Draft FY 2002 Innovative Projects Work Plan

Prepared for the
Northwest Power Planning Council

by the
Columbia Basin Fish and Wildlife Authority

June 28, 2002

Background

The Innovative Project funding category, which was suggested by the Independent Scientific Review Panel (ISRP) in past annual program reviews, is designed to provide an opportunity for sponsors to submit proposals that focus on testing new methods and technologies for fish and wildlife recovery in the Columbia River Basin. Innovative proposals were funded in Fiscal Years (FY) 1998, 2000, and 2001 (none in 1999).

On February 20, 2002, the Bonneville Power Administration (BPA) issued a solicitation for Innovative Project proposals. Proposed projects needed to be consistent with the Northwest Power Planning Council's (NWPPC) Columbia River Basin Fish and Wildlife Program adopted in 2000. For FY 2002, submission of proposals was limited to pilot-scale projects under the premise that new ideas and experimental methods are often best tested as pilot projects prior to full-scale implementation. The funding for innovative projects was described as a one time only contract for the complete scope of work, not to exceed $200,000. In addition, the duration of the performance period for each proposed project was limited to a maximum of 18 months. As with the FY 2001 solicitation, innovative projects were defined as those which rely primarily on a method or technology that (1) has not previously been used in fish and wildlife projects in the Pacific Northwest, or (2) although used in other projects, has no previously been used in an application of this kind.

A total of 37 proposals were submitted for innovative funding in FY 2002. The ISRP reviewed each of these proposals and provided a prioritized recommendation. The Columbia Basin Fish and Wildlife Authority (CBFWA), with the ISRP's technical review in hand, reviewed the projects and developed this report which addresses the potential application of each proposal to regional management needs.

Review by the ISRP

The ISRP released "Review of Fiscal Year 2002 Innovative Proposals for the Columbia Basin Fish and Wildlife Program" on May 24, 2002 (NWPPC document number: ISRP 2002-8). The ISRP reviewed all 37 proposals and "found that 17 proposals met the innovative criteria, described scientifically sound techniques, and offered potential benefits to fish and wildlife." The ISRP did not specifically rank the other 20 proposals because the proposals did not provide adequate justification for funding under the innovative solicitation, were not technically sound, or did not demonstrate benefits to fish and wildlife.

The ISRP made the following points relative to the top 17 proposals:

- The top five proposals and especially the top three tied for first and stood out as proposals that are high priority meriting immediate funding.
- The proposals that were ranked from 6 to 12 offer potentially valuable contributions to the Fish and Wildlife Program.
- The proposals that were ranked from 13 to 17 met the review criteria but did not demonstrate as strong a potential to provide significant benefits as the top12.

CBFWA Innovative Project Review

Due to the large number of innovative project proposals and the short period for review, an ad hoc review group was established to review the proposals and provide their recommendations to the CBFWA committees. Following review by the committees, the recommendations were submitted to

the CBFWA Members Management Group and Members for a consensus recommendation for each proposal.

With the Independent Science Review Panel's (ISRP) technical review in hand, the ad hoc review group reviewed the proposals for the potential application of each proposal to regional management needs. The review by the committees involved three criterion: (1) does the proposal meet the Northwest Power Planning Council's (NWPPC) definition of innovative project and the funding limitation time duration of $200,000 and 18 months, respectively; (2) does the proposal meet the CBFWA's innovative criteria; and (3) what budget priority category is appropriate for management prioritization. Project sponsors abstained from participating in the review of their own proposals.

The first review task was to determine whether a proposal met the NWPPC's definition of "innovative" as provided in the Background text in this document. Next, the reviewers evaluated whether the proposal met all of the following criteria that the CBFWA developed and submitted to the NWPPC.

- Project is a collaborative effort with agencies, tribes, local watershed groups, and/or private landowners which evaluates a new idea, method, or device needed by fish and wildlife managers to satisfy management actions/needs identified in subbasin summaries/plans or address critical requirements, uncertainties, or threats to population maintenance and/or habitat protection identified by managers elsewhere in the basin.
- Project results have widespread applicability in the Columbia River Basin.
- Project duration, including final report preparation, does not exceed eighteen months (i.e., funding will only be available for eighteen months thus projects must be designed so that field/laboratory work, data analyses, and final report preparation are completed within that time frame).
- Project proposal possesses clearly defined hypothesis, objectives, tasks, and scientifically valid strategies/techniques, principals, and monitoring and evaluation plans.

Following the review of each proposal, the reviewers assigned the proposals to one of four budget priority categories adopted by the CBFWA for use in the "Rolling Provincial Review" for identifying management priority among proposed projects. Although these categories are not a perfect fit for innovative projects, these definitions were used to maintain consistency for all projects funded through the Fish and Wildlife Program. The budget categories are as follows:

Urgent – Projects or tasks within a project are of urgent need. They will either have a direct impact on survival or protection of a key species or will protect investments made in the subbasin. These projects should be able to demonstrate an immediate cost if not funded.

High Priority – These projects or tasks within a project are high priority within the subbasin. The project addresses a specific need within the subbasin summaries.

Recommended Action – These good projects cannot demonstrate a significant loss by not being funded this year. These projects should be funded, but under a limited budget could be delayed without significant loss.

Do Not Fund – This project is either technically inadequate or does not address a need within the subbasin summaries. These projects may be inappropriate for BPA funding. Proposals that did not meet the NWPPC or CBFWA criteria were assigned to this category.

CBFWA Innovative Project Recommendations

The CBFWA's recommendations are presented in Table 1. Projects were assigned to one of four funding priorities; however, projects were not prioritized within budget categories. The placement of a proposal relative to others in a budget category does not suggest the project is more or less important than any of the other projects in the category. A complete table for all projects is provided in Appendix A.

Although the High Priority and Recommended Action projects total more than the $2 million allocated for innovative projects, CBFWA does not support increasing this placeholder amount for this purpose. The existing Fish and Wildlife Program provides ample opportunity for innovative ideas to be tested and funded. To fund additional research from the Fish and Wildlife Program will remove on the ground opportunities for protection, mitigation and enhancement of fish and wildlife resources in the Columbia Basin.

Table 1. Columbia Basin Fish and Wildlife Authority recommendations for Fiscal Year 2002 Innovative Project proposals.

Project No.	Title	Sponsor	CBFWA Priority
34001	Pilot Study: Spatial and Temporal Occurrence of Salmonid Pathogens in the Upper Middle Mainstem Subbasin of the Columbia Cascade Province	WSU	High Priority
34002	Evaluate Spawning Protocols and the Reproductive Success of Salmonids in Hatcheries	UE	Recommended Action
34003	Salmon Run Generator (SRG).	ALLC	Do Not Fund
34004	Develop Computational Fluid Dynamics Model to Predict Total Dissolved Gas Below Spillways	ENSR	Do Not Fund
34005	Application of DNA Fingerprinting Microarrays and Semi-Automated Data Analysis Methods for Salmonid Stock Identification in the Columbia Basin	PNNL	High Priority
34006	Assess Salmon Carcass Nutrient-Macroinvertebrate-Avian Relationships in Riparian Ecosystems of the Yakima Subbasin	NHI	Recommended Action
34007	New Life for dead stream	BVID	Do Not Fund
34008	Use a Multi-Watershed Approach to Increase the Rate of Learning from Columbia Basin Watershed Restoration Projects	ESSA	High Priority
34009	Net Pen Rearing Spring Chinook in Lake Osoyoos	CCT	Do Not Fund
34010	Visualization Tools for Information Discovery and Decision Support	PNNL	Recommended Action
34011	Western Painted Turtle Habitat Restoration Project	PES	Do Not Fund
34012	Sponsor A Smolt	MSRF	Do Not Fund
34013	Restore ecological structure and function to Grays Lake Using a Decision Support System	USGS	Do Not Fund
34014	Assessing Potential Biological and Toxicological Effects of Parental Transfer of Environmental Contaminants to White Sturgeon in the Columbia River	OSU	Do Not Fund
34015	Neotropical Migratory Bird Habitat Restoration Project	PES	Do Not Fund
34016	Behavioral Motivation in the Evaluation of Culvert Designs for Juvenile Salmonid Passage	PNNL	Do Not Fund
34017	Low-Cost Thermal Imaging System for Aerial Remote Sensing Applications	SMI	Recommended Action

Project No.	Title	Sponsor	CBFWA Priority
34018	Evaluate Engineering Conceptual Design and Field Application of Pisces Fish Passage Unit	WPN	Do Not Fund
34019	Evaluate the Effects of Hyporheic Discharge on Egg Pocket Water Temperature in Snake River Fall Chinook Salmon Spawning Areas	PNNL	High Priority
34020	Fish Behavioral Guidance Through Water Velocity Modification PHASE ONE	NS	Do Not Fund
34021	Using stable isotope ratios to explore positive or negative impacts of American shad on salmon and the aquatic community in the Columbia River	USGS	High Priority
34022	Evaluate the population structure of chinook salmon by combining inferences from ecological, demographic, and molecular genetic analysis	USFS-RMRS	High Priority
34023	Laboratory, Prototype, and Field Evaluation of Undershot Horizontal Fish Screen in the Hood River Basin	CTWSRO and FID	High Priority
34024	Integrating remote sensing and topographic indices to detect the impact of invasive species on critical winter elk forage areas	CTUIR	High Priority
34025	Assess role of estuarine habitat in maintaining chinook salmon life history diversity in the Columbia River using remote PIT tag monitoring systems	OSU	High Priority
34026	Studying the Impacts of Dam Passage on the Vestibular System in Fish	PNNL	Do Not Fund
34027	Controlling the Distribution of American Shad (Alosa sapidissima) with Pulsed Ultrasound Near Fish Ladders and at a Sluiceway Entrance	PNNL	Recommended Action
34028	Innovative Technologies for Mapping Large Woody Debris and Assessing Fish Distribution	BMSL	High Priority
34029	Geomorphic Controls on Salmonid Spawning Habitat in Mountain Drainage Basins of the Pacific Northwest	UI and USFS-RMRS	Recommended Action
34030	Enhancing Instream Flow by Adopting Best Agricultural Management Practices	WSU	High Priority
34031	Biological and Economic Feasibility of Reintroducing Fishwheels to the Columbia River System	SA	Do Not Fund
34032	Otolith Marking using Portable Mist Incubation	ARED	Do Not Fund
34033	Demonstrate novel methods of mist incubation and mechanical egg planting in salmon restoration.	ARED	Do Not Fund
34034	High-Speed Fish Screen for Irrigation Diversion	WEID	Do Not Fund
34035	Chinook Salmon Abundance Monitoring Using an Acoustic Camera	PNNL	Recommended Action
34036	Development and Demonstration of Automatic Calibration Tools for Models to Assess Biological Performance of Habitat Restoration Strategies	PNNL	High Priority
34037	Analysis of alternative hatchery and fishery configurations in the Columbia River Basin	SPCA	Do Not Fund

CBFWA Urgent-High Priority

A total of 12 projects were identified as High Priority by CBFWA (Table 2) totaling approximately $2.3 million. CBFWA recommends only funding projects from Table 2 for the Fiscal Year 2002 Innovative projects placeholder.

Table 2. Fiscal Year 2002 Innovative Project proposals in the CBFWA Urgent or High Priority Categories.

Project No.	Title	Sponsor	CBFWA Comments	ISRP Ranking	Request
34001	Pilot Study: Spatial and Temporal Occurrence of Salmonid Pathogens in the Upper Middle Mainstem Subbasin of the Columbia Cascade Province	WSU		7	$199,461.00
34005	Application of DNA Fingerprinting Microarrays and Semi-Automated Data Analysis Methods for Salmonid Stock Identification in the Columbia Basin	PNNL		16	$200,000.00
34008	Use a Multi-Watershed Approach to Increase the Rate of Learning from Columbia Basin Watershed Restoration Projects	ESSA		1	$199,764.00
34019	Evaluate the Effects of Hyporheic Discharge on Egg Pocket Water Temperature in Snake River Fall Chinook Salmon Spawning Areas	PNNL		1	$196,299.00
34021	Using stable isotope ratios to explore positive or negative impacts of American shad on salmon and the aquatic community in the Columbia River	USGS		4	$181,249.00
34022	Evaluate the population structure of chinook salmon by combining inferences from ecological, demographic, and molecular genetic analysis	USFS-RMRS	The project sponsors should coordinate closely with Fred Utter, the Interior Columbia Basin Technical Recovery Team geneticist, in order to maximize benefits from this project.	1	$199,957.00
34023	Laboratory, Prototype, and Field Evaluation of Undershot Horizontal Fish Screen in the Hood River Basin	CTWSRO and FID	This project needs to coordinate closely with NMFS in developing this technology.	13	$187,004.00

Project No.	Title	Sponsor	CBFWA Comments	ISRP Ranking	Request
34024	Integrating remote sensing and topographic indices to detect the impact of invasive species on critical winter elk forage areas	CTUIR	We agree with the ISRP comment that more detailed information would be helpful, but disagreed with the ISRP do not fund recommendation. The Wildlife Committee felt that the study would provide information useful for making decisions on project prioritization.	Unranked	$133,677.00
34025	Assess role of estuarine habitat in maintaining chinook salmon life history diversity in the Columbia River using remote PIT tag monitoring systems	OSU	We have used PIT tags successfully throughout the Basin. The application for estuarine environments will provide significant information that will be helpful in our understanding of chinook life history in this habitat.	Unranked	$196,853.00
34028	Innovative Technologies for Mapping Large Woody Debris and Assessing Fish Distribution	BMSL	The side scan sonar has had very important application in other nearshore marine environments, notably eelgrass and the significant management issues related to it. Large woody debris has been demonstrated to be important to salmonids. Side scan sonar will readily detect large woody debris. This proposal will use the technique to characterize this habitat feature in the estuarine environment.	Unranked	$172,358.00
34030	Enhancing Instream Flow by Adopting Best Agricultural Management Practices	WSU		8	$199,312.00
34036	Development and Demonstration of Automatic Calibration Tools for Models to Assess Biological Performance of Habitat Restoration Strategies	PNNL		5	$205,715.00

CBFWA Recommended Action

The CBFWA identified six proposals in the ISRP's "Top 17 " list that did not meet the management priorities within CBFWA at this time (Table 3). The projects that were categorized as Recommended Action are good science based projects with merits for management application. However, due to funding limitations CBFWA does not recommend funding any of these projects at this time under the innovative placeholder.

Table 3. FY 2002 Innovative Project proposals in the CBFWA Recommended Action Category.

Project No.	Title	Sponsor	CBFWA Comments	ISRP Ranking	Request
34002	Evaluate Spawning Protocols and the Reproductive Success of Salmonids in Hatcheries	UE		6	$197,799.00
34006	Assess Salmon Carcass Nutrient-Macroinvertebrate-Avian Relationships in Riparian Ecosystems of the Yakima Subbasin	NHI		Unranked	$184,280.00
34010	Visualization Tools for Information Discovery and Decision Support	PNNL		11	$199,867.00
34017	Low-Cost Thermal Imaging System for Aerial Remote Sensing Applications	SMI		15	$115,674.00
34027	Controlling the Distribution of American Shad (Alosa sapidissima) with Pulsed Ultrasound Near Fish Ladders and at a Sluiceway Entrance	PNNL		9	$200,000.00
34029	Geomorphic Controls on Salmonid Spawning Habitat in Mountain Drainage Basins of the Pacific Northwest	UI and USFS-RMRS		17	$199,953.00
34035	Chinook Salmon Abundance Monitoring Using an Acoustic Camera	PNNL		14	$146,900.00

CBFWA Do Not Fund

The CBFWA identified two proposals in the ISRP's "Top 17 " list that have limited/no application, are currently being conducted, or do not meet the NWPPC's innovative criteria and funding limitations (Table 4). The CBFWA believes these proposals should not be funded since the proposals exhibit an inability to meet the NWPPC's innovative requirements or are proposing the use of technology that has limited application in the Columbia River Basin.

Table 4. FY 2002 Innovative Project proposals in the CBFWA Do Not Fund Category.

Project No.	Title	Sponsor	CBFWA Comments	ISRP Ranking	Request
34003	Salmon Run Generator (SRG).	ALLC		Unranked	$198,500.00
34004	Develop Computational Fluid Dynamics Model to Predict Total Dissolved Gas Below Spillways	ENSR	This proposal did not meet the criteria outlined in the solicitation package. The proposal is redundant to activities that are already occurring through the FCRPS BiOp. There is already a MASS 2 numerical model and a SYSTDG spreadsheet model that have been developed for this purpose.	10	$630,077.00
34007	New Life for dead stream	BVID		Unranked	$41,565.00
34009	Net Pen Rearing Spring Chinook in Lake Osoyoos	CCT		Unranked	$199,000.00
34011	Western Painted Turtle Habitat Restoration Project	PES		Unranked	$58,417.00
34012	Sponsor A Smolt	MSRF		Unranked	$58,061.00
34013	Restore ecological structure and function to Grays Lake Using a Decision Support System	USGS		Unranked	$200,000.00
34014	Assessing Potential Biological and Toxicological Effects of Parental Transfer of Environmental Contaminants to White Sturgeon in the Columbia River	OSU		Unranked	$199,000.00
34015	Neotropical Migratory Bird Habitat Restoration Project	PES		Unranked	$197,320.00
34016	Behavioral Motivation in the Evaluation of Culvert Designs for Juvenile Salmonid Passage	PNNL		Unranked	$199,989.00
34018	Evaluate Engineering Conceptual Design and Field Application of Pisces Fish Passage Unit	WPN		Unranked	$194,864.00
34020	Fish Behavioral Guidance Through Water Velocity Modification PHASE ONE	NS		Unranked	$222,586.00

Project No.	Title	Sponsor	CBFWA Comments	ISRP Ranking	Request
34026	Studying the Impacts of Dam Passage on the Vestibular System in Fish	PNNL	Development of experimental designs will require completion of objectives 1 through 4, which constitute a feasibility assessment of the methods to perform controlled laboratory scale experiments where treatments are mechanical stimulation of fish which mimics aspects of the exposure of fish to severe hydraulic conditions during passage past mainstem Columbia and Snake river dams. The major experimental risk at this point in the project is that the approach has been determined to be infeasible. The reviewers are concerned that funding this project will not provide any information on the negative affects of fish passage on actual fish. This proposal builds a sampling device (i.e. shaker table), but would not fund the studies needed to answer pertinent biological questions. This project may be better suited for the Anadromous Fish Evaluation Program through the USACoE.	12	$195,850.00
34031	Biological and Economic Feasibility of Reintroducing Fishwheels to the Columbia River System	SA		Unranked	$260,525.00
34032	Otolith Marking using Portable Mist Incubation	ARED		Unranked	$121,952.00
34033	Demonstrate novel methods of mist incubation and mechanical egg planting in salmon restoration.	ARED		Unranked	$199,991.29
34034	High-Speed Fish Screen for Irrigation Diversion	WEID		Unranked	$250,000.00
34037	Analysis of alternative hatchery and fishery configurations in the Columbia River Basin	SPCA		Unranked	$67,200.00