ALL

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
525 NE Oregon Street
PORTLAND, OREGON 97232-2737

F/NWR5

July 12, 2002

Mr. Doug Marker
Director of Fish and Wildlife
Northwest Power Planning Council
851 S.W. Sixth Ave., Suite 1000
Portland, OR 97204-1348

Re: NOAA Fisheries Comments on Innovative Proposals

Dear Mr. ~~Marker~~ Doug:

This letter responds to the Northwest Power Planning Council's (Council) request for comments on proposals submitted under Bonneville Power Administrations Innovative Solicitation. We apologize for not providing these reviews by the requested June 28, 2002 date; however, we provided Dr. Bisbal a preliminary copy of the reviews on July 3, 2002 for use in developing the staff recommendation for the Council. By copy of this letter, we are also providing these evaluations to the Bonneville Power Administration (BPA), Corps of Engineers, Bureau of Reclamation, U.S. Fish and Wildlife Service, and the Columbia Basin Fish and Wildlife Authority (CBFWA).

The National Marine Fisheries Service (NOAA Fisheries) reviewed all proposals relating to anadromous fish. Compared to other Provincial reviews, relatively few proposals are designated as eligible for "Biop Credit." This is not to say that many of these proposals are not scientifically sound or wouldn't contribute to our understanding fish and wildlife resources and how they are affected by various components of their environment. As you will note in the "Comments" section of the spreadsheet, there are a number of projects that are both "innovative" and that can potentially contribute to our knowledge base for listed as well as non-listed species of salmon and steelhead.

NOAA Fisheries staff participated in the CBFWA process to evaluate and rate proposals. The CBFWA consensus recommendation provided to the Council on June 28, 2001 considers our technical evaluations of the proposals and input regarding priorities, and is largely consistent with NOAA Fisheries views.

The attached spreadsheet (Enclosure 1) is in the same format as those provided to the Council and BPA for earlier Provincial reviews and addresses the same parameters. Enclosure 2 provides an explanation of acronyms and criteria for Enclosure 1.

NOAA Fisheries appreciates the opportunity to provide this information and facilitate coordination between implementation of the Columbia River Fish and Wildlife Program and the 2000 FCRPS Biological Opinion. If you have further questions regarding our review of these proposals please feel free to contact John Palensky (503 231-2177) of my staff.

Sincerely,

Brian J. Brown

Brian J. Brown
Assistant Regional Administrator
Hydro Division

Enclosures

cc: Sarah McNary, BPA
Witt Anderson, COE
Ron McKown, BR
Bill Shake, USFWS
Rod Sando, CBFWA

National Marine Fisheries Service Review of the 2002 Innovative Projects
(Sorted by Project Number)

Enclosure 1

Project No.	Title	RPA Actions	ESU(s) Affected	Statement of Potential Biological Benefit	Already ESA Req?	Biop?	Comments
34001	Pilot Study: Spatial and Temporal Occurrence of Salmonid Pathogens in the Upper Middle Mainstem Subbasin of the Columbia Cascade Province	0	UCR SH, UCR SCH, UCR SFCH	Indirect benefits. This proposal describes the development and use of a multiplex method coupling PCR and DNA microarray analysis to detect infectious salmonid pathogens in water samples, and to use the method to characterize spatial and temporal occurrences of these pathogens in selected areas of the Columbia Cascade Province. This information would then be used in an attempt to identify possible sources of the pathogens, and determine the possible relationships between pathogen occurrence and specific water quality parameters. If successful, it has the potential to reduce disease in listed fish.	No	No	The methodology is well thought out, can be highly specific and extremely sensitive, and has been used for detection of human pathogens in environmental samples. The method has great advantages over standard microbiological culturing methods, and its multiplex nature is much more flexible than other sample concentration and PCR methods, allowing simultaneous detection of multiple pathogens in a single reaction. The strength of the proposed method and the data to be collected by it lies in the determination of the spatial and temporal relationships between the presence of a particular pathogen in different aquatic habitats, as outlined in Phase 3. Such information, when combined with future epizootilogical data on disease outbreaks in a specific location or habitat, will help in the determination as to whether certain habitat conditions, man-made or natural, contribute to infectious disease outbreaks that impact threatened and endangered salmon runs.
34002	Evaluate Spawning Protocols and the Reproductive Success of Salmonids in Hatcheries	184	Multiple	Uncertain benefits. Research/Hatchery project to assess differential reproductive success of individuals in a hatchery population. Question addressed is : what is the appropriate breeding protocol for salmon in hatcheries to minimize divergence from wild populations?	No	Yes	The proposal has RPA relevance due to potentially broad applicability to hatchery programs throughout Basin.
34003	Salmon Run Generator (SRG).	0	Multiple	Build and test a prototype Salmon Run Generator which is designed to greatly reduce turbine related mortality and eliminate the need for fish ladders.	No	No	Solid project. Worth pursuing. Has very large potential benefits to both fish and the power industry.
34004	Develop Computational Fluid Dynamics Model to Predict Total Dissolved Gas Below Spillways	133	Multiple	Indirect benefits. Potentially improves water quality by developing a model to evaluate design and operational concepts for reducing TDG generated by spillway operations at FCRPS projects and other dams. Has the potential to reduce mortality caused by high TDG levels.	No	Yes	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 pupose. The ISRP was more supportive and gave the proposal a #10 ranking because they felt that modeling air entainment in the plunge pool is particularly important to solve.

National Marine Fisheries Service Review of the 2002 Innovative Projects
(Sorted by Project Number)

Enclosure 1

Project No.	Title	RPA Actions	ESU(s) Affected	Statement of Potential Biological Benefit	Already ESA Req?	Biop?	Comments
34005	Application of DNA Fingerprinting Microarrays and Semi-Automated Data Analysis Methods for Salmonid Stock Identification in the Columbia Basin	0	Multiple	Uncertain benefit. Prove that DNA fingerprinting microarrays can accurately provide the genetic basis for fisheries managers to make near-real time, cost-effective, decisions related to wild and hatchery fish, and form basis for subsequently measuring genetic interactions between populations.	No	No	This proposal would use microarray technology to obtain genetic fingerprints of chinook salmon with the purpose of identifying the population or orgin of individual fish. This approach contrasts with gel based methods use to collect allozyme and microsatellite data. This technique is unproven for this application, but after sufficient development might be quicker and less expensive than microsatellite approaches.
34006	Assess Salmon Carcass Nutrient-Macroinvertebrate-Avian Relationships in Riparian Ecosystems of the Yakima Subbasin	0	None	Only indirect and not monitored benefits for salmonids. (Study will examine aquatic-terrestrial links between birds, macroinvertebrates, and salmon carcasses and carcass analogs being introduced into the system.)	No	No	Wildlife proposal
34007	New Life for dead stream	0	Bull trout	Water quality- Potential increase in survival if sediment is reduced and stream temperatures are reduced by restoration.	No	No	No attempt to show how the project meets the “innovative” criteria. This appears to be a basic restoration project.
34008	Use a Multi-Watershed Approach to Increase the Rate of Learning from Columbia Basin Watershed Restoration Projects	0	Multiple	Indirect Benefit. Analyze the effects of various restoration treatments on salmonids (specifically Chinook and Bull Trout) identifying both existing constraints and future opportunities for improving experimental designs, monitoring, and restoration programs.	No	No	This project will collect and organize data to identify what information is available to adequately test hypotheses and also to identify gaps in current knowledge to help prioritize future planning. There are two critically important regional goals that are served by this type of program – 1) maximizing the efficiency of information acquisition within specific monitoring project types, and 2) maximizing the efficiency of regional planning of future recovery actions and monitoring projects. This project closely relates to RPA 183 as defined in the BiOp. This proposal could be strengthened by more directly demonstrating how it will tie in with RPA 183.
34009	Net Pen Rearing Spring Chinook in Lake Osoyoos	0	UCR SCH, OR SOCK	No benefit to listed species. Evaluation/Supplementation project to increase abundance and diversity of spring chinook by rearing juveniles in floating pens in Lake Osoyoos to create a lake rearing population.	No	No	May be risks to existing sockeye population.

National Marine Fisheries Service Review of the 2002 Innovative Projects
(Sorted by Project Number)

Enclosure 1

Project No.	Title	RPA Actions	ESU(s) Affected	Statement of Potential Biological Benefit	Already ESA Req?	Biop?	Comments
34010	Visualization Tools for Information Discovery and Decision Support	0	None	No benefit to listed species.	No	No	There is absolutely no merit to this proposed work. There is no need for a computer based information discovery tool to support decision making on natural resource management issues in the Columbia River basin. The premise of this proposal is flawed: there is so much information appearing in reports and publications that decision makers cannot be properly informed to make optimal decisions. While it is true that the volume of reports generated by natural resource management agencies is daunting, the information content is so negligible that it is a trivial exercise to maintain a detailed understanding of the current state of affairs. Staying current on a technical topic is the responsibility of technical staff, their activities or lack thereof, and cannot be replaced by a glorified search engine. Finally, an expert search tool will not replace quality work and content in report, publication, and proposal presentation.
34011	Western Painted Turtle Habitat Restoration Project	0	None		No	No	Wildlife proposal - Not reviewed
34012	Sponsor A Smolt	0	UCR SH	Educational project - could be indirect benefit if public support of PIT tag program is high.	No	No	This proposal requests funds for project management and website development of a “sponsor a smolt” program. Public sponsorship of the “sponsor a smolt” program is presented as the innovative part of the project. However, the proposal emphasizes the tagging rather than the public program. The real question- whether this would be a viable funding source, is not addressed.
34013	Restore ecological structure and function to Grays Lake Using a Decision Support System	0	None		No	No	Wildlife proposal - Not reviewed
34014	Assessing Potential Biological and Toxicological Effects of Parental Transfer of Environmental Contaminants to White Sturgeon in the Columbia River	0	None		No	No	Sturgeon Project - Not reviewed

National Marine Fisheries Service Review of the 2002 Innovative Projects
(Sorted by Project Number)

Enclosure 1

Project No.	Title	RPA Actions	ESU(s) Affected	Statement of Potential Biological Benefit	Already ESA Req?	Biop?	Comments
34015	Neotropical Migratory Bird Habitat Restoration Project	0	None		No	No	Wildlife Project - Not reviewed
34016	Behavioral Motivation in the Evaluation of Culvert Designs for Juvenile Salmonid Passage	152	Multiple	Uncertain Benefit	No	Yes	This proposal describes interesting work that is needed to address the effects that culverts have on juvenile fish movement. A lack of description of the experimental design and methods, however, renders this proposal unsuitable for scientific review at this time.
34017	Low-Cost Thermal Imaging System for Aerial Remote Sensing Applications	0	None	Indirect benefit. Demonstrate that such a thermal -imaging system is a cost-effective and viable tool for gathering data and represents a significant opportunity for Columbia River System assessments and research.	No	No	FLIR imagery has proved useful for natural resource research and monitoring. However, the major barrier to its more general application is the cost of helicopter time. This proposed work is focused on the development of a fixed wing aircraft deployment of FLIR. In addition, the proposed work also will develop an approach to coupling FLIR-digital video imaging. While the concept of this proposal is sound and the work potentially useful, it is not sufficiently clear how useful and for what purpose the data generated by the proposed system might be. Is it the responsibility of the proposers to have fully established the potential utility of their product, or as “innovative” projects are they to be funded only with the hope of their products being incorporated into the repertoire of natural resource research, monitoring and assessment tools? Further background information regarding the the utility of the proposed system is needed. If done, and compelling, the cost savings realized by the development of a non-helicopter based deployment of this technology could be substantia
34018	Evaluate Engineering Conceptual Design and Field Application of Pisces Fish Passage Unit	149, 500	Multiple	Uncertain benefit. Creates fish passage improvement through inovative screening improvement. PISCES is a float-mounted water intake designed to prevent induction of fish into water withdrawal systems, including irrigation canals,penstocks for hydroelectric facilities, run of the river supply systems and industrial water withdrawal systems.	No	Yes	The device does not meet NMFS design criteria. The issues include facilitating debris removal, fry impingement and injury, and that the bypass venturi accelerator does not provide reliable safe fish passage. The ISRP finds that the device is too sketchily described, question the need for the device, and that its development is for private ownership.

National Marine Fisheries Service Review of the 2002 Innovative Projects
(Sorted by Project Number)

Enclosure 1

Project No.	Title	RPA Actions	ESU(s) Affected	Statement of Potential Biological Benefit	Already ESA Req?	Biop?	Comments
34019	Evaluate the Effects of Hyporheic Discharge on Egg Pocket Water Temperature in Snake River Fall Chinook Salmon Spawning Areas	190	SR FCH	Examines the effect of fine sediments on stream temperatures, through their effect on hyporheic exchange flows. Results could be used to evaluate hyporheic restoration as a tool for addressing problems of stream temperature, and thus helping to restore and maintain habitat quality for salmonids.	No	Yes	Well written proposal. The importance of hyporheic interactions in streams has received minimal attention. This research proposal seeks to examine a mechanism other than loss of riparian habitat that might result in higher stream temperatures. The proposal outlines the research needed to identify whether this mechanism is important with respect to temperature regulation. If fine sediments do alter thermal regimes in streams, then this work will emphasize the importance of addressing sediment issues in streams in general. This is a strong scientific proposal that has the potential to influence management and recovery programs.
34020	Fish Behavioral Guidance Through Water Velocity Modification PHASE ONE	86	Multiple	Demonstrate that bulk flows can be effectively, safely, and cost effectively generated to assist in guiding migrating juvenile salmonids. A further objective is to integrate this bulk flow with induced turbulence to provide multiple migrational cues to guide migrating juveniles to surface flow bypass systems.	No	Yes	There is potential utility for this work. Hydrosystem project passage is thought to be a major limiting factor to salmonid populations spawning above mainstem dams. The loss of migrational cues due to impoundment is further compounded by extreme physiological conditions generated by hydro project operations. Thus, there is considerable interest in directing the downstream migration of salmonid smolts, particularly into by-pass systems. This proposal addresses a novel method for directing migrating smolts into surface collectors in the slackwater directly adjacent to hydrosystem projects. While there is certainly the need for further research and development in this area, it is unclear if the proposed system will function as intended.However, since dam passage during downstream migration is a substantial source of mortality, innovative approaches are worth exploring. The proposal is poorly constructed, and it is difficult to determine exactly what is to be done; nonetheless some support for this project is warranted especially for the pilot phase with proper assessment and testing.

National Marine Fisheries Service Review of the 2002 Innovative Projects
(Sorted by Project Number)

Enclosure 1

Project No.	Title	RPA Actions	ESU(s) Affected	Statement of Potential Biological Benefit	Already ESA Req?	Biop?	Comments
34021	Using stable isotope ratios to explore positive or negative impacts of American shad on salmon and the aquatic community in the Columbia River	190	SRFCH, UCR SFCH, LCR CH	Potential indirect benefits. Use stable isotope ratios to examine American shad and salmon interactions (predation and competition).	No	Yes	Well-conceived, well-written and worthy of funding. It will quantitatively address the role of the invasive American shad in Columbia River food webs, which is important because juvenile shad are highly abundant and energy rich fish that have received little attention because of the timing of their emergence and migration through the river. The methods reflect the current state of knowledge for use of stable isotope analysis in ecological studies. Objective 2 will probably be the most difficult to achieve, owing to the diversity of potential sources and signals in the estuarine food web, but it should nonetheless improve our understanding of shad and fall chinook feeding ecology in the Columbia River. In summary, this is a very important set of questions, and the project is an excellent approach by respected scientists that should go a long way toward answering these questions.
34022	Evaluate the population structure of chinook salmon by combining inferences from ecological, demographic, and molecular genetic analysis	0	SR SSCH	Indirect benefit. Use molecular genetic markers to look at various characteristics of a population. An important aspect of the study will be the integration of genetic inferences with existing research describing ecological and demographic patterns, and the potential to interpret genetic structure over generations.	No	No	This proposal would use genetic data from microsatellite loci data to describe the population structure of chinook salmon in the middle fork of the Salmon River. This is the sort of basic research needed to manage this region. The molecular and statistical methods proposed have successfully been used in many similar studies, so this proposal is not particularly innovative, but it has a high probability of sucess.
34023	Laboratory, prototype, and field evaluation of undershot horizontal fish screen the the Hood River basin	500	MCR SH	Potentially reduces fish passage mortality by testing the concept of using an undershot screen, which would be used in areas with heavy sediment, to pass fish, sediment, and debris. The study design includes model, bench-scale and pilot scale testing of an undershot screen at a specific location of the Hood River.	No	Yes	As noted in the ISRP's comments, this proposal is well prepared, collaberative, and marginally innovative. If the undershot screen proves successful, it would be another tool to use in high bed load environments.
34024	Integrating remote sensing and topographic indicies to detect the impact of invasive species on critical winter elk forage areas	0	None		No	No	Wildlife Project - Not reviewed

National Marine Fisheries Service Review of the 2002 Innovative Projects
(Sorted by Project Number)

Enclosure 1

Project No.	Title	RPA Actions	ESU(s) Affected	Statement of Potential Biological Benefit	Already ESA Req?	Biop?	Comments
34025	Assess role of estuarine habitat in maintaining chinook salmon life history diversity in the Columbia River using remote PIT tag monitoring systems	158, 159, 196	Multiple	Indirect benefits. Determine the usefulness of PIT tag remote detection systems to monitor juvenile chinook salmon estuarine habitat useage.	No	Yes	This project ties in well with existing projects and should be pursued. PIT tag technology needs to be tested on this scale. The project puts forward a scientifically sound protocol for the evaluation of PIT tags in channel habitat.
34026	Studying the Impacts of Dam Passage on the Vestibular System in Fish	88, 89 ,90	Multiple	Indirect benefit. Evaluate the response of the fish vestibular system to mechanical stimulation based on dam passage conditions. Results of this research could influence the design and operation of fish dam passage routes such as spill ways, turbines, in-turbine screens, and juvenile fish bypass facilities.	No	Yes	The use of new techniques to make quantitative measures is certainly innovative and should be supported. There are some concerns with the use of Sensor fish to model what real fish experience. The Sensor fish does not swim, but flows as a passive particle. One might hypothesize that fish are able to sense and perhaps even capitalize on high order turbulence within the races and turbines in ways that plastic fish are not, and as a consequence not experience quite as challenging a mechanical loading. Are there data validating that the passive fish has the same time history of mechanical loading as the living fish? Also, when the body of a fish is subjected to loading – particularly if the loading has high frequency components – the vestibular system will see loads that are filtered by the impedance properties of the biomaterials lying between the skin and the inner ear. Is there any documentation that the accelerometers within the elastomeric fish experience the same loading spectrum as the vestibular system embedded within the skeleton of real fish?

National Marine Fisheries Service Review of the 2002 Innovative Projects
(Sorted by Project Number)

Enclosure 1

Project No.	Title	RPA Actions	ESU(s) Affected	Statement of Potential Biological Benefit	Already ESA Req?	Biop?	Comments
34027	Controlling the Distribution of American Shad (Alosa sapidissima) with Pulsed Ultrasound Near Fish Ladders and at a Sluiceway Entrance	0	None	No direct benefit to salmon. This project will try to contol the movements of Shad with ultrasound. This technique could potentially be used to keep Shad from interfering with summertime hydroacoustic sampling of juvenile salmonids at dams.	No	No	The proposed research will focus on developing techniques to exclude American shad from fishways in the Columbia River using pulsed ultrasound. The effects of shad (which are non-indigenous to the Pacific coast) on listed salmonids have not been determined, so efforts to control them seem premature. Of greater concern is the possiblity that this research could have unintended negative effects on listed salmonids. The proposal does not attempt to address the potential problems that could develop if listed adult salmonids are blocked by shad as they attempt to enter fishways where ultrasound treatments are conducted. Use of ultrasound to direct fish behavior has had only limited application and until a clearer need for this technology emerges, this work should be given low priority.
34028	Innovative Technologies for Mapping Large Woody Debris and Assessing Fish Distribution	0	LCR CH	Research. Indirect benefit through habitat survey and mapping. Could effect restoration strategies at some later time.	No	No	This seems to be more a test of technology than an innovative application of technology to Columbia Basin salmonid issues. Not consistent with Action 158 unless they develop a more cogent fish-related hypothesis that needs to be and will be tested by the proposed innovative approach.
34029	Geomorphic Controls on Salmonid Spawning Habitat in Mountain Drainage Basins of the Pacific Northwest	0	None	Indirect benefits. Develop and field test a model for predicting watershed-scale availability of salmonid spawning habitat as a function of channel hydraulics and sediment supply. This could provide a tool for ecosystem management at watershed scales.	No	No	This proposal is much stronger than the original proposal submitted in the Mountain Snake Province. The proponents put together a much better proposal this time because they have incorporated sediment supply. This project could be very helpful in identifying potential spawning reaches and places to collect data to better assess population dynamics.
34030	Enhancing Instream Flow by Adopting Best Agricultural Management Practices	183	Multiple	Research - Possible indirect benefit if results establish document increased flows and practice is implemented by significant numbers of agricultural landowners.	No	Yes	Project evaluates “no-till” agriculture management practices only. Not sure how this empirical research could be construed to be innovative by itself

National Marine Fisheries Service Review of the 2002 Innovative Projects
(Sorted by Project Number)

Enclosure 1

Project No.	Title	RPA Actions	ESU(s) Affected	Statement of Potential Biological Benefit	Already ESA Req?	Biop?	Comments
34031	Biological and Economic Feasibility of Reintroducing Fishwheels to the Columbia River System	0	LCR CH, LCR SH, LCSW COHO	Indirect benefits. Harvest benefits, testing the feasibilityy of reducing harvest impacts on listed non-RPA fish by using non-lethal fishing gear (fish wheel). Potential future application to ESUs addressed by the RPA.	No	Yes	Not particularly innovative. As in past tests of fish wheels, success of catching fish will be site-specific. Thus, because this proposed test does not involve fisheries directly affecting RPA ESUs, its relevance to the Biop would be minimal.
34032	Otolith Marking using Portable Mist Incubation	0	Multiple	Indirect benefit. Mark enhanced wild fish stock otoliths by using a portable mist incubation system. Otolith marking will allow for more accurate run-reconstruction by sampling spawn carcasses.	No	No	This project is designed to develop an otolith marking system using a portable mist incubation system. The proposal does not adequately describe the technology or justify its need as it is written. The author's indicate that mist incubation works effectively on all species of salmon eggs but cite no published references to support this claim. Furthermore, it is not clear that this technology even if feasible will be any more effective or efficient than current technologies for thermal marking. Some preliminary data and more detailed justification and description of the experimental design and methods are required.
34033	Demonstrate novel methods of mist incubation and mechanical egg planting in salmon restoration.	0	Multiple	Indirect benefit. Demonstration of technology used to out-plant eyed salmon eggs incubated in mist incubation with the goal of producing a manual for protocols, methods and procedures to effect restoration.	No	No	This project proposes to test the efficacy of mist incubation and mechanical egg planting for restoration of depleted salmon. Although the technology proposed may be innovative, the authors provide little evidence that this technology is effective (i.e. lack of peer-reviewed citations) and the key component of the proposed research is not the rearing technology but rather identification of habitat and environmental factors that will increase survival and make egg-plants successful (This is true of other egg planting strategies as well). Unfortunately the authors provide only cursory methodological and no analytical detail for how they will assess environmental quality in these experiments.

National Marine Fisheries Service Review of the 2002 Innovative Projects
(Sorted by Project Number)

Enclosure 1

Project No.	Title	RPA Actions	ESU(s) Affected	Statement of Potential Biological Benefit	Already ESA Req?	Biop?	Comments
34034	High-Speed Fish Screen for Irrigation Diversion	149, 500	MCR SH, MCR SCH	Benefit unlikely. Intended to create fish passage improvement through the installation of high speed vertical fish screens at the facility. However, see Comments for concerns.	No	No	There is no reason to employ experimental technology at this site and the proposal does not include any sort of biological evaluation or any attempt to follow AFS or NMFS guidance for developing experimental technology. In addition, the proposal fails to rectify a serious operational problem, that being no way to remove debris from the screen face and pass it so that it will not re-impinge. Finally, the project engineer does not identify any experience in fish passage design. The ISRP recommends not to fund the project because the proposal is inadequate.
34035	Chinook Salmon Abundance Monitoring Using an Acoustic Camera	179,180,193	SR SSCH	None	No	No	There appears to be little merit to this proposed work. There is little, if any, need for the development of a novel technologically-based method for counting adult spring/summer chinook salmon. High quality population estimates are essential to the management of all anadromous fisheries resources. However, additional counts of adult fish with no assessments of accuracy and precision will not clarify any resource management issues. The proposed counting system will not census the adult population. Rather it will sample the population given that it will be as susceptible to blow-out during high flow events and confusion by submerged debris. True sampling approaches based on the biology of the organism (e.g., sampling based on spawning fish, or constructed redds) allow both the construction of accuracy and precision estimates of the data, and ensure biologically relevant information. This project does not accomplish this.
34036	Development and Demonstration of Automatic Calibration Tools for Models to Assess Biological Performance of Habitat Restoration Strategies	0	SR SSCH	Indirect benefits. Develop and demonstrate an automated calibration tool capable of simultaneously calibrating a sequence of distributed physical and biological process models assembled to assess efficacy of salmon recovery and habitat restoration strategies.	No	No	This proposal describes a large modeling exercise. The key question is the quality of data that are going into the hydrologic model. It may work for some basins, but not in others due to the lack of good streamflow and precipitation data. Proposal is only worth pursuing if the sponsors can prove the the data going into the model is of good quality.

National Marine Fisheries Service Review of the 2002 Innovative Projects
(Sorted by Project Number)

Enclosure 1

Project No.	Title	RPA Actions	ESU(s) Affected	Statement of Potential Biological Benefit	Already ESA Req?	Biop?	Comments
34037	Analysis of alternative hatchery and fishery configurations in the Columbia River Basin	0	Multiple	Indirect benefits. Harvest/Hatchery project to develop methods and analytical procedures to evaluate harvest/production scenarios.	No	No	Lacks details needed to evaluate/determine innovation.

Enclosure 2. Explanation of Acronyms and Criteria in Enclosure 1

Reasonable and Prudent Alternative (RPA) Action Item(s)

BASE = an ongoing project that affected the survival of broods returning as adults during the base period and which will continue to influence survival at the same rate in the proposed project. The project therefore comprises part of the environmental baseline presumed in the NMFS 2000 Federal Columbia River Power System biological opinion (2000 FCRPS Opinion).

0 = an action that is not called for (specifically or generically) by provisions of the RPA.

1-199 = RPA action number for a project that is called for (specifically or generically) and thus may implement (in whole or part) one of the RPA action items in the NMFS 2000 FCRPS Opinion. This may include ongoing projects that did not affect the survival of broods returning as adults during the base period.

400 = a riparian protection project that is consistent with the riparian restoration intentions of the RPA but does not fully meet the two criteria of RPA Action 153: (1) the easements are not part of the Conservation Reserve Enhancement Program (CREP) or other agricultural incentive program; and (2) the easements are not long term (> 15 years) or permanent.

500 = a flow, passage, screening, or water acquisition/lease that is consistent with the intentions of the RPA but is not in one of the 16 priority subbasins (therefore not associated with RPA 149).

600 = an ongoing conservation hatchery program consistent with the safety-net concept, the continuation of which was implicitly assumed but not explicitly identified in RPA Action 176. Specifically, this category applies to: (1) the ongoing Snake River sockeye salmon captive broodstock program; (2) the ongoing Snake River spring/summer chinook captive rearing program; (3) the genetic cryopreservation project; and (4) other ongoing projects, yet to be identified, that may clearly fit the safety-net concept. Continued implementation of these programs is also consistent with RPA Action 177.

ESU(s) Affected

The following is a list of acronyms used in the table. Listed evolutionarily significant units (ESU) are in **BOLD** and the eight listed ESUs included in the 2000 FCRPS Opinion's reasonable and prudent alternative are indicated by (*).

SR SSCH	Snake River Spring/Summer Chinook Salmon(*)
SR FCH	Snake River fall Chinook Salmon(*)
SR SOCK	Snake River Sockeye Salmon(*)

SR SH	Snake River Steelhead(*)
UCR SCH	Upper Columbia River Spring Chinook Salmon(*)
UCR SH	Upper Columbia River Steelhead(*)
UCR SFCH	Upper Columbia River Summer/Fall Chinook
OR SOCK	Okanogan River Sockeye Salmon
LW SOCK	Lake Wenatchee Sockeye Salmon
MCR SH	Middle Columbia River Steelhead(*)
MCR SCH	Middle Columbia River Spring Chinook Salmon
LCR CH	Lower Columbia River Chinook Salmon
LCR SH	Lower Columbia River Steelhead
LCSW COHO	Lower Columbia/Southwest WA Coho Salmon
SWW SH	Southwest Washington Steelhead (*below Cowlitz on WA side; below Willamette on OR side*)
COL CHUM	Columbia River Chum Salmon(*)
UWR CH	Upper Willamette River Chinook Salmon
UWR SH	Upper Willamette River Steelhead
MULTIPLE	Four or more ESUs affected by project
N/A	Affected species is not a Columbia River basin salmon or steelhead
NONE	Project will have no biological effect on any species

When the affected species is a salmon or steelhead of unknown lineage, or one that NMFS has not assigned to an ESU (perhaps because it is a composite hatchery stock), the following acronyms are used:

SPR CHN-U SMR CHN-U FALL CHN-U COHO-U STHD-U SOCK-U

Statement of Potential Biological Benefit to ESU

Text Describing Benefit = the project as proposed is likely to provide a direct or indirect benefit for the affected ESUs if the project is successfully implemented.

N/A = the project is not likely to provide a biological benefit or the project is likely to benefit some fish or wildlife species, but not the salmon and steelhead stocks described above.

Already ESA Required?

YES = the project is already required by an existing NMFS ESA document, or is likely to be required as a result of an ongoing NMFS ESA consultation. ESA documents include Section 7 biological opinions or proposed actions in informal consultations, and Section 10 take permits and associated HCPs.

NO = project is not already required by an existing NMFS ESA document or likely to be required as a result of an ongoing NMFS ESA consultation, or the proposal would accelerate completion of HGMPs or subbasin assessments and plans or go beyond requirements established in Section 7 or 10 processes/documents. (See "NMFS Guidance: Giving Credit for Offsite Mitigation" for further clarification).

Biop?

YES = all four of these conditions are met:

- There is a number greater than zero in the "RPA Action Items" column

- At least one of the eight ESUs that are the subject of the 2000 FCRPS Opinion's RPA is included in the "ESU(s) Affected" column.

- There is a beneficial effect described in the "Statement of Potential Biological Benefit to ESU" column.

- There is a "NO" in the "Already ESA Required?" column.

NO = any of the four conditions described above is not true

Comments

Staff notations are included to help explain some of the determinations in the other columns. These comments by NMFS reviewers should be considered only with regard to the specific proposal and should not be construed or interpreted to indicate any priority or ranking relative to other proposals.