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 19, 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 the Columbia Cascade Province Proposals

Dear Mr. ~~Marker~~ Doug:

This letter transmits the results of the National Marine Fisheries Service's (NOAA Fisheries) review of proposals submitted under Bonneville Power Administrations' (BPA) solicitation for the Columbia Cascade 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 Columbia Cascade Province contains two of the region's most "at-risk" species, the Upper Columbia Spring Chinook and Upper Columbia Steelhead. The province also encompasses three priority subbasins, as designated in the 2000 Basinwide Salmon Recovery Strategy; the Methow, Entiat, and Wenatchee Rivers. Although subbasin plans that would provide guidance on priorities and opportunities are not yet available for these watersheds, we note in our comments a number of projects that we believe are important and consistent with the Biological Opinion.

NOAA Fisheries staff participated in the CBFWA process to evaluate and rate proposals. 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.

This letter addresses only the suite of proposals that were submitted for funding in the Columbia Cascade Province. The scope of submitted projects may not be sufficient to address all of the RPA actions that apply to this province. We will begin our analysis immediately and, to the extent that we identify any gaps in the range of proposed projects,

they will be addressed in subsequent correspondence to BPA, the Council, and others. We will provide you with the results of that analysis as soon as possible.

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
Assistant Regional Administrator
Hydro Division

Enclosures

cc: Sarah McNary, BPA
Lorri Bodi, BPA
Witt Anderson, COE
Ron McKown, BOR
Bill Shake, USFWS
Mary Lou Soscia, EPA
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National Marine Fisheries Service Review of the Columbia Cascade Province Proposals
(Sorted by Project Number)

Enclosure 1

Project No.	Title	RPA Actions	ESU(s) Affected	Statement of Potential Biological Benefit	Already ESA Req?	Biop?	Comments
29001	Evaluation of 1872 Water Rights to Supplement Flows Between Basins	154	UCR SCH, UCR SH	Indirect effect. Proposal is to catalogue existing water rights as initial platform to identify and propose potential water right acquisitions to place in trust for instream flows. No water right purchases are proposed at this time. A benefit to fish can be expected if water is actually obtained and/or transferred.	No	Yes	Proposal is for an initial assessment of existing water rights and and evaluation of the benefit of converting water rights to instream flows. It provides a beneficial opportunity to link water transfers to recovery efforts. No water appears to be purchased through this project.
29002	Conjunctive Use and River Enhancement (CURE) for Habitat Improvement in the Upper Methow River	149	UCR SCH, UC SH	Could improve survival if project provides seasonally increased flows in portions of the Methow and Chewuck Rivers.	No	Yes	While the project is not already required, existing section 7 consultation requires flow improvement on the Chewuck. The project is intended to minimize the impact of that consultation to the irrigation district covered by that consultation. The withdrawal of water from the Methow aquifer may decrease upwelling and alter other hyporheic conditions in an important spring chinook spawning area.
29003	Acquire Property for Partial Wildlife mitigation	0				No	Wildlife Project - Not Reviewed
29004	Control Okanogan Weeds - Invasive Species Project	0	None		No	No	While weed control is a worthy effort, difficult to imagine how project would benefit fish.
29005	Validate Occurrence and Assess Abundance of Wildlife Species	0				No	Wildlife Project - Not Reviewed
29006	Supplement Spring Chinook in Early Winters Creek	0	UCR SCH	Hatchery/Supplementation project to increase the numbers of natural spawning spring chinook. In addition, the potential flow augmentation portion of the proposed project may benefit ESA listed steelhead and bull trout by increasing instream flows.	No	No	May provide another test of NATURES, but not every application of NATURES rearing is a RPA 184 project. Hatchery reform will generally follow the completion of an approved HGMP.
29007	Okanogan Kelt Reconditioning	0	UCR SH	Help to mitigate the loss of steelhead kelts due to migration barriers and rebuild the population by reconditioning steelhead kelts and allowing them to repeat spawn in the wild.	No	No	Proposal is not RPA 109 because that action addresses Corps responsibility to improve kelt survival with a focus on Federal dam effects. If funded, NMFS strongly believes that this project should be re-designed as a research project to address the potential ecological and genetic effects of reconditioning kelts, particularly with respect to small population sizes and potential inbreeding. In addition, because genetic and environmental selection pressures likely influence the ability to kelt, it would seem a more genetically sound practice to only recondition true kelts rather than any adult spawned in the hatchery. We encourage the proposers to contact the NWFSC for additional logistical and design suggestions.

National Marine Fisheries Service Review of the Columbia Cascade Province Proposals
(Sorted by Project Number)

Enclosure 1

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29008	Adult Passage Counting and Trapping at Zosel Dam	0	Multiple	This stock Assessment project would enumerate sockeye and potentially other species.	No	No	Good project but major species of interest is Okanogan Sockeye; listed species at low level of usage at present. Results may provide information on adult losses above Wells Dam.
29009	Acquire Dole-Beebe Property and Associated Water Rights	150	UCR SCH, UCR SH, OR SOCK	Would protect an undisclosed amount of riparian area and a springbrook along the mainstem Columbia River. Could also result in modest instream flow contribution which could improve habitat and therefore survival.	No	Yes	Actual transferable water right is likely much less than the 15 cfs reported (probably closer to 0.5 cfs). Benefits appear more at protecting hatchery water supply than listed fish. Little evidence provided to support the importance of the site to fish. Much of the property is isolated from the river.
29010	Restore Passage on Private Lands in Beaver Creek Drainage to Benefit Spring Chinook, Steelhead and Bulltrout	149	UCR SCH, UCR SH,	Project would reconnect suitable habitats in a significant Methow River tributary, potentially increasing survival.	No	Yes	Project is aimed at resolving culvert and irrigation diversion problems in Beaver Creek. It appears that the inventory is fairly rigorous. Compliments other projects implemented with SRFB and DOT funds. Suggest that DFW focus on fixing culvert passage problems and leave irrigation diversion problems to the BOR as required under Action item 149. BOR feels it currently lacks authority for construction - should rely on them to at least perform engineering.
29011	Sharp-tailed Grouse and Mule Deer Habitat Restoration and Enhancement on Sinlahekin Wildlife Area						Project withdrawn
29012	Replace Rockview Diversion with Groundwater Withdrawal and Restore Instream Habitat	149	UCR SCH, UCR SH	Potential increase in rearing survival. Project would restore stream flow to small tributary. Increase off-channel habitat in Methow.	No	Yes	Straightforward project with good benefit. Should explore BOR participation.
29013	Acquire Land Adjacent to Chiliwist Creek and Develop Summer Chinook and Summer Steelhead Acclimation Pond	0	UCR SFCH, UCR SH	Hatchery/Supplementation project providing alternative release location to improve dispersal of summer chinook spawners.	No	No	Sponsor claims RPA 150 but the major emphasis is on the acclimation project, with little emphasis on habitat. The use of acclimation should be deferred until the completion of an approved HGMP that calls for a particular reform and relevance to listed fish. More acclimation sites may be good, but the need has not been substantiated yet. Potential benefits of acclimation appear to be small with steelhead.
29014	The Effects of Impoundment on Fish and Amphibian Habitat Use in Eastern Washington	0	UCR SCH, UCR SFCH, COHO-U	Indirect benefit. Examine whether quality and quantity or off-channel habitat changes as a function of impoundment-related hydrological alteration for medium-sized streams. If the impoundment-altered hydrology results in reductions in habitat quality and quantity, alternatives for remediation can be identified.	No	No	Very thorough proposal.

National Marine Fisheries Service Review of the Columbia Cascade Province Proposals
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Enclosure 1

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29015	Thermal Imaging and Total Maximum Daily Load (TMDL) Development on the Okanogan Subbasin.	152	Multiple, including UCR SH	Indirect benefit. Could result in identification of important thermal refugia. Could lead to development of TMDL to improve water quality in the Okanogan River Basin.	No	Yes	Given the extent to which Okanogan River temperatures are influenced by factors in Canada, not clear whether project will improve conditions. However, developing better understanding of US influence may be worth while.
29016	Return of Okanagan Sockeye Salmon to their historic range.	0	OR SOCK	Passage/Screen project will provide additional spawning and rearing habitat for Okanogan sockeye above an existing artificial barrier.	No	No	Seems cost effective for benefits. Especially notable for the coordination with the Canadian parties. Not for benefit of listed fish, so not FCRPS Biop project but may be very good for the non-listed sockeye.
29017	Prepare a Master Plan for Protecting and Restoring Salmon Habitat in Okanagan River	0	OR SOCK	Assessment could lead to improved habitat conditions and increased habitat area for Okanogan Sockeye	No	No	Not clear how this proposal would be integrated with or supplemental to existing efforts to enhance Okanogan Sockeye. Proposal is short on detail.
29018	Analyze ground-water and surface-water exchanges influencing anadromous salmonid habitat in the Methow River and its major tributaries	154	UCR SCH, UCR SH, UCR SFCH	Indirect benefit. Research project to increase understanding of surface/ground water interaction in the Methow Basin. Could provide information useful in assessing the environmental consequences of water conservation projects.	No	Yes	The impacts of water conservation projects to ground water volume/hyporheic flow have long been debated in the Methow. Such impacts are likely to vary substantially between sites. Accordingly, the scope of this proposal may not be broad enough to guide project planning throughout the Methow Basin. Such analysis may be more appropriate as an element of an individual project proposal. Further, in that most of the conservation projects under consideration in the Methow are aimed at resolving severe flow problems, it is doubtful that any negative environmental impacts to aquifer recharge would outweigh the benefits of resolving the instream flow problem.
29019	Characterize and Assess Wildlife-Habitat Types and Structural Conditions for Okanogan sub-basin	0				No	Wildlife Project - Not Reviewed
29020	Beaver CR Campground Rehabilitation	400	UCR SH	Improve riparian conditions along a short stretch of Beaver Creek, an important Methow tributary.	No	Yes	A substantial portion of the costs are associated with adding campground amenities rather than improving the state of the natural environment. Managing human and livestock use of streamside areas should be a responsibility of the state - the campground owner. If BPA funds are used, they should only be applied to actions that will improve stream health.

National Marine Fisheries Service Review of the Columbia Cascade Province Proposals
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Enclosure 1

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29021	Develop a Physical Processes Method (PPM) to Supplement Habitat Conditions Analysis and Subbasin Planning	0	NONE	Possible indirect benefit. Integrate ecosystem diagnosis and habitat conditions analysis (biological models) with the causal mechanisms of landscape and/or land-forming processes (physical process models). This would allow biologists and decision-makers to effectively determine how specific actions will affect the productivity, diversity, and abundance of Pacific salmon.	No	No	1) Linking physical process models with a biological model like EDT will be inherently flawed because many of these models were developed to answer very specific in-channel hydraulics questions and are not related to the biology in anyway. The best way to use such models is to use them for the specific reason they were developed. 2) The physical processes they discuss only have to do with in-channel conditions and nothing to do with watershed processes as a whole, so you would be left with the main questions still being unanswered. 3) There is no ground-truthing component which would take years. They do not identify expected outputs and also do not have a larger conceptual model to work from making it more of a cobbling exercise.
29022	Omak Creek Water Temperature Model	154	UCR SH, UCR SPCH	Indirect benefit. It could lead to better understanding of thermal characteristics of Omak Creek, which could identify enhancement and protection opportunities	No	Yes	Proposal does not make a case that a temperature model is needed for Omak Creek. It may be more useful to inventory water withdrawals and riparian conditions and then assess the extent to which improvements in either or both could improve water quality in Omak
29023	Restoration/Protection of Kartar Creek In-stream, riparian, and Wetland Habitats	0				No	Not Reviewed
29024	Analysis of multiple land uses and their effects to shrub-steppe habitat and wildlife species, such as roads, patterns of development and agriculture.	0				No	Wildlife Project - Not Reviewed
29025	Columbia Cascade Province pump screening	149	UCR SCH, UCR SH, LWSOCK	Indirect benefit. Provides be a comprehnsive re-assessment, re-inventory, and mitigation of pump screen sites in three high priority subbasins (Methow, Wenatchee, and Entiat) with an objective of bringing all diversions in the subbasins into criteria within the next four years.	No	Yes	The proposal is presented by WDFW and the Yakima Screen Shop, which have a long track record of providing high quality work in this area.
29026	Hanan-Detwiler passage improvements	149	UCR SCH, UCR SH,	Increase survival by providing improved upstream and downstream passage within the side channels of a major irrigation diversion .	No	Yes	The proposal is presented by WDFW and the Yakima Screen Shop (see comment above) and would go along with a pump screening facility that was completed in 1998 and meets criteria.

National Marine Fisheries Service Review of the Columbia Cascade Province Proposals
(Sorted by Project Number)

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Project No.	Title	RPA Actions	ESU(s) Affected	Statement of Potential Biological Benefit	Already ESA Req?	Biop?	Comments
29027	Comprehensive inventory and prioritization of fish passange and screening problems in the Wenatchee and Entiat subbasins	149	UCR SCH, UCR SH, LWSOCK	Indirect Benefit. Conduct a watershed based inventory of all fish passage barriers and unscreened or inadequately screened water passage barriers in the Entiat and Wenatchee subbasins.	No	Yes	This would be a fully stream based, not road based, survey and would cover a much broader area (over double the area) than has already been surveyed.
29028	Fabricate and Install three new fish screens on Wenatchee River Diversions	149	UCR SCH, UCR SH	Increase survival by providing passage protection for all species and life stages of anadromous and resident salmonids through the construction at a couple of diversions that do not have screens and bypass structures and to upgrade an existing screen facility.	No	Yes	In their recommendation, ISRP felt that a response was still needed in detail on O&M and M&E plans. Assuming those condition are met, this is another good WDFW and Yakima Screen Shop project.
29029	Perform Range Forage Inventory for Large Ungulates	0				No	Wildlife Project - Not Reviewed
29030	Early life history and survival of spring chinook salmon and steelhead in the Methow River Basin	185, 193	UCR SH, UCR SCH	Indirect benefit. Will identify critical habitat features for the overwintering survival of Upper Columbia Chinook and Steelhead in the Methow River. Results will aid in future preservation/ restoration of overwintering habitat.	No	Yes	A greater understanding of early life history survival is important. However, relying on hatchery fish to provide insight into wild fish behavior is not recommended. In addition, there are significant procedural and logistic concerns with this proposal with respect to winter conditions, sample size, and video logistics. Would partially implement these RPA actions.
29031	Out Year Operations and Maintenance Costs Required to Implement/Carry out MVID Rehabilitation Project	149	UCR SH, UCR SPCH	Project could substantially improve summer flow conditions in the lower 4 miles of the Twisp River and replace two problematic irrigation diversions with structures that would better enable fish passage across a range of flows. Project could result in increased spawning and rearing survival rates.	No	Yes	Proposal is a placeholder pending final agreement on the configuration of this conservation project. Project has been in the Council's program since 1996. While BOR is expected to play a substantial role in resolving flow and passage problems in the Methow, in that this project has been under consideration so long that it may be best to retain as BPA responsibility. Funding, however, should be contingent on the final agreement including substantial gains in Twisp River flows.
29032	Okanogan Basin Water Strategy Development and Pilot Projects	151	UCR SH	Indirect benefit. It could lead to increased survival if project results in the development of strategies to increase stream flows in three Okanogan Basin tributaries.	No	Yes	Well written proposal. Relationship to # 29001 could be better explained. Tributary flow improvement will be an essential element of steelhead recovery in the Okanogan.
29033	Design and Conduct Monitoring and Evaluation Associated With Reestablishment of Okanogan Basin Natural Production	182, 184	UCR SH, UCR SCH, UCR SFCH	Indirect benefit. Evaluation and monitoring of steelhead and fall/ summer chinook production (spawning, survival, abundance, distribution, rearing, life history) in the Okanagon Basin concurrent with proposed and implemented salmon and steelhead propagation initiatives. The project also includes monitoring and evaluation of tribal harvest and harvest methods.	No	Yes	The project outlines general monitoring of salmonids in the Okanagon basin along with the monitoring of propagation and reestablishment projects. This is important M&E that has the potential to increase our knowledge of runs in the basin and the success of propagation projects. However, the proposal lacks adequate detail on how the M&E will be carried out.

National Marine Fisheries Service Review of the Columbia Cascade Province Proposals
(Sorted by Project Number)

Enclosure 1

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29034	Life History Study of Salmonid Rearing In The Upper Methow River	154	UCSCH, UCSH	Indirect benefit. Increase understanding of salmonid life histories and productivities in the upper Methow in order to propose projects that will best address the biological needs of listed salmonids in this basin, thereby supporting development of subbasin plans	No	Yes	Project is consistent with subbasin research needs. Will provide important information needed to develop the subbasin plan.
29035	Okanogan River Riparian and Upland Fish and Wildlife Habitat Acquisition	150	Multiple, including UCR SH	If necessary agreements are secure, project could ensure long-term protection of substantial amount of riparian habitat and protect current survival rates.	No	Yes	Most of the benefits would accrue to terrestrial species. Applicant has identified only a potential long-term owner (CWU). Does not appear that CWU is willing to commit to long term ownership at present. Unless owner can be identified and unless owner can commit to long-term protection of the land, purported preservation benefits are speculative.
29036	Ali Long Rearing Channel Habitat Improvements- Upper Methow River	150, 152	UCR SPCH. UCR SH	Project would reconnect and improve habitat within Methow River side channel. Potential increase in spawning and rearing survival.	No	Yes	Removal of alluvium at inlet may have unintended consequences to channel behavior. Suggest project be winnowed to just include dike removal and allow passive recovery and the exercise of natural fluvial processes. Proposal 29018 provides a map of the Methow River showing this reach as a "losing reach", where there is a net loss of water. Survival benefits from increased habitat access may be compromised if water is limited.
29037	Ecosystem Diagnosis and Treatment in the Columbia Cascade Province	154	Multiple	Indirect benefit. Assemble analysis to support subbasin planning. No direct benefit to any ESU.	No	Yes	In that TRT has been formed for upper Columbia, regional technical team and TRT may wish to jointly determine the potential value of en extensive EDT analysis in this area.
29038	Supplement Summer Steelhead Eightmile Creek/Chewuch River	0	UCR SH	Hatchery/Supplementation project may provide increase in survival of steelhead smolts.	No	No	Potential benefits of acclimation appear to be small with steelhead. Current planting method seems to disperse adults and not contribute to straying of steelhead adults on return. May be yet another good test of NATURES rearing concept, but what hatchery is being reformed? Initiation under auspices of FCRPS Biop assumes an approved HGMP listing this as an action. Small scale evaluation will confirm case specific benefits prior to full scale acclimation for steelehead smolts.

National Marine Fisheries Service Review of the Columbia Cascade Province Proposals
(Sorted by Project Number)

Enclosure 1

Project No.	Title	RPA Actions	ESU(s) Affected	Statement of Potential Biological Benefit	Already ESA Req?	Biop?	Comments
29039	The effects of fine sediment on the hyporheic zone: monitoring and evaluating the influence of hyporheic exchange flows on stream temperature.	180, 198	UCR SH, UCR SCH	Indirect benefit. Examines the effect of fine sediments on stream temperatures, through their effect on hyporheic exchange flows. Results could be used to evaluate the potential use of 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.
29040	OK-11 Develop and propagate local Okanogan River summer/fall chinook	0	UCR SFCH	Hatchery/Supplementation Project - Project will distribute existing summer chinook production to historic but underseeded habitat with intent to increase production of Okanogan and Upper Mid-Columbia. Development of local brood stock may promote biological diversity.	No	No	No direct benefit to listed population, although results may indicate whether reintroduction or supplementation will work in the Okanogan Watershed for other species/stocks. Sponsor claims RPA 171 (BOR must fund hatchery reform), but that process presumes an approved HGMP that calls for a particular reform and relevance to listed fish. More acclimation sites may be good, but the need has not been substantiated yet.
29041	Evaluate Distribution, Abundance, Genetic Structure, and Habitat Use of Bull Trout Populations in the Columbia Cascade Province	0	Bull Trout			No	Not Reviewed
29042	Selective fish collection and harvesting gear	164	Multiple	Harvest project that may lead to reduced harvest mortality on listed stocks. Harvest methods will also be assessed for adequacy in collecting local broodstock.	No	Yes	Well considered project, responsive to Biop, encouraging that Colville Tribe is considering utilizing selective harvest techniques experimentally. Details are understandably sketchy, but motive is good and one has to start somewhere.
29043	SSHIAP - Columbia Cascade Province	154		Indirect benefit. Assemble analysis to support subbasin planning and direct restoration actions.	No	Yes	Both this and 29037 submitted by WDFW. Relationship/coordination between the two efforts needs to be better explained.

National Marine Fisheries Service Review of the Columbia Cascade Province Proposals
(Sorted by Project Number)

Enclosure 1

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29044	Protecting Habitat on Private Lands in the Methow Watershed	400, (152)	UCR SH, UCR SCH	Indirect benefit to aquatic species. Protect high quality riparian/shoreline areas.	No	Yes	Project could fit with action 153 if riparian easements were secured within the Washngton CREP. However, most of the benefits appear to accrue to terrestrial species. Stated objective is to maintain or restore habitat connectivity for terrestrial species. Specific parcels aren't identified making it impossible to assess fish benefits.
29045	Protect and Restore Salmon and Steelhead Habitat at the Similkameen/Okanogan River Confluence	400	Multiple, including UCR SH	If effective, potential to increase off-channel rearing survival by reconnecting portions of lower Similkameen River to floodplain.	No	Yes	Narrative implies that project will focus on reconnecting river to floodplain, but tasks indicate little such work. Task/budget list construction of instream structures. Budget does list removal of 1300 lineal feet of dike, but dike network is much more extensive than that. Would be helpful to know how much dike removal might eventually be possible and whether the actions proposed here might be affected by future efforts. Project may represent a good opportunity for cooperative venture with the COE on a more extensive project.
29046	Develop a Coordinated Resource Management Plan for Beaver Creek and plan and implement habitat restoration activities.	400	UCR SH, UCR SCH	Enhance survival by Improving riparian conditions and instream flows within the Beaver Creek watershed, an important Methow tributary.	No	Yes	Proposal is to sustain planning efforts in the watershed. To date, a number of passage improvements have been implemented, but little has been accomplished in the way of flow improvement.
29050	Phase I Okanogan River Spring Chinook Production	0	UCR SCH	Hatchery/Supplementation Project - No direct benefit to listed population.	No	No	The reintroduction of spring chinook into the Okanogan is an action agreed to by the fisheries co-managers since it furthers the Fish and Wildlife Program objectives. Initially using unlisted Carson stock, so no direct benefit to listed fish. Not RPA 171 project, the requirement that BOR fund NMFS approved hatchery reform measures identified in an approved HGMP does not translate to a requirement that all new hatchery actions, even good hatchery actions, are RPA 171 projects, especially when non-listed fish are involved. NMFS supports the phased approach that provides harvest opportunity while exploring the reintroduction issue.
29051	Develop Local Okanogan River Steelhead Brood Stock	0	UCR SH	Hatchery/Supplementation project to establish locally adapted steelhead stock, rather than the Wells Hatchery stock, promoting biological diversity.	No	No	Implementation presumes HGMP(under development) will be approved, and that it identifies as a reform measure the need to develop of a local broodstock. This is not a Safety Net project as conceived in the Biop.

Project No.	Title	RPA Actions	ESU(s) Affected	Statement of Potential Biological Benefit	Already ESA Req?	Biop?	Comments
29052	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 benefit. 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.
29053	Icicle/Wenatchee Habitat Acquisition	150	UCR SH, UCR SCH	Protect high quality riparian/shoreline area along lower Icicle Creek and the Wentchee River.	No	Yes	It is not clear that the portions of the property that provide fish habitat are vulnerable to development. While the property supports an array of ecologically important and robust habitats, it appears that much of it would be unsuitable for development. Would it be possible to purchase conservation easements for the sensitive portions of the parcel?

National Marine Fisheries Service Review of the Columbia Cascade Province Proposals
(Sorted by Project Number)

Enclosure 1

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29054	Stream Gaging Installation and Operations	149	UCR SCH, UCR SH, OR SOCK	Indirect effect. Guages could assist in protecting instream flows from authorized diversions	No	Yes	Guage data are invaluable in diagnosis of stream discharge pattern and, accordingly indintification of problems and opportunities to improve stream flows. However, regional fish managers are already aware of the location of most significant flow problems. It would seen, in the context of the fish and wildlife program, guages would be most valuable in planning for projects to resolve such problems. It is not clear that enforcement capability exists to ensure flows are protected in any event. Little evidence that project will actually result in more flows or greater protection for fish. Project would be implemented in priority subbasins where the BOR is already active (except Okanogan). Perhaps guage construction coulc be BOR responsibility.
29055	Columbia Cascade Water Rights Acquisition	151	UCR SH, UCR SPCH, UCR SFCH	Improve instream flows in Upper Columbia River subbasins. Project could potentially increase spawning and rearing survival.	No	Yes	Actions in the Entiat, Methow, and Wenatchee River are already required. Those in the Okanogan are not completely required. BOR is committed to resolving passage and flow problems in all but Okanogan. Request seems premature in that it is not yet know how much water, if any may be available for purchase. In many cases, flow improvement may be most efficiently and acceptably be achieved via change in point of diversion or conservation. Subject proposal assumes water purchase will be a significant tool. In either case, it will be important that the state is able to timely process water right changes and trust transfers to enable federal agency efforts to improve stream flows. Might be better to await the further development of BOR flow improvement effort before establishing water brokerages in priority subbasins.
29056	*Combined with project number 29015*						
199604000	Evaluate The Feasibility And Risks Of Coho Reintroduction In Mid-Columbia	0	COHO-U	Supplementation Project - Creation of naturally spawning coho population. No direct benefit for listed ESUs, results may indicate whether reintroduction or supplementation will work.	No	No	The premise of reintroduction in the watersheds chosen is correct but some costs seem excessive. Initial results of feasibility/impact analysis suggest that reintroduction is feasible.

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Enclosure 1

Project No.	Title	RPA Actions	ESU(s) Affected	Statement of Potential Biological Benefit	Already ESA Req?	Biop?	Comments
199604200	Restore and Enhance Anadromous Fish Populations and Habitat in Salmon Creek	500	UCR SH, UCR SCH	Provide access to 11 miles of Salmon Creek.Increase spawning and rearing area, and hence survival, for UCR SH, possibly spring chinook.	No	Yes	Anadromous fish are denied access to Salmon Creek as a result of BOR actions and facilities. While Salmon Creek Section 7 consultation is not yet underway, BOR has a responsibility to consult. Habitat in middle Salmon Creek is suitable for steelhead and spring chinook, and given the water quality problems in the Okanogan mainstem, tributary restoration will be an essential element of steelhead recovery. However, while not a biological issue, the proposal at present could cost nearly $20 million to implement, with additional long term O & M costs. With respect to Okanogan River ESU's, it would appear that more could be done elsewhere in the basin with BPA funds. Suggest considering alternatives including a lesser degree of pump exchange that could substantially lower costs. Finally, has it been determined that passage above Conconully is infeasible?
199609400	Increase sharp-tailed grouse and mule deer populations and enhance shrubsteppe/riparian habitats on the Scotch Creek Wildlife Area.	0				No	Wildlife Project - Not Reviewed
200000100	Improvement of Anadromous Fish Habitat and Passage in Omak Creek	400, 500	UCR SH	Increase survival by improving access to good quality habitat in Omak Creek. Increase spawning and rearing area for UCR SH.	No	Yes	Tributary passage improvements and habitat restoration are essential for steelhead recovery in the Okanogan River Basin. The mainstem, excepting areas of thermal refugia, is too warm to support steelhead through the summer.
200000200	Final Phase of the Chumstick Culvert Replacement and Habitat Restoration Enhancement	149	UCR SH, UCR SCH	Potentially increase spawning and survival by restoring passage to portions of the Chumstick Creek watershed (Wenatchee Subbasin)	No	Yes	While Chumstick Creek suffers a myriad of water quality, quantity, and physical habitat problems, it presents seasonally favorable conditions, and could provide important overwintering habitat. Further, regional efforts to improve habitat (e.g., CREP) may substantially improve habitat conditions over the long term. Replacing problem culverts now will allow at least seasonal use of most of the watershed and allow fish to access the remaining good quality habitats in the watershed.

National Marine Fisheries Service Review of the Columbia Cascade Province Proposals
(Sorted by Project Number)

Enclosure 1

Project No.	Title	RPA Actions	ESU(s) Affected	Statement of Potential Biological Benefit	Already ESA Req?	Biop?	Comments
200001300	Evaluate An Experimental Re-introduction of Sockeye Salmon into Skaha Lake	184	OR SOCK	Assesses the risks, with respect to disease transmission (M. cerebralis (whirling disease)), and benefits of an experimental re-introduction of sockeye salmon into Skaha Lake	No	No	Completion of the third stage of the project. Well thought out and explained method for determining the risk of whirling disease transmission associated with sockeye reintroduction.

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.