will coordinate the 7 sub-projects, so it is hard to evaluate the likely effectiveness of coordination. The proposal has several shortcomings. It lacked a clear and detailed statement of what will be done, how and when it will be done, what the expected outcomes will be, and how they will be evaluated. However, a year of planning, to develop these details, is justified. Several of the component projects plan to use non-native fishes to support recreational fisheries. This is one of the most significant documented threats to native fishes, especially native salmonids, and this mitigation strategy should not be funded by a program that is attempting to enhance persistence of native species in the Columbia River Basin. If artificial production is necessary to substitute for losses, these projects should focus on the possibility of using native species.

This umbrella proposal has its own budget and the ISRP recommends that this budget be folded into the specific proposals that these administrative functions support, as administrative costs associated with those. Additionally, this proposal has a very large travel budget without a justification for why this much is needed

ProjectID: 20040

Develop A Fish & Wildlife Management Plan For The Owyhee Basin, D.V.I.R.

Shoshone-Paiute Tribes of the Duck Valley Indian Reservation

Short Description: Develop a long-term fish & wildlife strategic plan for the Owyhee Basin, including an annual Shoshone-Paiute implementation plan -- needed to provide an adaptive management framework for all fish, wildlife, and watershed restoration efforts on the DVIR.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 3 / ISRP Comparison with CBFWA: Disagree-fund

Sponsor Funding Request = \$22,411 / CBFWA Funding Recommendation = Recommendation:

Fund for one year during which time the detailed project plan can be developed. Subsequent year funding contingent on a scientifically sound plan.

Comments:

This proposal suggests a large effort for a very small budget. It contains information on the “vision” and conceptual basis of a management plan for the D.V.I.R., but lacks detail on the specific objectives and tasks associated with developing such a plan. The proposed work needs to be much more specific and systematic about the steps of plan development. Who will do it? How will objectives be identified? What evaluation criteria are possible? How will stakeholders participate in plan development? How will it be reviewed? What groups will be involved in implementation, revision, and enforcement? How will they be coordinated? What other consultations will be conducted? This proposal has the same deficiencies noted for the previous proposal (20536), but the plan to proceed with a year of detailed project planning is justified as of value to fish and wildlife.

ProjectID: 20041

Develop A Fish & Wildlife Conservation Law Enforcement Plan, D.V.I.R.

Shoshone-Paiute Tribes of the Duck Valley Indian Reservation

Short Description: Evaluate existing fish & wildlife law enforcement efforts on the DVIR and develop a plan to maximizing the effectiveness of the Shoshone-Paiute Tribes’ natural resource protection; the goal is integrate enforcement with holistic resource management.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 3 / ISRP Comparison with CBFWA: Disagree-fund

Sponsor Funding Request = \$40,872 / CBFWA Funding Recommendation = Recommendation:

Fund for one year during which time the detailed project plan can be developed. Subsequent year funding contingent on a scientifically sound plan.

Comments:

This proposal gives an innovative vision for and approach to integration of law enforcement into a field monitoring program. The focus is on the interception end of enforcement and many details remain to be developed, but the idea has potential value to fish and wildlife. Some justification is given for enhancing natural resource protection for the Duck Valley Indian Reservation, but many details are lacking and it is unclear how this will be accomplished. Reviewers noted several elements that should be considered in

development of a more detailed plan: What about also evaluating penalties or incentives for compliance? How will effectiveness be measured? Details are needed on how the plan will be developed. What criteria for success of tribal rangers will be used? The proposal needs some more systematic thinking about measurable objectives and the ability to evaluate success in meeting those objectives. How valid is the creel survey methodology that has been proposed? There are no literature citations to suggest that the proposed method is valid. How will it be evaluated?

ProjectID: 20092

Inventory Wildlife Species & Populations Of The Owyhee Basin, D.V.I.R

Shoshone-Paiute Tribes of the Duck Valley Indian Reservation

Short Description: Conduct an inventory of all wildlife species present, abundance estimates of bird & mammal populations, and quantification of habitat units on the Duck Valley Indian Reservation -- based on a systematic survey & statistically sound sampling design.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 3 / ISRP Comparison with CBFWA: Disagree-fund

Sponsor Funding Request = \$185,985 / CBFWA Funding Recommendation = Recommendation:

Fund for one year during which time the detailed project plan can be developed. Subsequent year funding contingent on a scientifically sound plan.

Comments:

This proposal is relevant to the management and protection of native species, and is compatible with the goals of the Fish and Wildlife program. It is difficult to evaluate the project design, since that is one of the expected outcomes, and more information is needed on how progress will be evaluated. It is unclear how the inventory will be incorporated into a wildlife mitigation plan. The proposal has a good plan to standardize sampling, establish a baseline, and anticipate future monitoring. Work should address development of strong sampling and monitoring protocols, as well as methods for linking survey and inventory work with long-term management plans.

ProjectID: 20093

Evaluate The Feasibility For Anadromous Fish Reintroduction In The Owyhee

Shoshone-Paiute Tribes of the Duck Valley Indian Reservation

Short Description: Evaluate the feasibility of reintroducing anadromous salmon and steelhead into the Upper Snake River and Owyhee River Basin – above the Hells Canyon Complex – and develop alternatives for utilization of anadromous fishes by the Shoshone-Paiute Tribe.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 3 / ISRP Comparison with CBFWA: Disagree-fund

Sponsor Funding Request = \$56,851 / CBFWA Funding Recommendation = Recommendation:

Fund for one year to develop details of the project. Subsequent funding contingent on proposals that better evaluate and address the many likely barriers to reintroduction of anadromous fishes, and should give far more detail on alternatives to be evaluated, criteria for their evaluation (costs and benefits), etc.

Comments:

This is an interesting proposal that demonstrates creative and innovative thinking. The proposal is justified to take advantage of a window of opportunity. However, the proposal doesn't emphasize evaluation (assess costs and benefits of actions, and evaluate tradeoffs between them). Rather, it suggests the proposers have a desired solution in mind. If a window of opportunity is really limited to the FERC licensing time period, perhaps work could be done to improve this approach, developing a plan to locate, explore, and

evaluate alternatives. There are likely many problems in reestablishing anadromous fishes above the dams, including many aspects of water quality and land use. More information will be needed concerning project monitoring and evaluation of unwanted side-effects for any specific actions involving reintroduction of fishes.

ProjectID: 20094

Assess Resident Fish Stocks Of The Owyhee Basin, D.V.I.R.

Shoshone-Paiute Tribes of the Duck Valley Indian Reservation

Short Description: Conduct a systematic resident fish species inventory & stock assessment in the Owyhee River Basin, DVIR component. Design a sampling strategy and protocol to evaluate the genetic composition / introgression of native trout populations on the DVIR.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 2 / ISRP Comparison with CBFWA: Agree-fund (Tier 1?)

Sponsor Funding Request = \$220,799 / CBFWA Funding Recommendation = \$200,000

Recommendation:

Fund for one year during which time the detailed project plan can be developed.

Subsequent year funding contingent on a scientifically sound plan.

Comments:

This proposal will provide important information on the distribution and abundance of native potamodromous fishes in the Duck Valley Indian Reservation portion of the Owyhee River basin. Information should be collected on all native fishes, not just salmonids. It would be useful to use sampling and assessment methods that are comparable with those used by state agencies, so results can be integrated basin-wide.

ProjectID: 8815600

Implement Fishery Stocking Program Consistent With Native Fish Conservation

Shoshone-Paiute Tribes of the Duck Valley Indian Reservation

Short Description: To enhance fisheries on the DVIR we will stock two reservoirs (closed systems) with rainbow trout. This project will support a sustainable (put-and-take) harvest by Shoshone-Paiute tribal members and non-Indian anglers without impacting native trout.

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$129,903 / CBFWA Funding Recommendation = \$119,903

Recommendation:

Fund for one year, because this project is ongoing. Future funding contingent on a proposal that considers more strongly the advantages of using native, rather than non-native stocks. Non-native fish substitution raises substantial issues that the proposal does not adequately address, specifically whirling disease, competition, and the need for very strong reasons for not using native alternatives. If a put-and-take fishery is needed to replace lost harvest, then it should focus on native stocks rather than domestic stocks of rainbow trout. The current proposal is not biologically supportable, as it is not consistent with the other projects proposed in the subbasin or with other objectives of the FWP.

Comments:

This proposal describes a program to continue a put-and-take fishery in two reservoirs that are considered to be isolated from the Owyhee River. The need for mitigation is justified, but the particular solution proposed is potentially destructive to native fish

populations. The proposal is disjointed and is vague or uninformative about many essential details of methods and monitoring/evaluation. Although there are some safeguards, the risk of releasing non-native salmonids is always possible in this type of program. Additionally, the danger of introducing whirling disease is very high. The probability of unwanted side-effects would decrease substantially if the hatchery population used for this program was initiated from native fishes. The proposal does not specify where stock would come from, whether they would be certified as disease free, or who would bear costs of whirling disease should it be introduced. The monitoring in this proposal is of the success of the fishery, but not of the effect of stocking on redband trout, which is essential to measure if the goal of retaining native fishes is to be met. Fish purchase is not included in the budget.

ProjectID: 9501500

Lake Billy Shaw Operations and Maintenance and Evaluation (O&M, M&E)

Shoshone-Paiute Tribes of the Duck Valley Indian Reservation

Short Description:

ISRP Recommendation - DNF / CBFWA Tier 1 / ISRP Comparison with CBFWA: Disagree-DNF

Sponsor Funding Request = \$221,550 / CBFWA Funding Recommendation = \$221,550

Recommendation:

Do not fund. The proposal is not technically sound and does not offer a sound scientific basis for (or even a clear description of) the work to be done.

Comments:

This proposal lacks explicit support for almost all of the evaluation categories. Undoubtedly, mitigation for the blocked areas needs to be addressed. However, this proposal is lacking in detail necessary to determine scientific soundness. There is little detail on species that will benefit. The project objectives are unclear and do not match the description in the project abstract. No information is provided on what percent of the total work has been done and what is left to do, e.g., fencing, tree planting, etc. The proposal is for work in an apparently open system, but potential impacts of the work are not addressed or even stated. Non-native fish substitution raises substantial issues that the proposal does not adequately address, specifically whirling disease, competition, and alternatives. The proposed project is not consistent with the other projects proposed in the subbasin. Stocking probably should be limited salmonids that are native to the Owyhee River; if not, the Principal Investigators need to clearly and carefully justify their selection of non-native stock. The CBFWA evaluation is basically in agreement with the above noting that "There is no biological objectives listed. I urge that the native species receive top priority in this reservoir. What we stock should be compatible with the native redband." The ISRP concludes that the proposed project is of questionable value to fish and is not based on sound scientific principles.

ProjectID: 9701100

Enhance and protect habitat and riparian areas on the DVIR

Shoshone-Paiute Tribes of the Duck Valley Indian Reservation

Short Description: This project increases critical riparian areas of the Owyhee River and its tributaries as well as preserves the numerous natural springs located on the Duck Valley Indian Reservation. Provides a clean pure source of water for the fish and wildlife in the

ISRP Recommendation - Fund for 1 YR / CBFWA Tier 1 / ISRP Comparison with CBFWA: Agree-fund

Sponsor Funding Request = \$294,722 / CBFWA Funding Recommendation = \$294,722

Recommendation:

Fund for one year to allow the project sponsors to better refine their project. Future long-term funding contingent on addressing deficiencies.

Comments:

This proposal has improved somewhat from last year, but still does not adequately

address shortcomings that were identified in the previous review. The proposal includes the desirable objective of a watershed assessment, and protection of riparian habitats is critical for the persistence of native fishes. The proposed work is compatible with the Fish and Wildlife Plan. Most of the elements of this proposal would benefit from substantial elaboration. The authors need to develop quantifiable biologically measurable objectives, without which one cannot evaluate whether the work achieves its goals. More detail is needed on how sites will be evaluated and the standards for success.

**Index 1 - Table of Proposals Sorted as Presented in Volumes I and II.
Index 2 – Table of Proposals Sorted by Project Number**

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