Draft FY 2001 Innovative Projects Work Plan

Prepared for the
Northwest Power Planning Council

by the
Columbia Basin Fish and Wildlife Authority

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Background

In previous reviews of projects sponsored under the Fish and Wildlife Program, the Independent Scientific Review Panel (ISRP) has recommended that the Northwest Power Planning Council (NWPPC) establish a special funding category to encourage innovative projects. In FY 2000, the NWPPC committed to do this and 12 projects were recommended for funding. In FY 2001, Bonneville Power Administration (BPA) will allocate up to $2 million for innovative projects.

On August 30, 2000 BPA issued a solicitation for Innovative Project Proposals. Proposed projects needed to be consistent with the NWPPC's Columbia River Basin Fish and Wildlife Program. Without excluding any other types of innovative projects, the NWPPC expressed an interest in projects demonstrating the effect of nutrient supplementation. The funding for innovative projects was described as a one time only contract for the complete scope of work, not to exceed $400,000. There were no specific conditions on the duration of the performance period for each proposed project.

For the purpose of this solicitation, the NWPPC defined innovative projects as those which rely primarily on a method or technology that (1) has not previously been used in a fish or wildlife project in the Pacific Northwest, or (2) although used in other projects, has not previously been used in an application of this kind. The purpose of "innovative" projects is to explore new methods and technologies and new applications for existing methods and technologies designed to directly benefit fish and wildlife.

A total of 66 proposals were submitted for innovative funding in FY 2001. The ISRP reviewed each of these proposals and provided a prioritized recommendation. CBFWA, with the ISRP's technical review in hand, was asked to review the projects and provide comments on the potential application of each submitted proposal to regional management needs. This report addresses that request.

Review by the ISRP

The ISRP released "Review of Fiscal Year 2001 Innovative Proposals for the Columbia Basin Fish and Wildlife Program" on December 15, 2000 (NWPPC document number: ISRP 2000-10). The ISRP reviewed all 66 proposals and ranked the top 20. The rank order reflects the ISRP's combined judgement for each proposal of its degree of innovation, technical soundness, likelihood of success, and ramifications of its results, if it successfully achieves its objectives. The ISRP did not specifically rank proposals below the top twenty, because at that point the proposals were judged to provide marginal benefit to the Fish and Wildlife Program, to only marginally meet the innovative criteria, or were judged to not satisfy the innovative criteria.

The ISRP made the following points:

- The top twenty proposals offer innovative and scientifically sound approaches that will likely benefit fish and wildlife.

- The top eight proposals request funds that exceed the $2 million allocated to innovative proposals.

- The ISRP did not provide comments on how to improve proposals because there is no response loop included in the process.

- The ISRP views the Innovative Proposal Category as a "venture capital" program for the Fish and Wildlife Program and as such, proposals that test or develop new ideas, approaches, or applications should receive priority.

- The ISRP commented on project scale and the confusion of implementation and evaluation. They noted that new ideas and experimental methods are often best tested as pilot projects before stepping up to full-scale implementation.

- The ISRP suggested that future solicitations cap budgets of innovative projects at $250,000 and recommended a range of $50,000 - $150,000, and that, in general, the Fish and Wildlife Program will be best served if innovative projects are able to test concepts and methods in 12-18 months time, leaving the longer-term implementation phase for funding under the Provincial Review Process.

- Finally, the ISRP recommended that the annual budget for the innovative proposal solicitation be increased, and that a separate budget be set aside for targeted Requests For Proposals (RFPs) such as nutrient supplementation.

CBFWA Innovative Project Review

Due to the large number of innovative project proposals and the short period for review, an expedited review process was established. Resident fish, anadromous fish, and wildlife-specific proposals were assigned to the Columbia Basin Fish and Wildlife Authority's Resident Fish, Anadromous Fish, and Wildlife committees, respectively, for review. Because many projects (e.g., 22003, 22008, 22059) would directly affect more than one type of resource (i.e., resident fish, anadromous fish, and wildlife), these proposed projects were reviewed by multiple committees. In addition, since the scopes of 14 proposals were identified as "global" (i.e., resident fish, anadromous fish, and wildlife would all directly benefit from the work) each committee reviewed this group of proposals.

The Resident Fish and Wildlife committees established ad hoc work groups to review the proposals. After completing individual evaluations, the work groups met to reach a consensus recommendation for each proposal and subsequently reported back to their respective committees with their results for approval. The Anadromous Fish Committee reviewed the proposals as a full committee. Following review by the technical committees, the recommendations were reviewed and approved by consensus by the Members Management Group and the Members.

With the Independent Science Review Panel's (ISRP) technical review in hand, the committees 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 of $400,000; 2) does the proposal meet the following CBFWA 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 two years (i.e., funding will only be available for two years thus projects must be designed so that field/laboratory work, data analyses, and final report preparation are completed within two years).

- 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 review and recommendation is reflected 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.

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. FY 2001 CBFWA Review of Innovative Projects.

Project ID	Title	Sponsor	NWPPC Innovative Definition (Y or N)	CBFWA Innovative Criteria (Y or N)	Budget Category (U, HP, RA, DNF)	Comments	ISRP Recomm.
22001	A Feasibility Study for Pacific Ocean Salmon Tracking (POST)	Kintama Research Corp.	Y	Y	RA	This proposal while very innovative should be scaled in phases rather than presented as a complete project since there are uncertainties, which should be addressed prior to moving to the next phase. Phases may be delineated as; tag application, tracking, and analysis. Tag Application - It is apparent that the application of the tag would target larger fish, and is indicated as a surgical procedure, the experimental variability created by this would be large. In many cases the larger fish would move beyond the Continental Shelf and beyond the range of tracking devices. Tracking – Tags must be within 400 miles of a tracking device and have a battery life of 3 months. A rapidly migrating smolt would be recorded as transiting the sites but what would be the action if the fish did not migrate through the area within the battery life. Analysis - The limited number (4096) of individual codes that can be produced would limit the applicability of the data. In many cases to offset the low survival of salmon smolts.	1;Yes - A

Table 1 continued

Project ID	Title	Sponsor	NWPPC Innovative Definition (Y or N)	CBFWA Innovative Criteria (Y or N)	Budget Category (U, HP, RA, DNF)	Comments	ISRP Recomm.
22002	Influences of stocking salmon carcass analogs on salmonids in Columbia River tributaries	WDFW, BO, SBT, NMFS, YN	Y	Y	HP	The proposal could be improved if more of a terrestrial scope is incorporated. The proposal should be modified to include a phase that focuses on the terrestrial species and processes. See general nutrient supplementation comments in report.	4; Yes-A
22003	Evaluate Reproductive Status of Salmon & Sturgeon Using Noninvasive Techniques	WSU	N	Y	HP	This project is high priority for white sturgeon culture/enhancement. Scope should only focus on white sturgeon and budget should be subsequently reduced to below $400,000.	Yes - C
22004	Impact of wastewater effluent on Chinook salmon reproduction	Komex-H2O Science, Inc.	Y	Y	RA	Agree with ISRP comments.	Yes - C
22005	An experimental evaluation of nutrient supplementation on juvenile salmonid fish abundance in nutrient-limited streams	ISU	Y	Y	RA	See general nutrient supplementation comments in report.	19;Yes - B

Table 1 continued

Project ID	Title	Sponsor	NWPPC Innovative Definition (Y or N)	CBFWA Innovative Criteria (Y or N)	Budget Category (U, HP, RA, DNF)	Comments	ISRP Recomm.
22006	Evaluate Use of Small (Nano) Radio Tags to Determine Subadult Bull Trout Population Status In Dworshak Reservoir, N.F. Clearwater River Drainage, ID	IDFG	N	N	DNF	Nano tags have been used in the basin.	Not Innovative
22007	Develop Population Dynamic Model for White Sturgeon	IDFG	N	N	DNF	No new concepts or methods are proposed. Although intellectually stimulating, the proposed work will not likely improve conditions for white sturgeon. Not innovative	Not Innovative
22008	Evaluate and compare the effects of nutrient supplementation from carcasses and fertilizer on fish growth and survival and lower trophic levels.	USU	Y	Y	HP	See general nutrient supplementation comments in report.	Yes - B

Table 1 continued

Project ID	Title	Sponsor	NWPPC Innovative Definition (Y or N)	CBFWA Innovative Criteria (Y or N)	Budget Category (U, HP, RA, DNF)	Comments	ISRP Recomm.
22009	Ultrasonic Induced Sonochemical Destruction of Pathogens, Viruses, Nitrates and Other Nutrients and Contaminants From Waste Discharge Streams	Water Services, L.L.C.	N	Y	DNF	Budget exceeds $400,000.	Yes - C
22010	Echo Meadow Project - Winter Artificial Recharge to Cool Rivers	IRZ	N	N	DNF	This is not a feasibility study. Exceeds the $400,000 limit. Outcome from project 22050 may help direct this type of effort. Where will the benefits from this activity accrue? Will additional instream flow be reserved for fish?	18;Yes - B
22011	Demonstrate Proprietary Husbandry System for Musca domestica as Reliable Aquaculture Insect Nutrient Resource	OFIC	Y	N	DNF	Project appears to be for product development within incorporated companies operated for profit. Not a priority of fish and wildlife managers to use *Musca domesticata*as as a food source for hatchery fish. Proposal does not demonstrate that the proposed food source is a better food source than already available food sources.	Yes - C
22012	Restoration Of Riparian Zones With Enabling Technology and Grazing Practice Enhancement	CER	N		DNF	Agree with ISRP comments.	Not Innovative

Table 1 continued

Project ID	Title	Sponsor	NWPPC Innovative Definition (Y or N)	CBFWA Innovative Criteria (Y or N)	Budget Category (U, HP, RA, DNF)	Comments	ISRP Recomm.
22013	Genetic sex of chinook salmon in the Columbia River Basin	UI	Y	Y	U		2; Yes - A
22014	Improving and Extending the Snake River Germplasm Repository	UI	Y	Y	RA	Some populations are going to need these extreme measures. ISRP refutes this project based on the same reasons that this category of funding was established to address. High expense. Cryopreservation of female germplasm is the only need in this proposal.	Yes - B
22015	Develop a Spatially-based Internet Portal that Integrates Distributed Northwest Fish, Wildlife, and Plant Data for On-line Mapping, Query, & Analysis	NHI	Y	N	DNF	Premature to fund this project at this time. Not innovative.	Yes - B
22016	Anadromous Salmonid Engineered Habitat For Production and Transit	ARI	N		DNF	Agree with ISRP comments.	Not Innovative

Table 1 continued

Project ID	Title	Sponsor	NWPPC Innovative Definition (Y or N)	CBFWA Innovative Criteria (Y or N)	Budget Category (U, HP, RA, DNF)	Comments	ISRP Recomm.
22017	Monitor and Evaluate Nutrient Supplementation as a Tool for Increasing Production and Survival of Juvenile Chinook Salmon from Infertile Streams	PER, Ltd.	Y	Y	HP	See general nutrient supplementation comments in report.	Not a stand-alone project
22018	Development of an Automatic System to Prevent Salmonid Diseases	WDFW	Y	Y	RA	Agree with ISRP comments.	Yes - B
22019	Use a Multi-Watershed Approach to Increase the Rate of Learning from Columbia Basin Watershed Restoration Projects	ESSA	Y (AFC), N(RFC)	Y (AFC), N (RFC)	DNF	CBFWA recommends not funding this project due to the proposal's inability to convince the resident fish managers of its value as an innovative project. This information will be necessary for subbasin planning and M+E activities in the future. (AFC) Although this project would be useful, the concept does not appear to be innovative. In addition, the goal would likely not be achieved within the allotted time period. Coordinating regional activities as expressed in the proposal take many years to achieve. Coordination is not innovative. (RFC)	13;Yes - B

Table 1 continued

Project ID	Title	Sponsor	NWPPC Innovative Definition (Y or N)	CBFWA Innovative Criteria (Y or N)	Budget Category (U, HP, RA, DNF)	Comments	ISRP Recomm.
22020	Assess Washougal River and its tributaries	LCFRB	N		DNF	Agree with ISRP comments.	Not Innovative
22021	Develop Innovative Approaches for Monitoring Bats in the Clearwater Region of Idaho	IDFG	Y	Y	RA	CBFWA concurs with the ISRP comments regarding this project.	Yes - B
22022	Using Induced Turbulence to Assist Downstream-Migrating Juvenile Salmonids	WA State University	Y	Y	DNF	The turbulent flow jet idea is currently being investigated by the USGS-BRD at Cowlitz Falls Dam, in the context of possible implementation at some point at Lower Granite Dam, in conjunction with the surface bypass program. They have completed the second year of work, and will be funded for an additional year in 2001, based on some positive study results. The concept is in the early stages of development, and issues such as definition of the 3-D flow field and precise juvenile tracking with acoustic tags are being probed to assess bioengineering interactions. While the benefits of starting another study threaten to "reinvent the wheel", there could be a benefit to WSU undertaking lab work. If there is adequate coordination, and determination that WSU could augment the BRD effort, rather than approach the issue separately (on its own).	5;Yes - A

Table 1 continued

Project ID	Title	Sponsor	NWPPC Innovative Definition (Y or N)	CBFWA Innovative Criteria (Y or N)	Budget Category (U, HP, RA, DNF)	Comments	ISRP Recomm.
22023	Socioeconomic Analysis Tool for Sub-Basin Planning	N/A	Y (AFC), N(RFC)	Y (AFC), N (RFC)	DNF	CBFWA recommends not funding this project due to the proposals inability to convince the resident fish managers of its value as an innovative project. Agree with ISRP comments. (AFC) Continued cost analyses will not improve fish survival but instead continue to fuel politically motivated debate. (RFC)	Yes - C
22024	Alternative Futures and Salmonids in the Lower Columbia River	WDFW	Y	Y	RA	Agree with ISRP comments.	Yes - C
22025	Identification and assessment of technologies and methods to census spawning adult population size of spring and summer chinook salmon	NPT	N		DNF	Agree with ISRP comments.	Not Innovative
22026	Columbia Basin Interactive Watershed Atlas	SMI	N	N	DNF	Agree with ISRP comments.	Not Innovative
22027	Real Time Data Loggers for Monitoring Climate Conditions within a Riparian System	EcoTec	Y	Y (AFC), N (RFC)	DNF	CBFWA recommends not funding this project due to the proposals inability to convince the resident fish managers of its value as an innovative project. Agree with ISRP comments. (AFC) Project appears to be for product development within incorporated company operated for profit. (RFC)	Yes - C

Table 1 continued

Project ID	Title	Sponsor	NWPPC Innovative Definition (Y or N)	CBFWA Innovative Criteria (Y or N)	Budget Category (U, HP, RA, DNF)	Comments	ISRP Recomm.
22028	Design and Coordinate Nutrient Supplementation Evaluations in the Salmon and Clearwater Subbasins, Idaho	IDFG	N		DNF	See general nutrient supplementation comments in report.	Not Innovative
22029	Evaluate the ecological role of marine derived nutrients in areas artificially blocked to anadromous fish migrations.	CCT	N	N	DNF	Does not determine if streams require nutrient input before addition of nutrients, nor does it test concentrations of nutrients. Budget exceeds $400,000 over the duration of the study. See general nutrient supplementation comments in report.	Yes - B
22030	Delayed mortality: Assess cumulative effects of multiple, sublethal stressors on the physiological health of downmigrating juvenile salmonids	ORNL	Y	Y	RA	Agree with ISRP comments.	Yes - B
22031	Evaluation of Two Captive Rearing Methods for Assisting with Recovery of Naturally Spawning Populations of Steelhead and Coho Salmon.	USFWS	N		DNF	Agree with ISRP comments.	Not Innovative but a good proposal

Table 1 continued

Project ID	Title	Sponsor	NWPPC Innovative Definition (Y or N)	CBFWA Innovative Criteria (Y or N)	Budget Category (U, HP, RA, DNF)	Comments	ISRP Recomm.
22032	Develop a practical method through diet modification to improve quality of hatchery reared steelhead trout and coho salmon.	USFWS	N		DNF	Agree with ISRP comments.	Not innovative
22033	Evaluate new methodologies for monitoring Pacific salmon and steelhead: methods for evaluating the effectiveness of restoration and recovery programs	USFWS	Y	Y	HP (at pilot scale)	The need for small stream PIT-tag interrogation is high in the Columbia River Basin. This proposal suggests several worthwhile approaches that should be tested. A cooperative effort with other investigators working on small stream PIT-tag interrogation systems is suggested, as well as the mainstem PIT tag work. The proposed PIT tags are not compatible with the newly installed system at all the hydroelectric dams on the mainstem Columbia River. These tags could not be used with existing hardware. The tags proposed here are also too large to use with most juvenile salmon in the Columbia River. However, the tags would work very well with juvenile steelhead. If successful, this technology could provide one more tool for monitoring timing and behavior in the numerous small streams in the Columbia River Basin. This project should only be funded at a pilot scale.	7; Yes - A (Fund only at a pilot-scale level to evaluate new tags)

Table 1 continued

Project ID	Title	Sponsor	NWPPC Innovative Definition (Y or N)	CBFWA Innovative Criteria (Y or N)	Budget Category (U, HP, RA, DNF)	Comments	ISRP Recomm.
22034	Influence of marine-derived nutrients on juvenile salmonid production: a comparison of two nutrient enhancement techniques	USGS-BRD	Y	Y	RA	See general nutrient supplementation comments in report.	Yes - B
22035	Renaturalize Functional Floodplain Habitat within the Portland Reach of the Lower Willamette River	Zidell	N		DNF	Budget exceeds $400,000.	Not Innovative
22036	The Application of Geophysics to Better Define Fall Chinook Salmon Spawning Habitat Use in the Hanford Reach, Columbia River.	GAI, PNNL	Y	Y	RA	Agree with ISRP comments.	Yes - C
22037	Locate chum and fall chinook salmon and redds in deep and turbid water using an acoustic camera	USGS	Y	Y	HP	This work could be closely integrated with existing projects that are monitoring mainstem spawning.	17;Yes - B

Table 1 continued

Project ID	Title	Sponsor	NWPPC Innovative Definition (Y or N)	CBFWA Innovative Criteria (Y or N)	Budget Category (U, HP, RA, DNF)	Comments	ISRP Recomm.
22038	Design and assessment of artificial spawning habitat for kokanee in Lake Pend Oreille, Idaho	University of Idaho	Y	Y	HP	Initiate this project at a smaller scale.	20;Yes - B
22039	Assess the Feasibility of Mainstem Habitat Improvements to Enhance survival of ESA Listed Species	University of Idaho	N		DNF	Agree with ISRP comments.	Not Innovative
22040	Ecosystem effects of anadromous salmon	IDFG	Y	Y	RA	Agree with ISRP comments.	Yes - C
22041	Using Microbial Fingerprinting to Rapidly Assess Ecosystem Responses to Watershed Restoration Efforts and Assist in Prioritizing Future Activities	WSU	N	Y	DNF	Budget exceeds $400,000.	Yes - C

Table 1 continued

Project ID	Title	Sponsor	NWPPC Innovative Definition (Y or N)	CBFWA Innovative Criteria (Y or N)	Budget Category (U, HP, RA, DNF)	Comments	ISRP Recomm.
22042	Evaluate the effects of nutrient supplementation on benthic periphyton, macroinvertebrates, and juvenile sturgeon in the Kootenai River	KTOI	Y	Y	HP	Mesocosm experiment will assess if large-scale experiments are warranted for endangered Kootenai River white sturgeon. See general nutrient supplementation comments in report.	9; Yes - A
22043	Enhancing instream flow by adopting best agricultural land management practices	WSU	Y	N	DNF	This project should have USDA involvement and contribution to this particular watershed may be minimal. It is unclear where the benefits from this project would accrue. Agriculture practice studies should be funded through other programs.	16; Yes - B
22044	Develop commercial selective live release fisheries for spring chinook on the Columbia River	WDFW, ODFW	Y	Y	RA	Agree with ISRP comments.	Yes - C
22045	Habitat/Subbasin Planning Electronic Newsletter Copyright October 30, 2000, Bill Crampton, 60968 Onyx Street, Bend, OR 97702	IC	N	N	DNF	Agree with ISRP comments.	Not Innovative

Table 1 continued

Project ID	Title	Sponsor	NWPPC Innovative Definition (Y or N)	CBFWA Innovative Criteria (Y or N)	Budget Category (U, HP, RA, DNF)	Comments	ISRP Recomm.
22046	Deschutes Subbasin Stakeholder Facilitation - A Pilot Project Copyright October 30, 2000. TIGERS Success Series, PO Box 267, Bend, OR 97709.	TIGERS	N	N	DNF	Agree with ISRP comments.	Not Innovative
22047	Salmonid response to fertilization: an experimental evaluation of alternative methods of fertilization	NWFSC	Y	Y	HP	See general nutrient supplementation comments in report.	8; Yes - A (Project could be reduced in scale and budget)
22048	Integrate Physical and Biological Assessment Models	MBI	Y	Y (AFC), N (RFC)	DNF	CBFWA recommends not funding this project due to the proposals inability to convince the resident fish managers of its value as an innovative project. The need to conduct this work is not clear. The extension of EDT should not be viewed as innovative. (RFC)	Yes - C
22049	Determine The Feasibility of Combining LIDAR, Computer Modeling, and GIS Techniques To Develop Effective Habitat Actions at the Watershed Scale	MBI and YN	Y	Y	RA	Agree with ISRP comments.	Yes - B

Table 1 continued

Project ID	Title	Sponsor	NWPPC Innovative Definition (Y or N)	CBFWA Innovative Criteria (Y or N)	Budget Category (U, HP, RA, DNF)	Comments	ISRP Recomm.
22050	Habitat Diversity in Alluvial Rivers	CTUIR	Y	Y	HP	The proposal could be improved if more of a terrestrial scope is incorporated. The proposal should be modified to include a phase that focuses on the terrestrial species and processes.	6;Yes - A
22051	Characterize Genetic Differences and Distribution of Freshwater Mussels	CTUIR	Y	Y	RA	Assessment of current species range should be completed first. Although this project has merit, it is lower priority than the leading proposals.	Yes - C
22052	Sources, Fate and Biological Impacts of Sediments as Part of a Comprehensive Sediment Management Plan	WSU	Y	Y	RA	Agree with ISRP comments.	Yes - C
22053	Analyze the historic productivity of Wallowa Lake and its implications for sockeye reintroduction and water quality management	OSU	Y	Y	RA	Agree with ISRP comments.	Yes - C
22054	Effects of Chronic Disease on Delayed Mortality of Chinook Salmon and Steelhead Trout in the Columbia River Estuary	OSU	N		DNF	Agree with ISRP comments.	Not Innovative

Table 1 continued

Project ID	Title	Sponsor	NWPPC Innovative Definition (Y or N)	CBFWA Innovative Criteria (Y or N)	Budget Category (U, HP, RA, DNF)	Comments	ISRP Recomm.
22055	Develop a Nutrient/Food-Web Management Tool for Watershed-River Systems	Battelle	Y	Y	RA	See general nutrient supplementation comments in report.	11;Yes - A
22056	Development of Salmon DNA Finger Printing Microarrays	Battelle Pacific NW Laboratories	Y	Y	RA	The CBFWA generally agrees with the ISRP comments. If this project were successful, there could potentially be many applications for this technique.	15;Yes - B
22057	Waterbody and Aquatic Habitat Characterization Utilizing High Resolution Satellite Imagery and Aerial Imagery	Teasdale Environmental Associates	Y	Y	RA	Unsure how applicable the data generated from this technique would be for planning. Text did not address limitations due to deep water or turbidity. This proposed work appears to be similar to ongoing satellite imagery work.	10;Yes - A
22058	Experimental Selective Fishery Techniques Development, Evaluation, and Coordination	NMFS-SFD	N		DNF	Agree with ISRP comments.	Not Innovative

Table 1 continued

Project ID	Title	Sponsor	NWPPC Innovative Definition (Y or N)	CBFWA Innovative Criteria (Y or N)	Budget Category (U, HP, RA, DNF)	Comments	ISRP Recomm.
22059	Using LIDAR technology for improved riparian vegetation monitoring and stream system water temperature modeling and TMDL development.	CRITFC	Y	Y	RA	Agree with ISRP comments.	Yes - B
22060	Assess Feasibility Of Enhancing White Sturgeon Spawning Substrate Habitat, Kootenai R., Idaho	USGS/KTOI	Y	Y	HP	This project is a high priority for recovery of endangered Kootenai white sturgeon. ISRP may not be aware of new information that indicates fine sediments may overlay spawning substrate.	14;Yes - B
22061	Fluid Dynamics and Mechanics of In-Stream Wood Debris	PWA	Y	Y (AFC), N (RFC)	DNF	CBFWA recommends not funding this project due to the proposals inability to convince the resident fish managers of its value as an innovative project. Information not vital to habitat rehabilitation. (RFC)	Yes - C
22062	Evaluate the use of anaerobic digestion to produce nutrient supplements for trout and salmon	DE&S	N		DNF	See general nutrient supplementation comments in report.	Not Innovative

Table 1 continued

Project ID	Title	Sponsor	NWPPC Innovative Definition (Y or N)	CBFWA Innovative Criteria (Y or N)	Budget Category (U, HP, RA, DNF)	Comments	ISRP Recomm.
22063	Determination of difficult passage areas, migration patterns and energetic use of upriver migrating salmon and steelhead	PNNL	Y	Y	RA	This project has demonstrated very limited application for management decisions. The ISRP continues to propose that this research would direct placement of fish ladders and removal of passage barriers, however, the work has not been proven for that capacity at this time. The work has merit but is not considered a high priority at this time.	3; Yes - A (prefer to fund through Gorge Province)
22064	Reintroduction success of steelhead from captive propagation and release strategies	NMFS	Y	N	HP	This project addresses important questions regarding supplementation.	12; Yes - A
22065	Design & Implement a System-wide Fish, Wildlife & Habitat Conservation Enforcement Web-Based Data Center	Steven Vigg & Company	N	Y (AFC), N (RFC)	DNF	CBFWA recommends not funding this project due to the proposals inability to convince the resident fish managers of its value as an innovative project. Coordination is not innovative. (RFC)	Yes - C
22066	Live Capture Harvest	Steven Vigg & Company	N		DNF	Agree with ISRP comments.	Not Innovative

CBFWA Urgent-High Priority

A total of 13 projects were identified as Urgent or High Priority by CBFWA (Table 2) totaling significantly more than $2 million. CBFWA recommends only funding projects from Table 2 for the Innovative projects placeholder. CBFWA recommends that NWPPC compare the ISRP prioritization and CBFWA urgent-high priority projects in order to determine which projects are eventually funded. Detailed comments for most projects are provided in Table 1.

Table 2. FY 2001 Innovative Projects in the CBFWA Urgent or High Priority Categories.

Project ID	Title	Sponsor	Budget Category (U, HP, RA, DNF)	ISRP Recomm.
22002	Influences of stocking salmon carcass analogs on salmonids in Columbia River tributaries	WDFW, BO, SBT, NMFS, YN	HP	4; Yes-A
22003	Evaluate Reproductive Status of Salmon & Sturgeon Using Noninvasive Techniques	WSU	HP	Yes - C
22008	Evaluate and compare the effects of nutrient supplementation from carcasses and fertilizer on fish growth and survival and lower trophic levels.	USU	HP	Yes - B
22013	Genetic sex of chinook salmon in the Columbia River Basin	UI	U	2; Yes - A
22017	Monitor and Evaluate Nutrient Supplementation as a Tool for Increasing Production and Survival of Juvenile Chinook Salmon from Infertile Streams	PER, Ltd.	HP	Not a stand-alone project
22033	Evaluate new methodologies for monitoring Pacific salmon and steelhead: methods for evaluating the effectiveness of restoration and recovery programs	USFWS	HP (at pilot scale)	7; Yes - A (Fund only at a pilot-scale level to evaluate new tags)
22037	Locate chum and fall chinook salmon and redds in deep and turbid water using an acoustic camera	USGS	HP	17;Yes - B
22038	Design and assessment of artificial spawning habitat for kokanee in Lake Pend Oreille, Idaho	University of Idaho	HP	20;Yes - B
22042	Evaluate the effects of nutrient supplementation on benthic periphyton, macroinvertebrates, and juvenile sturgeon in the Kootenai River	KTOI	HP	9; Yes - A

Project ID	Title	Sponsor	Budget Category (U, HP, RA, DNF)	ISRP Recomm.
22047	Salmonid response to fertilization: an experimental evaluation of alternative methods of fertilization	NWFSC	HP	8; Yes - A (Project could be reduced in scale and budget)
22050	Habitat Diversity in Alluvial Rivers	CTUIR	HP	6;Yes - A
22060	Assess Feasibility Of Enhancing White Sturgeon Spawning Substrate Habitat, Kootenai R., Idaho	USGS/KTOI	HP	14;Yes - B
22064	Reintroduction success of steelhead from captive propagation and release strategies	NMFS	HP	12; Yes - A

ISRP Top 20/CBFWA Recommended Action

Despite the ISRP's thorough technical review, the CBFWA identified six projects in the ISRP's "top twenty 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 2001 Innovative Projects in the CBFWA Recommended Action Category that rated in the ISRP Top 20.

Project ID	Title	Sponsor	Budget Category (U, HP, RA, DNF)	ISRP Recomm.
22001	A Feasibility Study for Pacific Ocean Salmon Tracking (POST)	Kintama Research Corporation	RA	1;Yes - A
22005	An experimental evaluation of nutrient supplementation on juvenile salmonid fish abundance in nutrient-limited streams	ISU	RA	19;Yes - B
22055	Develop a Nutrient/Food-Web Management Tool for Watershed-River Systems	Battelle	RA	11;Yes - A
22056	Development of Salmon DNA Finger Printing Microarrays	Battelle Pacific NW Laboratories	RA	15;Yes - B

Project ID	Title	Sponsor	Budget Category (U, HP, RA, DNF)	ISRP Recomm.
22057	Waterbody and Aquatic Habitat Characterization Utilizing High Resolution Satellite Imagery and Aerial Imagery	Teasdale Environmental Associates	RA	10;Yes - A
122063	Determination of difficult passage areas, migration patterns and energetic use of upriver migrating salmon and steelhead	PNNL	RA	3; Yes - A (prefer to fund through Gorge Province)

ISRP Top 20/CBFWA Do Not Fund

The CBFWA identified four projects in the ISRP's "top twenty 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 2001 Innovative Projects in the CBFWA Recommended Action Category that rated in the ISRP Top 20.

Project ID	Title	Sponsor	Budget Category (U, HP, RA, DNF)	ISRP Recomm.
22010	Echo Meadow Project – Winter Artificial Recharge to Cool Rivers	IRZ	DNF	18;Yes - B
22019	Use a Multi-Watershed Approach to Increase the Rate of Learning from Columbia Basin Watershed Restoration Projects	ESSA	DNF	13;Yes - B
22022	Using Induced Turbulence to Assist Downstream-Migrating Juvenile Salmonids	Washington State University	DNF	5;Yes - A
22043	Enhancing instream flow by adopting best agricultural land management practices	Washington State University	DNF	16; Yes - B

Nutrient Supplementation Projects

A total of 11 nutrient supplementation projects were submitted for innovative funding (Table 5). The ISRP provided a thorough review of these projects and as well as discussion on the topic of nutrient supplementation in general. CBFWA concurs with the general discussion and comments for most of the nutrient supplementation projects.

It is also important to mention that the *International Conference on Restoring Nutrients to Salmonid Ecosystems* to be held in Eugene, Oregon on April 24 to the 26, 2001. This conference will provide an opportunity for the region to consider the application of this technology to the Columbia Basin.

Table 5. Summary of CBFWA Review of Nutrient Supplementation Projects for Innovative Funding.

Project ID	Title	Sponsor	Budget Category (U, HP, RA, DNF)	ISRP Recomm.
22002	Influences of stocking salmon carcass analogs on salmonids in Columbia River tributaries	WDFW, BO, SBT, NMFS, YN	HP	4; Yes-A; Ranked 1 for nutrient projects
22008	Evaluate and compare the effects of nutrient supplementation from carcasses and fertilizer on fish growth and survival and lower trophic levels.	USU	HP	Yes - B; Ranked 6 for nutrient projects
22017	Monitor and Evaluate Nutrient Supplementation as a Tool for Increasing Production and Survival of Juvenile Chinook Salmon from Infertile Streams	PER, Ltd.	HP	Not a stand-alone project
22042	Evaluate the effects of nutrient supplementation on benthic periphyton, macroinvertebrates, and juvenile sturgeon in the Kootenai River	KTOI	HP	9; Yes - A; Ranked 3 for nutrient projects
22047	Salmonid response to fertilization: an experimental evaluation of alternative methods of fertilization	NWFSC	HP	8; Yes - A; Ranked 2 for nutrient projects
22005	An experimental evaluation of nutrient supplementation on juvenile salmonid fish abundance in nutrient-limited streams	ISU	RA	19;Yes - B; Ranked 5 for nutrient projects

Project ID	Title	Sponsor	Budget Category (U, HP, RA, DNF)	ISRP Recomm.
22034	Influence of marine-derived nutrients on juvenile salmonid production: a comparison of two nutrient enhancement techniques	USGS-BRD	RA	Yes - B; Not ranked
22055	Develop a Nutrient/Food-Web Management Tool for Watershed-River Systems	Battelle	RA	11;Yes - A; Ranked 4 for nutrient projects
22028	Design and Coordinate Nutrient Supplementation Evaluations in the Salmon and Clearwater Subbasins, Idaho	IDFG	DNF	Not Innovative
22029	Evaluate the ecological role of marine derived nutrients in areas artificially blocked to anadromous fish migrations.	CCT	DNF	Yes - B; Not ranked
22062	Evaluate the use of anaerobic digestion to produce nutrient supplements for trout and salmon	DE&S	DNF	Not Innovative

This year's call for innovative project proposals did not provide the guidance necessary to encourage submission of fertilization proposals with strong management application for two basic reasons. First, the definition of innovative proposals may have tended to limit the focus of project sponsors. One criterion for establishing the innovative nature of proposals was that a method or technology "has not previously been used in a fish or wildlife project in the Pacific Northwest." Although the nutrient supplementation is currently being tested in British Columbia, projects were able to pass the innovative test if the specific study proposed had not previously been done in the Columbia Basin. Many of the nutrient supplementation proposals proposed work which had been extensively studied in Canada, rather than build from that work to provide new insights.

A second flaw of this year's innovative project RFP is that, while it expressed particular interest in nutrient fertilization projects, no guidance was provided for the eventual use of that information. The unstated assumption was that, since marine nutrient inputs formerly provided by healthy salmon runs have been disrupted or eliminated in many streams, additional nutrient inputs are necessary to restore key ecological processes. While it is true that marine nutrient inputs have almost certainly declined in most areas, this has often been offset by new nutrient inputs from urbanization and use of agricultural fertilizers. None of the fertilization proposals demonstrated that nutrient levels in the study areas need supplementation, nor did they identify the nutrient levels which would be achieved through the proposed projects. This is a necessary step to evaluate project results and to avoid possible eutrophication problems in the study reaches and downstream reaches outside the study areas.

Ultimately, we would like to know whether stream fertilization could be an effective tool for restoring depressed salmon runs. Answering that question involves seven areas of uncertainty, which could be addressed by innovative projects:

1. Which Columbia Basin streams have low productivity and would potentially benefit from fertilization?
2. **Are ecological responses different for different types of fertilization (carcasses, carcass analogs, inorganic inputs, other)?**
3. Is there a significant increase in the risk of disease transmission if salmon carcasses are used as a nutrient source?
4. **What is the biological response of salmon and other fishes to fertilization (growth, condition, migration time/age, survival)?**
5. **Are the ecological and salmon responses different in different types of streams?**
6. What are the essential study design requirements to achieve comparable results across subbasins?
7. **What is the relative cost effectiveness of various fertilization techniques in terms of improved salmon survival?**

Questions in boldface were also indicated, in whole or in part, as key research needs in a Canadian manual on accelerating recovery of stream, river and pond productivity cited in the ISRP project review.

Judged against these questions, CBFWA rated three proposals as having the greatest probability of providing information useful for future management decisions. Project Number 22008 best evaluates nutrient cycling using two alternative fertilization techniques. Project Number 22042 proposes a mesocosm experiment that will assess if large-scale nutrient supplementation experiments are warranted for endangered Kootenai River white sturgeon. Project Number 22047 provides the best comparison of alternative fertilization methods, although the short duration of experiments (6 weeks) limits understanding of ecological nutrient cycling.

Two additional proposals could provide significant information with slight modification and better coordination. Project Number 22002 should choose stream types representative of the Columbia Basin as a whole and place more emphasis on evaluating the effect of fertilization on fish survival. Project Number 22017 is not an independent project, but could develop useful statistical tools for making comparisons across watersheds. This project should be coordinated with Project Number 22002.

The remainder of the fertilization proposals were judged to be of lower priority (requiring information developed by the priority, or could be accomplished through the regular proposal evaluation process), not fitting the innovative category (duration longer than 2 years, well studied elsewhere, of marginal new benefit), or not closely tied to management application.