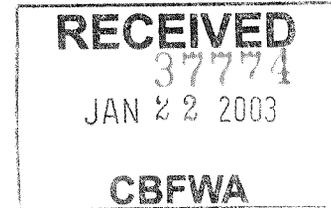




UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
525 NE Oregon Street
PORTLAND, OREGON 97232-2737

F/NWR5

January 21, 2003



Mr. Doug Marker
Director of Fish and Wildlife
Northwest Power Planning Council
851 S.W. Sixth Ave., Suite 1100
Portland, OR 97204-1348

Re: NOAA Fisheries Comments on the Mainstem and Systemwide Project Proposals

Dear Mr. ^{Doug}Marker:

This letter transmits the results of the National Marine Fisheries Service's (NOAA Fisheries) review of proposals submitted under Bonneville Power Administration's (BPA) solicitation for the Mainstem and Systemwide "Province." By copy of this letter we are also providing these evaluations to the BPA, the U.S. Army Corps of Engineers, the U.S. Bureau of Reclamation, the U.S. Fish and Wildlife Service, other affected Federal agencies and the Columbia Basin Fish and Wildlife Authority (CBFWA).

The Mainstem and Systemwide Province covers a diverse array of activities that are of significant importance to the basin as a whole and particularly to listed salmon and steelhead. Among these activities are research, monitoring, and evaluation projects needed to determine the efficacy of offsite mitigation activities, monitoring and collection of migration timing and survival information on smolts and adults, support for PIT tag development and marking of fish, genetic studies, captive broodstock programs, and support for the infrastructure necessary to provide technical and management review of proposals. CBFWA in its recommendations to the Northwest Power Planning Council (Council) chose to include a new category of priority called "Core" projects. In general, these were projects for which an "Urgent" or High Priority" designation wasn't appropriate but whose continuation was imperative. As a member of CBFWA, and a participant in their prioritization process, we concur with the priority designation of certain activities fundamental to the Columbia River Basin Fish and Wildlife Program as core activities. As the Council deliberates on its recommendations on the Mainstem and Systemwide proposals in light of the BPA financial crisis, we urge careful consideration of the importance of these activities to the overall effort to rebuild and recover the basin's anadromous fish stocks.

Several Council members have expressed concern regarding disparities in the Biological Opinion (BiOp) RPA action item designations provided separately by NOAA Fisheries and BPA. Our initial designations are provided for consideration by the Council and BPA as you complete your reviews and for project sponsor's consideration as they respond to comments. To the extent that others view the designations differently or have additional information or explanation with a bearing on these designations, we are open to a comparison of the basis of differences and to a reconciliation of these differences or inconsistencies. In addition, we caution the Council that the



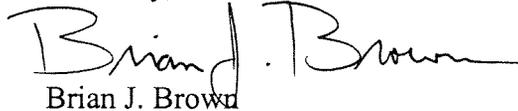
RPA action item designations provided by NOAA Fisheries do not necessarily mean that every task proposed in a project targets the RPA. Rather it indicates that at least a portion of the work proposed "implements in whole or in part," one or more of the RPA action items.

As in other provinces, this review addresses only the suite of proposals that were submitted for funding in the Mainstem and Systemwide Province. The scope of projects submitted may not be sufficient to address all of the RPA actions that apply to this province. In the past, we have provided the Council with a "Gaps" letter that highlighted actions that were not being addressed through the proposal process. NOAA Fisheries is currently preparing our "*Findings Regarding Adequacy of the FCRPS Action Agencies 2003 Annual Implementation Plan.*" These findings will provide BPA and the other Action Agencies with a full and current assessment of where we believe additional effort in ongoing activities and initiation of new work is necessary. We expect the report be available to the Council and others within the next several weeks. We believe this document will greatly assist the Council in its deliberations relative to the Mainstem and Systemwide Province as well as in its review of all FY2003 implementation actions. In addition, however, we will synthesize the specific Mainstem and Systemwide Gaps from the findings document and provide it to you under separate cover.

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 (502 231-2177) of my staff.

Sincerely,



Brian J. Brown
Assistant Regional Administrator
Hydro Division

Enclosures

cc: Sarah McNary, BPA
Lorri Bodi, BPA
Witt Anderson, COE
Jim Fodrea, BOR
Bill Shake, USFWS
Mary Lou Soscia, EPA
Paul Anderson, USFS
Paula Burgess, BLM
Keith Hatch, BIA
Rod Sando, CBFWA

MAINSTEM AND SYSTEMWIDE PROVINCIAL REVIEW PROJECTS

NMFS' Assesment with Respect to 2000 FCRPS Biological Opinion

Project Number	Project Title	RPA Action	ESU(s) Affected	Statement of Potential Biological Benifit to ESU	Already ESA Required?	Biop?	Comments
35001	Habitat Monitoring and Restoration Program for the Lower Columbia River and Columbia River Estuary	160 161 163	Multiple		No	Yes	Project withdrawn
35002	Determine origin, movements and relative abundance of bull trout in Bonneville Reservoir.					No	Not Reviewed
35003	Vitality based studies of Delayed Mortality	186 187	Multiple	Indirect. Modeling and lab experiments to test specific applications of a Vitality Test Chamber which may be able to quantify the effect of dam passage routes on SAR, the seasonal variation in transportation differential delayed mortality, hatchery effectiveness, and optimal hatchery rearing conditions.	No	Yes	Possibly redundant to other studies. This proposal, if funded, should be completely integrated with the COE's work and the work of others.
35004	Harvest Model Development	0	Multiple	Indirect biological benefits.	No	No	Proposal strives to be responsive to RPA 165, but lacks support of the managers who would use the model. Even the sponsor acknowledges that this is a fatal flaw. Appears to unnecessarily duplicate a NMFS-funded project.
35005	Independent Economic Analysis Board					No	Not Reviewed
35006	Use of Mainstem Habitats by Juvenile Pacific Lamprey (Lampetra tridentata)					No	Not Reviewed

MAINSTEM AND SYSTEMWIDE PROVINCIAL REVIEW PROJECTS

NMFS' Assesment with Respect to 2000 FCRPS Biological Opinion

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35007	Evaluate Restoration Potential of Snake River Fall Chinook Salmon Spawning Habitat	155	SR FCH	If research objectives are met there is potential to increase survival by restoring and expanding available spawning areas for SR FCH in the mainstem.	No	Yes	Well considered research proposal that specifically addresses objectives of Action 155.
35008	Systemwide Lamprey Program Coordinator					No	Not Reviewed
35009	Evaluate Status of Pacific Lamprey in the Willamette River Subbasin					No	Not Reviewed
35010	An Interactive Biodiversity Information System for the Columbia River Basin	198	Multiple	Indirect. Upgrade and expand existing IBIS database to include more spatial and non-spatial data, advanced query capabilities, and decision support tools, and mapping capabilities useful to researchers and decision makers.	No	Yes	The proposal represents a substantial development of a stand-alone DBMS with the addition of data and mapping and Internet capabilities. It would represent a fully functional end-to-end information system, with custom query tools, all for a subset of regional data. While each of the tasks has the potential to improve information system delivery, specifically by overcoming technical constraints with the existing IBIS system, and by expansion to new data sets, the proposal does not document well the extent of these claims. There also appears to be potential for overlap with other data collection institutions.
35011	The Floating Net Pen Transportation System Pilot Project	0	Multiple	Potentially increases the survival of transported fish by providing more natural migration conditions through the use of net pens rather than barges. This may allow the transported fish to obtain better directional preference.	No	No	This proposal has little potential biological benefit. The use of net pens as an appropriate transport vessel is very questionable. The pens are unlikely to maintain rigidity and there would be concerns about the ability of the transported fish to keep pace with the pen's movement. The concept has many potential shortcomings that probably outweigh the benefits.

MAINSTEM AND SYSTEMWIDE PROVINCIAL REVIEW PROJECTS

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35012	Spatial scales of homing and the efficacy of hatchery supplementation of wild populations	184	Multiple	Indirect. The project will describe the spatial and temporal patterns of homing and spawning by wild salmon and hatchery-reared salmon and to examine the physiological changes that occur in the olfactory system during the process of imprinting. Results from these studies will provide insight into the process of homing, straying and spawning site selection, interactions and success of hatchery and wild spawners, and the efficacy of supplementation and acclimation sites in salmon recovery.	No	Yes	NMFS Proposal. Inappropriate to comment.
35013	Species- and site-specific impacts of gas supersaturation on aquatic animals	131	Multiple	Indirect benefit. The research proposed will yield information basic to establishing site specific TDG standards for the mainstem. This project will provide the necessary information that could lead to improved water quality in relation to harmful TDG (s).	No	Yes	The proposal addresses specific recommendations made in the Mainstem/Systemwide Province Water Quality Program Summary, Future Needs section III. D. The proposal also implements the USFWS BiOp on the FCRPS - USFWS 8.2.2, 10.A.2.4 The state water quality agencies have indicated a willingness to permanently modify the water quality standard or establish site-specific standards for TDG for the Columbia and Snake River FCRPS projects. The states' support evaluation of the appropriateness of the water quality standard in terms of TDG impacts to aquatic species. Any revision would proceed through normal scientific review of the standard to ensure full beneficial use protection. The results of these projects would provide a technical basis for these evaluations.

MAINSTEM AND SYSTEMWIDE PROVINCIAL REVIEW PROJECTS

NMFS' Assesment with Respect to 2000 FCRPS Biological Opinion

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35014	Measurement of Quantitative Genetic Variation Among Columbia River Basin Chinook Propagation Programs	184	Multiple	Indirect. This project will examine genotype-environment interactions and attempt to determine if incubation performance of a stock is related to life history performance and if incubation success could be used as a predictor of expected performance through the adult stage. Results of study may provide guidance in identifying and prioritizing populations for conservation activities.	No	Yes	The proposal will attempt to assess the quantitative genetic basis to phenotypic variation in life history traits through a study (using a half-sib breeding design) to assess Genotype x Environment interactions in traits associated with early development. However, there are some concerns about the experimental design. The design as described cannot directly estimate Genotypic x Environment interactions. Focusing on fitness traits associated with early life, e.g., egg to fry survival, assumes that there is a sufficiently variable genetic component to this trait, which may not be the case. There may be other phenotypic traits that would better demonstrate adaptive variation. Finally, the relevance of genetic drift to this experiment seems overstated in this proposal.
35015	Replicated stream system for the evaluation of hatchery and wild juvenile salmonid interaction and development of innovative culture technologies	0	Multiple, but none are ESA listed	Indirect. Set up a facility consisting of 16 experimental stream channels. As a first experiment in the channels, isolate the interactions between wild and hatchery fish.	No	No	The proposal is basically for the construction of experimental facilities and does not have any direct relevance to ESA-listed species. However, there is a possibility that the 16 experimental stream facilities proposed in this project could be used to investigate issues of relevance to listed species, but the proposal does not spell this out. Future research at the proposed facility would target fall chinook, but there is no evidence in the proposal of transferability to other populations, ESU's, or species. The use of control streams could advance research on issues concerning hatchery-wild interactions in streams but the proposal does not address whether 16 "streams" could truly be constructed as replicates and what the experience in other such studies has been. The proposal does not justify the origin of the proposed design of 16 replicate streams. It is not clear in the proposal why fall chinook will be used and why these fish would come from Hanford.
35016	A Pilot Study to Test Links Between Land Use / Land Cover Tier 1 Monitoring Data and Tier 2 and 3 Monitoring Data	180 181	Multiple	Indirect benefits. This work links time series LU/LC data to field data to strengthen understandings of change in riparian and aquatic resources and to update and refine monitoring on the ground/river in floodplain of Willamette River for population and habitat status for key fish species.	No	Yes	NMFS proposal. Inappropriate to comment.

MAINSTEM AND SYSTEMWIDE PROVINCIAL REVIEW PROJECTS

NMFS' Assesment with Respect to 2000 FCRPS Biological Opinion

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35017	Inventory and Synthesis of Physical Process Models and Methods to Supplement Habitat Conditions Analysis and Subbasin Planning	0	None	Indirect if any. Inventory and synthesize existing physical process tools to develop a database useful in habitat analyses and strategic planning.	No	No	The linking of models is something that does not lead to scientifically sound analysis. This project is not well thought out. It presents many ideas but no clear linkages between physical processes. Additionally, there is not enough information in the methods to provide for a more detailed review.
35018	Evaluate recreational and commercial mark-selective fisheries.	164 167	Multiple	Indirect benefit by improving estimated effects of selective fisheries. Direct benefit to the extent fishery techniques are developed and employed that reduce incidental fishing mortality.	No	Yes	The development and deployment of selective fisheries is called for in the BiOp (164), as is research to improve estiimates of incidental mortalities (167). The use of MS-222 (an anesthetic not approved for immediate consumption) in close proximity to a consumptive fishery should be reconsidered.
35019	Develop and Implement a Pilot Status and Trend Monitoring Program for Salmonids and their Habitat in the Wenatchee and Grande Ronde River Basins	180	Multiple	Indirect. The proposed work may result in indirect biological benefit through the development of regional status monitoring programs.	No	Yes	NMFS proposal. Inappropriate to comment.
35020	Regional Project Effectiveness Monitoring Program for Columbia River Basin Listed Anadromous Salmonids.	183	Multiple	Indirect. Coordinate effectiveness monitoring projects across the region, as well as development of statistically rigorous design in those experiments. It will aid in determining the effects of habitat actions on salmonids.	No	Yes	NMFS proposal. Inappropriate to comment.
35021	Purchase And Evaluation of Automated Marking and Tagging Systems (MATS)	174	Multiple	Increase survival of listed fish by enabling mark selective fishing techniques where unmarked (listed) fish can be released, while also contributing to resolving the masking effect of hatchery fish on the status of natural populations.	No	Yes	RPA 174-3 requires the AA's to contribute to marking of hatchery production to enable selective fisheries and reduce the masking effect of hatchery production as described in RPA 182.

MAINSTEM AND SYSTEMWIDE PROVINCIAL REVIEW PROJECTS

NMFS' Assessment with Respect to 2000 FCRPS Biological Opinion

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35022	Habitat Mitigation Tracking System	0	Multiple	Indirect. Project is to assist BPA in meeting its habitat mitigation obligation as specified under RPAs 180 and 183 in the FCRPS Biological Opinion.	No	No	The AA/NMFS RM&E workgroup states that this proposal is not relevant to RPA 180 and 183 because it doesn't address monitoring or implementation of specific projects as identified under those RPA's in the BIOP. Rather it requests funds to develop a programmatic structure.
35023	Establish Relationship between Fish Passage Survival and Turbine Operating Efficiency	88	Multiple	Benefits are indirect. The research would try to determine whether passage survival through multiple turbines at McNary are the same and whether the point of peak operating efficiency is correlated with peak fish survival.	No	Yes	This proposal is redundant. The Corps did this last year (2002 field season) and the results should be available soon. The Corps used radio tags instead of acoustics. Using acoustic tags for indirect survival has not been proven and will need to be developed, which could be costly. NOAA Fisheries believes there needs to be an accuracy of plus or minus 2 percent (not a 3 percent allowance that is in the proposal). Increasing the accuracy would also increase the cost of the proposal.
35024	Evaluating the sublethal impacts of current use pesticides on the environmental health of salmonids in the Columbia River Basin.	39	Multiple	Indirect. This project will evaluate the sublethal impacts of pesticides on the health and performance of fish and, for salmon, relate sublethal toxicity in individual fish to the viability and genetic integrity of native populations in the Columbia River Basin.	No	Yes	NMFS proposal. Inappropriate to comment.
35025	Optimization of FCRPS Impacts on Juvenile Salmonids: Restoration of Lower-Estuary and Plume Habitats	194	Multiple	Indirect. This project centers around understanding the physical oceanographic processes in the estuary plume and will form the basis for understanding salmonid use of the plume.	No	Yes	Directly addresses RPA 194. This is essentially a physical oceanographic modeling project.
35026	On-line Subbasin Planning/Watershed Newsletter	0	Multiple	No biological benefit. Delivers on-line news, information about Columbia Basin subbasin planning and other locally-based fish and wildlife restoration efforts to public and private stakeholders and interested parties.	No	No	Education and outreach are critically important elements of effective development and implementation of subbasin plans. However, these are outside the scope of Action 154.

MAINSTEM AND SYSTEMWIDE PROVINCIAL REVIEW PROJECTS

NMFS' Assessment with Respect to 2000 FCRPS Biological Opinion

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35027	Evaluation of Two Captive Rearing Methods for Assisting with Recovery of Naturally Spawning Populations of Steelhead and Coho Salmon	184	SWW SH LCR CH LCSW COHO	Indirect. Investigate two hatchery methodologies that can potentially assist with recovery of naturally spawning populations of steelhead and coho.	No	Yes	The proposal is of biological relevance to ESA-listed species. Specifically, the steelhead aspect of the proposal may provide a viable alternative to "broodstock mining" and addresses genetic bottlenecks for conservation hatchery programs that will be seeking to obtain and utilize local stocks (the thrust of many hatchery reforms). The proposal targets ESUs for listed species as follows: Steelhead: Southwest Washington ESU, Coho salmon: Lower Columbia River, Southwest Washington coast ESU, Chinook salmon: Lower Columbia River ESU (naturalized population in Abernathy Creek). The proposal includes more than one listed species and ESU, and may have transferability to many others. As a side benefit, this technique, if successful, might have direct application to Safety Net Artificial Propagation Programs. The study design is adequate and the proposal is well written.
35028	Evaluate White Sturgeon Nutritional Needs & Contaminant Effects Influenced by the Hydroelectric System					No	Not Reviewed
35029	Transfer IHN virus genetic strain typing technology to fish health managers	184	Multiple	This project provides IHNV clade typing services for a number of fish health managers at hatcheries and in ESU captive broodstock/rearing programs who need the information for managerial decisions on the fate of infected stocks. Often the decisions involve the release of hatchery fish in areas where they may interact and impact wild, ESA-listed stocks.	No	Yes	This project has a strong benefit to listed ESUs in the Columbia River Basin for several reasons. First, this group has provided IHNV clade typing services for a number of hatcheries and in ESU captive broodstock/rearing programs that needed the information for decisions on the fate of infected stocks. Often the decisions involve the release of hatchery fish in areas where they may interact and impact wild, ESA-listed stocks. Funding the proposal will provide the means to continue this critical function in the near-term. Secondly, the proposal will increase the knowledge of M clade IHNV and its geographical distribution which aids in decision-making regarding the disposition or transfer of infected fish. And last, the proposal seeks funding for transfer of the typing technology to regional fish health labs, in order to standardize the technology (methodology, equipment, and phylogenetic analysis software) among all of the involved laboratories in the basin.

MAINSTEM AND SYSTEMWIDE PROVINCIAL REVIEW PROJECTS

NMFS' Assesment with Respect to 2000 FCRPS Biological Opinion

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35030	Evaluate potential to enhance spawning of summer/fall chinook salmon in the tailrace of Chief Joseph Dam, Columbia River	0	UCR SFCH	Benefits are indirect. The research would evaluate the potential to enhance spawning conditions in the mainstem below Chief Joseph Dam.	No	No	Benefits unlisted fish.
35031	Tagging Study Technical Committee	9 45 46	Multiple	Benefits are indirect. This project would attempt to establish a forum - the Tagging Study Technical Committee - to assist the region in mapping and tracking PIT-tag studies to help identify gaps and overlaps and to coordinate funding and implementation of studies.	No	Yes	The ISRP supports the coordination proposal but questions whether it would be best to create another forum. NOAA Fisheries also has concern about creating another group for this function.
35032	Assess the Feasibility of Reducing Predation on Juvenile Salmonids in the Columbia River Through Operation of the Hydropower System	100 105	Multiple	Benefits are indirect. Evaluation of hydrosystem manipulation might reduce predation on migrating juvenile salmon.	No	Yes	The proposal directly address Action 105 and is the only proposal to date that would do so. However, application of the results of this work will likely be quite limited due to the concerns raised by the RME and ISRP reviews. A couple of those concerns include the operational feasibility of some of the options and an incomplete consideration of other options that may be more effective at disrupting a predator's life history.
35033	Collaborative, Systemwide Monitoring and Evaluation Program.	180	Multiple	Indirect. Collaborative effort among agencies to document existing monitoring data, and assess the strengths and weaknesses of existing monitoring and evaluation efforts through workshops and work groups.	No	Yes	NMFS is included in proposal sponsors. Comment is inappropriate.

MAINSTEM AND SYSTEMWIDE PROVINCIAL REVIEW PROJECTS

NMFS' Assesment with Respect to 2000 FCRPS Biological Opinion

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35034	Fish Behavioral Guidance Through Water Velocity Modification PHASE ONE	0	Multiple	If effective, this measure would increase inriver passage survival of juvenile fish by increasing the bypass entry rate upstream of large mainstem dams and, in turn, avoiding more harmful routes.	No	No	This proposal is redundant. While this is an idea in need of further assessment in the context of salmon passage, the USGS-BRD is already engaged in their fourth year of studying induced turbulent flow potential relative to fish guidance (with funding through annual Columbia River Fisheries Mitigation appropriations). At first glance, this proposal would implement RPA action 86. But that RPA Action is to be specifically implemented by the Corps, not through the Direct Program.
35035	Incorporating Pit Tag Technology to Evaluate and Monitor the Reintroduction Effort for Anadromous Salmonids in the Upper Cowlitz Watershed	0	LCR CH LCSW COHO LCR SH	No biological benefits for RPA ESUs. Research and monitoring benefits assessment of reintroduction efforts and surface bypass collector in Cowlitz River	No	No	Does not involve fish covered by the RPA
35036	Identify the mechanisms of stranding of juvenile fall chinook salmon in the Hanford Reach		UCR SFCH	Benefits are indirect. The goal of this project is to identify the mechanisms of juvenile fall chinook stranding in the Hanford reach to provide Hydromanagers with tools for minimizing the losses of fry due to hydro operations.	No	No	Benefits unlisted fish
35037	Measuring the potential for domestication selection of spawn timing in chinook captive and supplementation programs; implications for recovery.	184	FALL CHN-U	Indirect biological benefits, assessment of domestication selective pressure. Does not involve fish covered by the RPA.	No	No	Though valuable research, useable results will be a long time coming.

MAINSTEM AND SYSTEMWIDE PROVINCIAL REVIEW PROJECTS

NMFS' Assesment with Respect to 2000 FCRPS Biological Opinion

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35038	Develop Computational Fluid Dynamics Model to Predict Total Dissolved Gas Below Spillways	0	Multiple	Benefits are indirect. The proposal assumes a fish survival benefit, based on water quality improvements. If this study leads to a better understanding of total dissolved gas mechanics, it may allow improved spillway operations that could benefit both juvenile and adult migrants.	No	No	This proposal is not directly linked to an RPA Action. It would, however, increase understanding of total dissolved gas dynamics in the near tailrace zone, but these dynamics are already understood to a reasonable degree by near-field dissolved gas studies, and lessons learned from the Dissolved Gas Abatement Study (DGAS). The real challenge is to improve gas transfer predictability between the Bonneville spillway, and the Camas dissolved gas monitoring station - which has been only approximately defined. This study does not address those important issues. The study is redundant.
35039	The influence of hatcheries and their products on the health and physiology of naturally rearing fish	184	Multiple	Indirect biological benefits, assessment of BKD transmission between hatchery and wild fish.	No	Yes	The results of this analysis of BKD concentrations and transmission could provide important insights that may affect many hatchery programs (and their reforms), and the practice of outplanting carcasses for nutrient enrichment. Could other disease agents be evaluated?
35040	Determination of post-release survival of spring chinook salmon in a mark-selective sport fishery	167	Multiple	Indirect benefit by improving estimated effects of selective fisheries. Direct benefit to the extent fishery techniques developed and employed that reduce incidental fishing mortality.	No	Yes	The development and deployment of selective fisheries is called for in the BiOp (164), as is research to improve estimates of incidental mortalities (167). The use of MS-222 (an anesthetic not approved for immediate consumption) in close proximity to a consumptive fishery should be reconsidered.
35041	Monitoring the reproductive success of naturally spawning hatchery and natural spring chinook salmon in the Wenatchee, Tucannon, and Kalama Rivers	182	Multiple	Indirect. Will measure the relative reproductive success of hatchery and natural-origin chinook salmon. This data could help make hatchery supplementation of wild stocks more effective.	No	Yes	NMFS proposal. Inappropriate to comment.
35042	Evaluate the Effects of Prey Availability on Recruitment of White Sturgeon in the Columbia River					No	Not Reviewed

MAINSTEM AND SYSTEMWIDE PROVINCIAL REVIEW PROJECTS

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35043	Monitoring and Models for Adaptive Management of White Sturgeon					No	Not Reviewed
35044	Determine Effects of Contaminants on White Sturgeon Reproduction and Parental Transfer of Contaminants to Embryos in the Columbia River Basin					No	Not Reviewed
35045	Modeling and Information Management System to Assess Effectiveness of Alternative Actions	0	Multiple	No direct or indirect biological benefit of work. Proposed information management system for integration of effectiveness monitoring programs implemented under FCRPS BiOp RPA 183.	No	No	A weak proposal with very high ambitions. Not clear if goals are reachable, or able to assess this aspect due to lack of details in proposal.
35046	Estimate juvenile chinook salmon residence time and areas of utilization within the Columbia River plume.	193	Multiple	Indirect. Identify ways to improve ocean recruitment by understanding how climate, ocean, and river interact and affect survival in the Columbia River plume.	No	Yes	NMFS proposal. Comment is inappropriate
35047	Evaluate Delayed (Extra) Mortality Associated with Passage of Yearling Chinook Salmon Smolts through Snake River Dams	188 195	SR SSCH	Indirect. Experimentally test for extra mortality caused by Snake River dam passage by comparing smolt to adult survival of fish that pass 4 dams (Columbia) compared to 8 (Snake and Columbia). This could help explain why despite the substantial gains realized in direct smolt survival, adult return rates of Snake River spring/summer chinook salmon have not increased.	No	Yes	NMFS proposal. Comment is anappropriate.

MAINSTEM AND SYSTEMWIDE PROVINCIAL REVIEW PROJECTS

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35048	NWFSC Salmon Data Management, Analysis, and Access for Research Monitoring and Evaluation Programs	180 181 198	N/A	Indirect biological benefits. Working data systems are a vital need within the Basin. This effort may serve as the progenitor of the fully integrated system that is needed.	No	Yes	Must make sure data system is consistent and useable across the Basin.
35049	A multiscale evaluation of steelhead supplementation in the West Fork Elochoman River	184	LCR SH	Indirect biological benefits. Assessment of interactions between hatchery and wild steelhead in a stream environment which may provide information useful for assessing supplementation efforts.	No	No	Does not involve RPA ESUs. Applicability to RPA ESUs (thus qualifying as BiOp project) would be more likely if assessment involved a supplementation technique used in the upper basin, but summer release of parr is not.
35050	UW Offsite Habitat and Fish Survival Effectiveness Monitoring	183	Multiple	Indirect biological benefits. The proposed work may result in indirect biological benefit through the development of regional effectiveness monitoring programs.	No	Yes	There are a number of elements of this proposal that could be useful to the region in the context of an integrated effectiveness monitoring program; however, the proposal as written does not seem like it will deliver sufficient information to be a critical stand-alone component of an RME program.
35051	Evaluate Feasibility of a System-wide Multi-Agency Fish, Wildlife & Habitat Conservation Enforcement Web-Based Data Center	0	Multiple	Indirect. Proposal is to develop a Columbia Basin web-based data center - within a GIS framework - to facilitate conservation law enforcement data compilation & analysis and information sharing for enforcement programs, resource managers, and public information & education.	No	No	This is a law enforcement proposal. Although potentially valuable, the proposal does not address a specific RPA action.
35052	Conservation Enforcement to Enhance and Restore Fish & Wildlife Resources of the Upper Columbia River under Jurisdiction of the Colville Tribes	0	Multiple	Protect adult fish from illegal take.	No	No	This proposal would provide additional protection enforcement officers to an ongoing program. In general, we strongly support the enforcement program. However, our concerns are the same as the ISRP's, which is that we are uncertain how the effective the proposed additional enforcement would be. Also, it does not address a specific RPA action.

MAINSTEM AND SYSTEMWIDE PROVINCIAL REVIEW PROJECTS

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35053	Biological Feasibility of Reintroducng Fishwheels to the Columbia River System	164	Multiple	Direct biological benefit to the extent fishery techniques developed and employed reduce incidental fishery mortality to listed stocks.	No	Yes	The development and deployment of selective fisheries with low incidental impact to listed species is especially valuable. This project would be especially successful, if an alternative harvest of shad could be performed without increased effects on listed populations.
35054	Engaging the Public in Watershed Planning; A Tool Box for Cultural Shift	0	None	Indirect. WATERSHED LEGACY will demonstrate the principles of participatory planning in partnership with Walla Walla and Tualatin communities in developing a set of face-to-face and web-based tools and processes for citizen engagement in watershed planning.	No	No	Education and outreach are critically important elements of effective development and implementation of subbasin plans. These are outside the scope of the RPA.
35055	Role of Bacteria as Indicator Organisms for Watershed Assessment and in Determining Fish Pathogen Relationships with Fauna of Abernathy Creek	0	LCR SH	Indirect. Monitor bacterial indicator species which may make it possible to detect the onset of habitat degradation and predict harmful pathogen growth.	No	No	This proposal may provide some links between aquatic health and microbial communities. However, explicit links to fish survival, or population response appear to be lacking (i.e. it is unclear what the impact that the presence of various microbes or environmental indicators with which they might be associated have on fish population status), somewhat lessening the utility of these metrics. In addition, determining some of the environmental variables (e.g. logging, housing, etc.) may be more challenging than the proposers believe.
35056	Develop Human Resources Necessary to Exercise Co-Management Responsibilities	0	Multiple	No clear benefit to listed species.	No	No	This project would provide education and training for tribal members to assume employment in tribal production facilities.
35057	Habitat Condition and Restoration Potential of Columbia River Flood Plains: A Critical, Missing Element of Fisheries Recovery Science and Policy	0	Multiple	Indirect. Proposed project will identify all floodplains in the Columbia River Basin and assess ecological integrity relative to human disturbance.	No	No	The project is designed to catalog alluvial flood plains in the Columbia River Basin, assess how intact they are, identify major changes in thier structure, and identify actions needed to restore, protect and sustain damaged flood plains to normative conditions. This would be a valuable research project but does not address a specific RPA.

MAINSTEM AND SYSTEMWIDE PROVINCIAL REVIEW PROJECTS

NMFS' Assesment with Respect to 2000 FCRPS Biological Opinion

Project Number	Project Title	RPA Action	ESU(s) Affected	Statement of Potential Biological Benifit to ESU	Already ESA Required?	Biop?	Comments
35058	Evaluation of food availability and juvenile salmonid growth rates under differing thermal and sediment regimes.	0	MCR SH MCR SCH	Indirect. This project attempts to evaluate the effects of temperature and food on growth rates of juvenile salmon under different land management regimes in the John Day subbasin.	No	No	The question of how temperature and food interact to affect fish growth is an important an interesting issue. However, the study design is not adequate to determine how temperature and food influence fish growth. There are a number of other confounding variables that can affect temperature, drift, and in turn juvenile growth. The authors note these other variables, but it is difficult to tell how they are dealt with in the design or analysis phase. Also nutrients and light can strongly influence invertebrate abundance, which in turn, influences drift rate. Moreover, biological interactions among juvenile fishes such as competition for space, will lead to changes in reach scale abundances. And juvenile fish growth is strongly linked to local population size. The method described for assessing growth rate is very questionable. The nets used to confine individuals within an area will affect growth rates, and limiting movement of fish may also affect growth rates. The standard design for assessing growth of fish is a mark-recapture study. Although this is an interesting question, the proposal lacks clear hypotheses, methods, and analyses.
35059	Rapid Detection of White Sturgeon Iridovirus in Spawning Fluids, Eggs and Juvenile Tissues of White Sturgeon					No	Not Reviewed
35060	Instream evaluation of populations, migration, individual adult return and wild-hatchery interactions of naturally produced salmonids	184 188	Multiple	Indirect. The projects uses PIT tags to explicitly quantify life history characteristics, survival and hatchery wild interactions at several life stages from pre-smolt to adult.	No	Yes	This proposal concerns the evaluation of stock status, distribution, and abundance of juvenile and adult salmonids using new PIT tag techniques. Objective 1 of the proposal appears to be specific to small streams and Abernathy Creek, in particular, and does not target ESA listed-species that belong to ESUs covered by the NMFS 2000 FCRPS BiOp. However, the results could be easily transferable to listed species. Objective 2 of the proposal would assess frequency and magnitude of ecological interactions between hatchery-released and naturally produced salmonids. It is not certain that monitoring the movement and co-occurrence of these fish (using PIT tag monitors) will provide a complete assessment of hatchery/wild interactions. However, it is an issue of biological importance to ESA-listed species.

MAINSTEM AND SYSTEMWIDE PROVINCIAL REVIEW PROJECTS

NMFS' Assesment with Respect to 2000 FCRPS Biological Opinion

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35061	Prophylactic Treatments for White Sturgeon Infected with the White Sturgeon Iridovirus (WSIV)					No	Not Reviewed
35062	Impacts of Flow Regulation on Riparian Cottonwood Ecosystems in the Columbia River Basin	0	Multiple	Indirect. Research riparian cottonwoods and geomorphic responses to regulated flows in the Yakima Basin, compare responses to an unregulated reach of the Flathead River with the objective of enhancing flows to restore riparian habitats in the Columbia Basin.	No	No	The sponsors need to provide better evidence of the linkage of changes in flow regimes, geomorphic processes, and cottonwood recruitment to changes in stream habitat and in the aquatic community, especially the fish community. This could be valuable research but does not respond to a specific RPA action.
35063	Compare Bacterial Fish Pathogen Populations in Hatchery Water and in Adjacent Creek Water and Evaluate Possibile Disease Transfer Between Them.	0	LCR SH LCSW COHO	Indirect biological benefits to listed stocks. Assessment using new technique to identify the distribution and potential disease vectors of two pathogens.	No	No	This project purports to address the continuing question of disease vectors into and out of hatchery and wild populations of salmonids. The study design and relevance to RPA 184 are both problematic.
35064	An acoustic tracking array for studying ocean survival and movements of Columbia River salmon	195	Multiple	Benefits are indirect. Could provide a system to track juvenile and adult salmon out of the Columbia River and through the coastal shelf from northern California to the Alaskan pennisula	No	Yes	The key elements of this project have been incorporated into NMFS Project No. 35046. NMFS understands that project 35065 was not resubmitted by the sponsor under the Mainstem/Systemwide solicitation.

MAINSTEM AND SYSTEMWIDE PROVINCIAL REVIEW PROJECTS

NMFS' Assesment with Respect to 2000 FCRPS Biological Opinion

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35065	Canada-USA shelf salmon survival study	190 195	Multiple	Benefits are indirect. Will provide information of growth and potentially survival benefits in changing coastal conditions to particular stocks of CR basin salmon that rear and utilize ocean habitats off the coast of British Columbia	No	Yes	The key elements of this project have been incorporated into NMFS Project No. 35046. NMFS understands that project 35065 was not resubmitted by the sponsor under the Mainstem/Systemwide solicitation.
195505500	Umatilla Tribal Fish & Wildlife Enforcement	0	MCR SH	Unknown. Increases law enforcement and potentially protection to fish, wildlife, their critical habitats and other essential natural resources within watersheds managed by CTUIR.	No	No	This is a tribal law enforcement proposal. Although potentially valuable, the proposal does not address a specific RPA action.
198201301	Coded-Wire Tag Recovery Program	Base	Multiple	Indirect biological benefits to listed stocks by providing critical stock assessment and fishery monitoring data.	No	No	Aspects of this program are critical to regional data needs for fishery management and stock assessments. There may be changes appropriate following completion of project pursuant to RPA 174 (regional marking plan), which revisits marking and sampling metrics for indicator stocks and resulting from RPA 164 & 165 which contemplate more mass marking and mark selective fisheries. The entire program would benefit from a comprehensive program review that, among other things, would revisit the question of regional responsibilities. Aspects of the CWT program may qualify as "BiOp" project rather than a "Base" project if, for example, a case is made that the base program had to be changed in response to BiOp requirements.
198201302	Annual Stock Assessment - Coded Wire Tag Program (ODFW)	Base	Multiple	Indirect biological benefits to listed stocks by providing critical stock assessment and fishery monitoring data.	No	No	Aspects of this program are critical to regional data needs for fishery management and stock assessments. There may be changes appropriate following completion of project pursuant to RPA 174 (regional marking plan), which revisits marking and sampling metrics for indicator stocks and resulting from RPA 164 & 165 which contemplate more mass marking and mark selective fisheries. The entire program would benefit from a comprehensive program review that, among other things, would revisit the question of regional responsibilities. Aspects of the CWT program may qualify as "BiOp" project rather than a "Base" project if, for example, a case is made that the base program had to be changed in response to BiOp requirements.

MAINSTEM AND SYSTEMWIDE PROVINCIAL REVIEW PROJECTS

NMFS' Assesment with Respect to 2000 FCRPS Biological Opinion

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198201304	Annual Stock Assessment - Coded Wire Tag Program (WDFW)	Base	Multiple	Indirect biological benefits to listed stocks by providing critical stock assessment and fishery monitoring data.	No	No	Aspects of this program are critical to regional data needs for fishery management and stock assessments. There may be changes appropriate following completion of project pursuant to RPA 174 (regional marking plan), which revisits marking and sampling metrics for indicator stocks and resulting from RPA 164 & 165 which contemplate more mass marking and mark selective fisheries. The entire program would benefit from a comprehensive program review that, among other things, would revisit the question of regional responsibilities. Aspects of the CWT program may qualify as "BiOp" project rather than a "Base" project if, for example, a case is made that the base program had to be changed in response to BiOp requirements.
198331900	New Marking and Monitoring Techniques for Fish	50 85 87	Multiple	Indirect biological benefits to listed stocks. This project is the development portion of the PIT tag system. It provides PIT tag detection infrastructure support, specifically development and refinement of transceivers, antenna, and associated hardware/software used at dams and in small streams. Juvenile and adult PIT tag detection.	No	Yes	NMFS proposal. Inappropriate to comment
198605000	White Sturgeon Mitigation and Restoration in the Columbia and Snake Rivers Upstream from Bonneville Dam					No	Not Reviewed

MAINSTEM AND SYSTEMWIDE PROVINCIAL REVIEW PROJECTS

NMFS' Assessment with Respect to 2000 FCRPS Biological Opinion

Project Number	Project Title	RPA Action	ESU(s) Affected	Statement of Potential Biological Benefit to ESU	Already ESA Required?	Biop?	Comments
198712700	Smolt Monitoring by Federal and Non-Federal Agencies	199 180	Multiple	The smolt monitoring program does not provide direct biological benefit to listed fishes, however, it provides necessary data for hydrosystem performance assessment. The project supports a number of ongoing research projects on the hydrosystem performance, as well as supports the regional assessment of stock performance across the entire CRB.	No	Yes	An important project that supports the FCRPS BiOp's performance standards assessments of the hydrosystem. A well integrated program that feeds into a number of on-going and developing efforts (RPA 199 - 124). Could form a key portion of the regional status monitoring program
198740100	Assessment of Smolt Condition: Biological and Environmental Interactions	184 141	Multiple	Indirect. Investigates the fundamental biological questions related to developmental differences between wild, natural, and hatchery salmonids specifically if exposure to different water sources affects physiological condition, immunological factors, and survival and if fish from different stocks demonstrate different ranges of immunological response and disease resistance based on the rearing environment.	No	Yes	The proposal clearly lacks rigor in the description of the experimental design. The different treatments are fairly well presented, but the response variables are not well-defined. First, what are the specific physiological and immunological tests to be performed? This may be the most easily-obtained information from the study, but the proposal provides no details. The most glaring weakness is the lack of any statistical design. For instance, "long-term survival" is mentioned several times as a response variable but never clearly defined. Because of this, no power analysis was conducted to determine sample sizes. If one of the goals is to assess delayed mortality, then it is clear that adult return rate will need to be measured. To distinguish among treatments, thousands of fish will need to be tagged per treatment. Is this the scale the researchers envisioned? Also, it is doubtful if enough wild fish will be available to extend the analysis to wild populations. Finally, the statement that the survival of hatchery fish is suppressed relative to wild stocks is not necessarily true. In recent years, smolt-to-adult return rates of hatchery and wild PIT-tagged fish have been nearly equivalent.
198810804	StreamNet	152 198	N/A	Indirect. Cooperative data acquisition and delivery project. Specific fish related data types are acquired, organized in a regionally standardized format, and distributed via the Internet.	No	Yes	Streamnet is a well used source for anadromous fish data. However, the lack of quality control and standardization of data decreases the value of the database as well as its ability to meet the BiOp database standards. Any new data collection should require standardized field collection protocols.

MAINSTEM AND SYSTEMWIDE PROVINCIAL REVIEW PROJECTS

NMFS' Assesment with Respect to 2000 FCRPS Biological Opinion

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198906201	Fish and Wildlife Program Implementation	0	OR SOCK	Indirect benefits.	No	No	CBFWA provides a valuable coordination service to the Columbia River Basin's fish and wildlife managers and those who utilize the Authority's staff and data resources.
198906500	Annual Stock Assessment - CWT (USFWS)	Base	Multiple	Indirect biological benefits to listed stocks by providing critical stock assessment and fishery monitoring data.	No	No	Aspects of this program are critical to regional data needs for fishery management and stock assessments. There may be changes appropriate following completion of project pursuant to RPA 174 (regional marking plan), which revisits marking and sampling metrics for indicator stocks and resulting from RPA 164 & 165 which contemplate more mass marking and mark selective fisheries. The entire program would benefit from a comprehensive program review that, among other things, would revisit the question of regional responsibilities. Aspects of the CWT program may qualify as "BiOp" project rather than a "Base" project if, for example, a case is made that the base program had to be changed in response to BiOp requirements.
198907201	Independent Scientific Advisory Board Support	0	Multiple	Indirect benefit through scientific review of all proposals submitted under the Fish and Wildlife Program	No	No	The ISRP function is legislatively mandated.
198909600	Monitor and evaluate genetic characteristics of supplemented salmon and steelhead	184	SR SSCH SR SH SR FCH	Indirect. Will evaluate the genetic effects of outplanting hatchery reared fish on natural and wild populations of spring/summer chinook salmon and steelhead in the Snake River Basin.	No	Yes	NMFS proposal. Inappropriate to comment.

MAINSTEM AND SYSTEMWIDE PROVINCIAL REVIEW PROJECTS

NMFS' Assesment with Respect to 2000 FCRPS Biological Opinion

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198910700	Statistical Support for Salmonid Survival Studies	0	Multiple	Indirect. Provides statistical support and guidance on the design and analysis of PIT-tag survival studies to the Northwest fisheries community. This project also provides regional support for balloon-tag radiotelemetry and acoustic-tag survival studies in an effort to reduce sample sizes of ESA stocks and provide more detailed survival and passage data.	No	No	<p>198910700 is a proposal to advance an ongoing project to develop statistical analysis tools for fish survivorship data. This program includes the software SURPH – now in version 2.0 after 13 years of program development. The proposal has 5 tasks: further improve the software performance, advance the statistical underpinnings, collaborate with field tests, evaluate new PIT tag techniques, provide analysis services to CRB investigators. Strengths of the proposal include the stated objective of improving the front-end interface. This improvement is sorely needed. The other principal strength of the proposal is the product itself. In theory this product serves an immensely useful function. The proposal correctly makes the point that more tagging is done in the CRB than anywhere else, and analytical tools are sorely needed.</p> <p>The principal weakness of this proposal is the lack of detail with respect to interaction with users both in the design and testing phase of software development. Its been 13 years of development, surely one might expect that before we embark on another funding cycle of product development we should see some process of organized testing? How are the experiences of users assayed to improve the front-end interface? This is a critical problem with the current version. In addition to this design function, it is also critical to show that users are actually using this product. The realized usefulness of anything is the product of its intrinsic functionality and the frequency with which people exploit it. The truth is this product may be very useful, but so complicated that no one uses it. If no one is using it should continued development be funded? Detailing how specific end user input will be accommodated into the design and testing of the product would improve the proposal.</p>

MAINSTEM AND SYSTEMWIDE PROVINCIAL REVIEW PROJECTS

NMFS' Assessment with Respect to 2000 FCRPS Biological Opinion

Project Number	Project Title	RPA Action	ESU(s) Affected	Statement of Potential Biological Benefit to ESU	Already ESA Required?	Biop?	Comments
199007700	Northern Pikeminnow Management Program	100	Multiple	Direct biological benefits through reduction of the predator base. Assessment of the success of the project occurs periodically(3-5 yrs). The program is estimated to have reduced juvenile salmonids losses to predation by about 25% through the removal of 10 to 15% of the Northern Pikeminnow population in the lower Snake and Lower Columbia Rivers.	No	Yes	While the cost of implementing this project is high, at present this is the major means of reducing predation. As other methods or procedures are tested and implemented (flow modification, etc.), the importance of this may decrease. For the present, both the removal program and the biological evaluation should continue.
199008000	Columbia Basin Pit Tag Information System	193	Multiple	Indirect. The Columbia Basin Pit Tag system provides fish passage and survival data.	No	Yes	Increasing use of PIT tags and installation of additional detectors has placed a greater burden on the infrastructure necessary to manage the PIT tag data. This proposal helps respond to this need.
199009300	Genetic Analysis of <i>Oncorhynchus nerka</i> (modified to include chinook salmon)	184	SR SSCH SR SOCK SR FCH	Indirect. This project provides genetic profiles for returning sockeye and chinook salmon currently in captive rearing or captive broodstock programs. These genetic profiles can be used to assess immediate and long-term genetic risks to Snake River sockeye and Salmon River chinook salmon from captive propagation programs	No	Yes	This proposal is part of an ongoing project to provide genetic information for assessment of immediate and long-term genetic risks to ESA-listed Snake River sockeye and Salmon River chinook salmon currently in captive rearing programs. As such, it will provide a biological benefit by providing genetic monitoring necessary to maintain genetic variation. Of scientific interest to us is the use of microsatellite DNA analyses to develop pedigrees, identify parentage, and to define Maximal Avoidance of Inbreeding matrices to guide captive breeding options for the chinook salmon populations in the East Fork of the Salmon, West Fork of the YankeeFork, etc. This approach may assist conservation biology.
199105100	Monitoring and Evaluation Statistical Support	185 188 190	SR SSCH UCR SFCH SR SOCK SR SH	Indirect. Information management and data analysis project. No direct biological benefit to listed fish, but strong benefit to assessment of hydrosystem impacts on listed fish.	No	Yes	An important study that strongly supports the FCRPS BiOp's performance standards for assessing hydrosystem impacts.

MAINSTEM AND SYSTEMWIDE PROVINCIAL REVIEW PROJECTS

NMFS' Assesment with Respect to 2000 FCRPS Biological Opinion

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199105500	Natural Rearing Enhancement Systems (NATURES)	184	Multiple	Indirect. This project will develop and evaluate rearing strategies for the artificial production of hatchery-reared Pacific salmon and steelhead for supplementation purposes that have increased postrelease survival, wild-like characteristics, and few detrimental effects on wild salmonids in streams.	No	Yes	NMFS proposal. Inappropriate to comment.
199302900	Estimate Survival for the Passage of Juvenile Salmonids Through Dams and Reservoirs of the Lower Snake and Columbia Rivers	185	Multiple	Indirect. This project will provide precise estimates of juvenile salmonid suvival during migration through reservoirs, dams, and free-flowing reaches of the Snake and Columbia Rivers with Pit-tag detection. This information is critical for evaluating the success of recovery strategies and passage survival performance.	No	Yes	NMFS proposal. Inappropriate to comment.
199305600	Assessment of Captive Broodstock Technologies	184	Multiple	Indirect. Research will continue on the use of captive broodstocks to increase returns of adult stocks through examination of reintroduction suces, olfactory imprinting and homing, physiological development and maturation, prevention and treatment of disease, and the effects of inbreeding and inbreeding depression.	No	Yes	NMFS proposal. Inappropriate to comment.
199403300	The Fish Passage Center	191	Multiple	Indirect. The Fish Passage Center provides fish and wildlife agencies, tribes and hydrosystem operators and regulators with data and analyses regarding fish passage, spill, and flow and fish facilities operations.	No	Yes	Provides important physical and biological data and analyses related to hydrosystem passage.

MAINSTEM AND SYSTEMWIDE PROVINCIAL REVIEW PROJECTS

NMFS' Assesment with Respect to 2000 FCRPS Biological Opinion

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199600500	Independent Scientific Advisory Board	0	N/A	Indirect. ISAB advises fish and wildlife recovery efforts on the use of sound scientific methods in research related to the programs of the NMFS, the Council, and the Tribes.	No	No	Not Reviewed
199601900	Second-Tier Database Support	198 152	Multiple	Indirect. This project will provide integration and direct and timely public access to Columbia Basin environmental, operational, fishery, administrative, and other information essential to aid operational and resource management decisions by the Federal Government.	No	Yes	Project overlaps with several other database projects but also has the potential to integrate data from numerous other sources.
199602000	Comparative Survival Rate Study (CSS) of Hatchery Pit Tagged Chinook & Comparative Survival Study Oversight Committee	46 47 185	Multiple	Benefits are indirect. This study is intended to provide the basis for Mainstem Monitoring and Evaluation Program's analysis of long term alternatives for the recovery of depressed listed and unlisted stocks of chinook and steelhead.	No	Yes	This study will provide better insight into management strategies which will aid salmon recovery. A good study which complements NMFS study. NOAA Fisheries agrees with the ISRP and RME group comments that it would be beneficial if that information was translated into precision estimates and that NMFS be part of the Interagency Comparative Oversight Committee.
199602100	Gas bubble disease research and monitoring of juvenile salmonids	131	Multiple	Indirect. The proposal is to continue the training and equipment maintenance to support the quality assurance and control of the spill program GBD monitoring. The program monitors juvenile migrants for signs of gas bubble disease.	No	Yes	The ISRP posed five questions for a possible independent review team. One deals with the rationale for continuation of the 110% in the light of apparent acceptable risk of exposure to 120%. The ISRP should understand that the continuation of the monitoring program reflects the requirement placed on the NMFS spill program by the state water quality agencies. Further, discussions with the states regarding changing the standard have led to proposal 35013. This project would provide the information the states believe necessary to establish site specific standards. The program requires state waivers by WA and OR.
199606700	Manchester Spring Chinook Broodstock Project	177	SR SSCH	Increase numbers of listed chinook using captive broodstock technology.	No	Yes	NMFS proposal. Inappropriate to comment.

MAINSTEM AND SYSTEMWIDE PROVINCIAL REVIEW PROJECTS

NMFS' Assesment with Respect to 2000 FCRPS Biological Opinion

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199702400	Avian Predation on Juvenile Salmonids in the Lower Columbia River	101 102 103	Multiple	Indirect increase in survival through determination of predation rates by waterbirds on juvenile salmonids, evaluate the efficacy of management initiatives to reduce avian predation, and assist resource managers in the development of plans for long-term management of avian predation, as warranted.	No	Yes	This is an important effort to characterize avian predation and evaluate appropriate management actions.
199705900	Securing Habitat Mitigation Sites - Oregon	150	MCR SH SR FCH SR SSCH	Indirect. Project proposes to protect, restore, enhance, and maintain NWPPC target habitat types and associated species in all Oregon subbasins within the Columbia River Basin to mitigate for impacts caused by hydro-electric facilities. Survival increases could be secured depending on the success of developing the process and tools needed to select appropriate sites, and thier aquisition.	No	Yes	Project will apply existing HEP/crediting protocols for terrestrial species and attempt to modify for aquatic habitats which support salmon also. No discussion of feasibility of aquatic HEP. No specific projects for salmon are identified. The applicability to the RPA (150) would need to be considered on a case by case basis. Redundancy between this project and the anticipated products of the Council's subbasin planning effort needs to be considered before funding.
199800401	Electronic Fish and Wildlife Newsletter					No	Not Reviewed
199800800	Regional Forum Support Services	0	Multiple	Indirect benefit.	No	No	The Regional Forum (See RPA's 2-5) develops an Annual Water Management Plan, System Configuration Plan, and Water Quality Plan. It makes real time recommendations on hydrosystem operations relative to the needs of listed species. Facilitation of the Forum is not required by the Biop but contributes timely decisions and ensures opportunity for input by all participants.
199803100	Implemtn Wy-Kan-Ush-Mi Wa-Kish-Wit Watershed assesment and Restoration plan now	152 154	Multiple	Indirect. Increased facilitation and coordination of included tribes with the NWPPC subbasin planning process should increase effective project proritization and implementation	No	Yes	The proposal is to continue to provide administrative and technical support to CRITFC to facilitate continued coordination and participation in the NWPPC subbasin planning process. The proposal details coordination opportunities but does not provbide details on how resulting projects would be prioritized and distributed

MAINSTEM AND SYSTEMWIDE PROVINCIAL REVIEW PROJECTS

NMFS' Assesment with Respect to 2000 FCRPS Biological Opinion

Project Number	Project Title	RPA Action	ESU(s) Affected	Statement of Potential Biological Benifit to ESU	Already ESA Required?	Biop?	Comments
199900301	Evaluate Spawning of Fall Chinook and Chum Salmon Just Below the Four Lowermost Mainstem Dams	155 157 199	COL CHUM LCR CH	The benefits are indirect. The proposal deals with over 90% of the spawning chum population. It would document existing size and range of the existing population.	No	Yes	This project has provided excellent information to date. Aspects of this project that provides information necessary to effectively manage this population are tasks 1a, 1b, and 2b. The costs of conducting these tasks is approximately \$360,000. The added tasks which bring the project to \$1 million need to be weighed against priorities in the overall budget.
200000700	Infrastructure to Complete FDA Registration of Erythromycin	184	Multiple	The project will continue to provide the infrastructure for the control and prevention of bacteria kidney disease leading to decreased disease related mortality in captive broodstocks.	No	Yes	This project is essential for the continued use of erythromycin in hatchery and captive broodstock operations.

MAINSTEM AND SYSTEMWIDE PROVINCIAL REVIEW PROJECTS

NMFS' Assesment with Respect to 2000 FCRPS Biological Opinion

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200001700	Kelt Reconditioning: A Research Project to Enhance Iteroparity in Columbia Basin Steelhead (Oncorhynchus mykiss)	184	Multiple	Indirect. This proposal tests the effectiveness of steelhead kelt reconditioning programs in the Columbia Basin which may lead to increased kelt survival and spawning.	No	Yes	<p>This proposal expands on previous efforts to recondition wild steelhead kelts collected in Columbia River tributaries through further evaluation of various reconditioning methods and release strategies. This research effort may provide needed insight into this potentially important life-history strategy in steelhead and an avenue for increasing the survival of wild steelhead destined to undergo rematuration. The proposal is generally scientifically sound and well written. Some areas of concern are noted below:</p> <p>Reconditioned and non-reconditioned kelts will be released below Bonneville Dam. What might be the effect of this release strategy on re-homing to the stream of origin and/or straying? Presumably this will be evaluated, but no mention is made of such an analysis? What sort of numbers of fish will be used in these comparisons? Has a power analysis been conducted to determine minimal numbers needed to detect significant differences?</p> <p>Is there any information on the heritability of kelting in steelhead? What effect might this have on the genetic structure of future generations if this is found to be a very successful strategy for expanding population numbers in broodstock programs etc.?</p> <p>The Yakima population will serve as an important component of this study, however only 30% of the fish can be interrogated past Prosser dam on the East Fishway with video monitoring used elsewhere. Can video monitoring clearly identify kelts vs. virgin steelhead? Since this is a very important interrogation site this should be clarified. Also, what are the interrogation facilities for all the other populations being studied?</p> <p>The <200/ >200 criterion for selecting long and short term reconditioning groups should be clarified.</p> <p>Collaboration with fish health specialists is noted, but no specific groups or individuals are mentioned. This is important in light of the significant component long term reconditioning places on disease prevention treatment. Also, why are there formalin and ivermectin treatments only used for long-term fish and not short term? This is a confounding factor that must be considered when comparing the survival of short and long term reconditioned groups.</p> <p>In task 4.2 various physiological factors will be compared between virgin and rematuration source progeny including survival, size, growth hormone (GH), Insulin-like growth factor I</p>

MAINSTEM AND SYSTEMWIDE PROVINCIAL REVIEW PROJECTS

NMFS' Assesment with Respect to 2000 FCRPS Biological Opinion

Project Number	Project Title	RPA Action	ESU(s) Affected	Statement of Potential Biological Benifit to ESU	Already ESA Required? Biop?	Comments
						(IGF-I not IL-I), and oxygen consumption. What is the rational for these comparisons? All are dependant on temperature. Will temperature be identical between groups? This project is realistic, however, a smaller scale program focused specifically on the Yakima steelhead program may help answer many uncertainties regarding kelt reconditioning with a less significant financial commitment before expanding to the Columbia Basin level program outlined in this proposal.
200002900	Identification and thermal requirements of larval Pacific, river, and western brook lampreys				No	Not Reviewed
200005200	Upstream migration of Pacific lampreys in the John Day River: behavior, timing, and habitat use				No	Not reviewed
200005500	Enhanced Conservation Enforcement for Fish & Wildlife, Watersheds of the Nez Perce	0	SR FCH SR SH	Unknown. Increase conservation law enforcement (CE) protection of fish, wildlife, critical habitats and other natural resources within watersheds managed by the Nez Perce Tribe.	No	No This is a tribal law enforcment action. Although potentially valuable, the proposal does not address a specific RPA action.
200005600	Protect Anadromous Salmonids in the Mainstem Corridor	0	Multiple	Protects anadromous salmon and native resident fish from illegal take. The illlegal take includes harvest of adults, harassment of spawners attending redds, destruction of eggs or fry within redds, and various other activities.	No	No This proposal does not concern the existing level of enforcement. NOAA Fisheries supports the current program. This proposal is for additional enforcement. We share ISRP's concern whether additional enforcement is necessary given the existing level of effectiveness.

MAINSTEM AND SYSTEMWIDE PROVINCIAL REVIEW PROJECTS

NMFS' Assesment with Respect to 2000 FCRPS Biological Opinion

Project Number	Project Title	RPA Action	ESU(s) Affected	Statement of Potential Biological Benifit to ESU	Already ESA Required?	Biop?	Comments
200100300	ISO Adult Pit Interrogation System Installations	192	Multiple	Benefits are indirect. Adult PIT tag interrogation system will allow assessment of adult performance standards and will allow assessment of critical adult passage issues such as interdam loss, delay and fallback.	No	Yes	This is an important step in determining biological performance standards for adult migrants and for reducing handling of adults by reducing the need for massive radio tag studies. Also implements ITS 10.5.1.6.
200100700	Evaluate live capture selective harvest methods for commercial fisheries on the Columbia River 2001-007-00.	164 167	Multiple	Indirect benefit by improving estimated effects of selective fisheries. Direct benefit to the extent fishery techniques developed and employed that reduce incidental fishing mortality.	No	Yes	The development and deployment of selective fisheries is called for in the BiOp (164), as is research to improve estimates of incidental mortalities (167). Also, sponsors should address study design issues raised by ISRP to ensure that those "tests" of selective fisheries yield quality, reliable data.

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 (<i>below Cowlitz on WA side; below Willamette on OR side</i>)
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 <u>no biological effect</u> 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.

