Independent Scientific Review Panel
for the Northwest Power Planning Council
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Preliminary Review

of

Fiscal Year 2002 Project Proposals for the Mountain Snake and Blue Mountain Provinces

ISRP 2001-9
September 28, 2001

Review Team

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ISRP Preliminary Review of Fiscal Year 2002 Proposals for the Mountain Snake and Blue Mountain Provinces

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Project ID	Title	Sponsor	Subbasin	FY02 Request	3 YR Estimate	Response Needed?	Page
27001	Asotin County Riparian Buffer and Couse and Tenmile Creeks Protection and Implementation Project	Asotin County Conservation District	Asotin	$294,200	$882,600	Yes	101
27002	Assess Salmonids in the Asotin Creek Watershed	Washington Department of Fish and Wildlife	Asotin	$316,885	$775,915	Yes	104
27003	Characterize and Assess Wildlife-Habitat Types and Structural Conditions for Subbasins within the Blue Mountain Province	Northwest Habitat Institute	Grande Ronde	$201,175	$312,145	No - Fundable in Part	9
27004	Grande Ronde and Imnaha Stream Channel Complexity and Fish Passage Barrier Inventory, Prioritization and Remediation	Oregon Watershed Enhancement Board	Grande Ronde	$191,580	$753,540	Yes	131
27005	Increase CREP Enrollment and Enhance Riparian Protections in the Grande Ronde and Imnaha basins	Oregon Watershed Enhancement Board	Grande Ronde	$170,880	$521,720	Yes	131
27006	Establishing Baseline Key Ecological Functions of Fish and Wildlife for Subbasin Planning	Northwest Habitat Institute & WDFW	Grande Ronde	$153,500	$303,000	No - Not Fundable	11
27007	Assessment of spring/summer chinook salmon habitat within the Grande Ronde Subbasin.	USDA Forest Service, BLM, USGS, Utah State University	Grande Ronde	$205,000	$235,000	Yes	19
27008	Grande Ronde River Riparian Restoration	BLM	Grande Ronde	$307,730	$768,020	Yes	129
27009	SSHIAP - Blue Mountain Province	WDFW	Asotin	$200,000	$260,000	Yes	103
27010	Snake River Hells Canyon Tributary Enhancements	Idaho Department of Fish and Game	Snake Hells Canyon	$101,000	$2,048,000	No - Not Fundable	111

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27011	Lookingglass Creek land purchase for watershed protection (spawning and rearing habitat continuity and water quality at Lookingglass Hatchery).	Confederated Tribes of the Umatilla Indian Reservation	Grande Ronde	$2,263,400	$2,274,400	Yes	130
27012	Restore and Enhance Grande Ronde Valley Deciduous Riparian Habitat	Oregon Department Fish and Wildlife	Grande Ronde	$156,000	$551,000	Yes	125
27013	Grande Ronde River Stream Restoration - La Grande, Oregon	Union County and Union Soil and Water Conservation District	Grande Ronde	$816,080	$841,080	Yes	126
27014	Protect and Restore the Asotin Creek Watershed	Nez Perce Tribe	Asotin	$121,000	$374,000	Yes	102
27015	Develop Long-Term Management Plan for Snake River (Hells Canyon Reach) White Sturgeon	IDFG - IOSC	Snake Hells Canyon	$116,500	$161,500	No - Not Fundable	107
27016	Evaluate the effects of hyporheic discharge on egg pocket water temperture in Snake River fall chinook salmon spawning areas	Pacific Northwest National Laboratory	Snake Hells Canyon	$154,136	$691,776	Yes	110
27017	Bull trout population assessment and life history characteristics in association with habitat quality and land use: template for recovery planning.	Utah Cooperative Fish and Wildlife Research Unit, USGS	Imnaha	$469,792	$1,009,568	Yes	14
27018	Oregon Plan Blue Mountain Province Fish Screening/Fish Passage.	Oregon Department of Fish and Wildlife	Grande Ronde	$153,314	$153,314	No - Fundable	132
27019	Adult Salmon Abundance Monitoring	NPT/Pacific Northwest National Laboratory	Grande Ronde	$531,182	$1,688,213	Yes	137
27020	Grande Ronde Subbasin Water Right Acquisition Program	Oregon Water Trust	Grande Ronde	$62,620	$205,322	Yes	117
27021	Adult Steelhead Status Monitoring - Imnaha River Subbasin	Nez Perce Tribe	Imnaha	$1,055,449	$2,564,551	Yes	113

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27022	Wallowa County Culvert Inventory	Nez Perce Tribe	Grande Ronde	$170,603	$548,619	No - Fundable	133
27023	Precious Lands Wildlife Habitat Expansion	Nez Perce Tribe	Grande Ronde	$3,373,974	$10,151,474	No - Fundable	115
27024	Life history strategies in Oncorhynchus mykiss: interactions between anadromous and resident forms.	Oregon Department of Fish and Wildlife	Grande Ronde	$237,474	$684,182	Yes	136
27025	Acquire South Fork Asotin Creek Property	Rocky Mountain Elk Foundation	Asotin	$3,489,500	$3,559,500	No - Fundable	105
28001	Evaluate Factors Influencing Bias and Precision of Chinook Salmon Redd Counts	USDA Forest Service-Rocky Mountain Research Station	Salmon	$198,738	$626,522	Yes	36
28002	Fluvial Bull Trout Migration and Life History Investigations in the upper Salmon River Subbasin	Shoshone-Bannock Tribes	Salmon	$163,440	$451,440	No - Not Fundable	16
28003	Characterize and Assess Wildlife-Habitat Types and Structural Conditions for Subbasins within the Mountain Snake Province	Northwest Habitat Institute	Salmon	$375,935	$1,118,197	No - Fundable in Part	9
28004	Lawyer Creek Subwatershed-Steelhead Trout Habitat Improvement Project	Lewis Soil Conservation District	Clearwater	$246,500	$679,500	Yes	58
28005	Assessment of spring/summer chinook salmon habitat within the Salmon River Subbasin.	USDA Forest Service, BLM, USGS, Utah State University	Salmon	$395,000	$440,000	Yes	19
28006	Tag and evaluate PIT-tag retention in sub-yearling chinook salmon	Biomark, Inc.	Salmon	$82,044	$82,044	Yes	41
28007	Causes and effects of nonnative trout invasions in the Salmon and Clearwater River subbasins	USDA Forest Service, Rocky Mountain Research Station	Salmon	$64,900	$676,900	Yes	18
28008	Riparian Conservation Easement Purchase of Scarrow Property on Lake Creek a Tributary to the Secesh River, Idaho.	Idaho Department of Fish and Game and Idaho Office of Species Conservation	Salmon	$68,500	$68,500	Yes	52

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28009	Smolt Condition and Adult Returns: An Indirect Method of Assessing the Potential Mitigation Benefits of Nutrient Enhancement Projects	IDFG - IOSC	Salmon	$44,600	$44,600	Yes	40
28010	Nez Perce Salmon River Terrestrial	Nez Perce Tribe	Salmon	$2,801,996	$8,826,742	Yes	54
28011	Incidental Mortality in Selective Sport Fisheries	IDFG - IOSC	Salmon	$200,000	$700,000	No - Not Fundable	41
28012	Four-Step Planning to Identify Safety-Net Projects for Idaho Steelhead	IDFG - IOSC	Salmon	$206,200	$656,200	Yes	22
28013	RENOVATE SELWAY FALLS ANADROMOUS FISH PASSAGE TUNNEL	IDFG - IOSC	Clearwater	$344,700	$344,700	Yes	60
28014	Bull trout population assessment and life history characteristics in association with habitat quality and land use: template for recovery planning.	Utah Cooperative Fish and Wildlife Research Unit, USGS	Salmon	$469,792	$1,009,568	Yes	14
28015	Benefit/Risk Analysis to Promote Long-Term Persistence of Chinook Salmon in the Middle Fork Salmon River	Nez Perce Tribe	Salmon	$156,726	$181,726	Yes	22
28016	RESTORATION OF THE YANKEE FORK SALMON RIVER	Custer Soil & Water Conservation District, IOSC	Salmon	$799,785	$3,213,505	Yes	51
28017	Monitoring the Selway Falls renovation project for passage of spring chinook salmon and steelhead	Pacific Northwest National Laboratory	Clearwater	$134,350	$413,992	Yes	61
28018	Lower Salmon River Tributary Protection and Enhancement	Idaho Department of Fish and Game	Salmon	$101,000	$1,048,000	Yes	53
28019	Improve Stream Habitat by Reducing Discharge from Animal Feeding Operations	Idaho Department of Environmental Quality - IOSC	Salmon	$2,026,000	$2,026,000	Yes	57

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28034	Chinook Salmon Smolt Survival and Smolt to Adult Return Rate Quantification, South Fork Salmon River, Idaho	Nez Perce Tribe	Salmon	$660,000	$1,890,000	Yes	37
28035	GEOMORPHIC CONTROLS ON WATERSHED-SCALE AVAILABILITY OF CHINOOK SALMON SPAWNING HABITAT IN THE SALMON RIVER	University of Idaho, USDA Forest Service Rocky Mountain Research Station	Salmon	$133,625	$400,875	Yes	46
28036	Holistic Restoration of Critical Habitat on Non-federal Lands in the Pahsimeroi Watershed, Idaho	Custer Soil & Water Conservation District / IOSC	Salmon	$2,606,341	$7,926,041	Yes	48
28037	Holistic Restoration of Critical Habitat on Non-federal Lands in the Lemhi Watershed, Idaho	Lemhi Soil & Water Conservation District / IOSC	Salmon	$3,238,682	$9,839,182	Yes	49
28038	Holistic Restoration of Critical Habitat on Non-federal Lands, East Fork Salmon Watershed, Idaho	Custer Soil & Water Conservation District / IOSC	Salmon	$2,608,084	$7,879,984	Yes	48
28039	Holistic Restoration of Habitat on Non-federal Lands, Middle Salmon-Panther Watershed, Idaho	Lemhi Soil & Water Conservation District / IOSC	Salmon	$1,863,326	$5,688,526	Yes	49
28040	Holistic Restoration of Critical Habitat on Non-federal Lands, Upper Salmon Watershed, Idaho	Custer Soil & Water Conservation District / IOSC	Salmon	$2,567,545	$7,847,045	Yes	48
28041	Dworshak Zooplankton Entrainment	Nez Perce Tribe	Clearwater	$434,463	$1,182,926	No - Not Fundable	70
28042	Timing and location of spawning by pure and introgressed cutthroat trout in the North Fork Clearwater River	Nez Perce Tribe	Clearwater	$311,878	$937,698	No - Not Fundable	71
28043	Crooked River Ecosystem Assessment at the Watershed Scale	Nez Perce Tribe Fisheries/Watershed	Clearwater	$131,213	$601,213	Yes	72
28044	Protect and Restore Deer Creek Watershed	Nez Perce Tribe Fisheries/Watershed	Salmon	$155,213	$669,213	Yes	52

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28045	Evaluating stream habitat using the Nez Perce Tribe Fisheries/Watershed Watershed Monitoring and Evaluation Plan	Nez Perce Tribe Fisheries and Watershed	Clearwater	$381,108	$1,190,708	Yes	73
28046	Impacts of Salmon Carcasses on Chinook Salmon and Watershed Restoration in Subbasins of the Clearwater River	Nez Perce Tribe Fisheries and Watershed	Clearwater	$179,002	$756,502	Yes	74
28047	Restore and Protect Red River Watershed	Nez Perce Tribe Fisheries Watershed	Clearwater	$199,567	$770,962	Yes	75
28048	Protect and Restore Crooked Fork Creek to Colt Killed Analysis Area	Nez Perce Tribe	Clearwater	$423,365	$1,557,065	Yes	76
28049	Restore and Protect Slate Creek Watershed	Nez Perce Tribe Fisheries Watershed	Salmon	$231,841	$966,099	Yes	55
28050	Protect and Restore Little Salmon River	Nez Perce Tribe Fisheries/Watershed	Salmon	$262,896	$560,538	Yes	54
28051	Assess and Monitor Steelhead in the Middle Fork Salmon River Subbasin	Nez Perce Tribe	Salmon	$416,147	$1,250,402	Yes	39
28052	Adult Snake River steelhead monitoring in the South Fork Salmon River Basin.	NPT/Pacific Northwest National Laboratory	Salmon	$708,000	$1,677,000	Yes	38
28054	Evaluation of Pisces Fish Protective Guidance and Monitoring System	Balaton Power, Inc.	Salmon	$1,060,000	$1,060,000	Yes	40
28055	Four-Step Safety-Net Plan for Upper Lochsa River B-Run Steelhead	Columbia River Inter-Tribal Fish Commission	Clearwater	$73,422	$89,220	Yes	23
28056	Four-Step Safety-Net Plan for South Fork Salmon River B-Run Steelhead	Columbia River Inter-Tribal Fish Commission	Salmon	$73,422	$89,220	Yes	22
28057	Four-Step Safety-Net Plan for Lower Salmon River A-Run Steelhead	Columbia River Inter-Tribal Fish Commission	Salmon	$73,422	$89,220	Yes	21

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28058	Restore Fish Passage and Habitat in the Upper East Fork of the South Fork of the Salmon River	IDFG - IOSC	Salmon	$842,000	$894,000	Yes	56
28059	Restoring anadromous fish habitat in the Lapwai Creek watershed.	Nez Perce Soil and Water Conservation District	Clearwater	$372,060	$961,116	Yes	77
28060	Assess Stream Quality for Salmonid Recovery in the Lower Clearwater Subbasin	Nez Perce Soil and Water Conservation District	Clearwater	$95,148	$145,648	Yes	78
198335000	Nez Perce Tribal Hatchery	Nez Perce Tribe	Clearwater	$3,485,000	$10,245,000	Yes	79
198335003	Nez Perce Tribal Hatchery Monitoring And Evaluation	Nez Perce Tribe	Clearwater	$1,884,430	$6,087,194	Yes	80
198402500	GRANDE RONDE BASIN FISH HABITAT ENHANCEMENT PROJECT	OREGON DEPARTMENT OF FISH AND WILDLIFE	Grande Ronde	$456,416	$1,438,850	Yes	119
198740700	Dworshak Integrated Rule Curves/M&E	Nez Perce Tribe	Clearwater	$201,291	$541,291	No - Not Fundable	81
198805301	Northeast Oregon Hatchery Master Plan	Nez Perce Tribe	Grande Ronde	$2,714,740	$24,232,740	Yes	142
198805305	Northeast Oregon Hatcheries Implementation (ODFW)	Oregon Department of Fish and Wildlife	Grande Ronde	$79,376	$248,187	Yes	144
198909800	Idaho Supplementation Studies	IDFG - IOSC	Salmon	$996,726	$2,971,726	Yes	29
198909801	Evaluate Supplementation Studies in Idaho Rivers (ISS)	USFWS - Idaho Fishery Resource Office	Clearwater	$126,320	$406,320	Yes	29
198909802	Evaluate Salmon Supplementation Studies in Idaho Rivers- Nez Perce Tribe	Nez Perce Tribe	Salmon	$676,476	$1,998,214	Yes	29
198909803	Salmon Supplementation Studies in Idaho- Shoshone-Bannock Tribes	Shoshone-Bannock Tribes	Salmon	$213,569	$683,658	Yes	30
199005500	Steelhead Supplementation Studies in Idaho Rivers	IDFG - IOSC	Clearwater	$686,307	$2,009,759	Yes	30

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199102800	Monitoring smolt migrations of wild Snake River sp/sum chinook salmon	National Marine Fisheries Service	Salmon	$350,000	$1,050,000	Yes	34
199107100	Snake River Sockeye Salmon Habitat and Limnological Research	Shoshone-Bannock Tribes	Salmon	$441,369	$1,370,558	Yes	44
199107200	Redfish Lake Sockeye Salmon Captive Broodstock Program	IDFG - IOSC	Salmon	$853,229	$3,044,520	Yes	43
199107300	Idaho Natural Production Monitoring and Evaluation	IDFG - IOSC	Salmon	$831,000	$2,526,000	Yes	32
199202601	Implement the Grande Ronde Model Watershed Program Administration and Habitat Restoration Projects	Grande Ronde Model Watershed Program	Grande Ronde	$1,376,000	$5,088,000	Yes	121
199202603	Upper Salmon Basin Watershed Project Administration / Implementation Support	Idaho Soil Conservation Commission and IOSC	Salmon	$285,364	$870,364	Yes	46
199202604	Investigate Life History of Spring Chinook Salmon and Summer Steelhead in the Grande Ronde River Basin and Monitor Salmonid Populations and Habitat	Oregon Department of Fish and Wildlife	Grande Ronde	$1,412,651	$4,393,253	Yes	134
199204000	Redfish Lake Sockeye Salmon Captive Broodstock Rearing and Research	National Marine Fisheries Service	Salmon	$1,600,000	$3,191,200	No - NA	44
199303501	Enhance Fish, Riparian, and Wildlife Habitat Within the Red River Watershed	Idaho County Soil and Water Conservation District	Clearwater	$561,000	$1,666,000	Yes	81
199401500	Idaho Fish Screen Improvement	IDFG - IOSC	Salmon	$1,000,000	$3,148,050	No - Fundable	45
199401805	Continued Coordination and Implementation of Asotin Creek Watershed Projects	Asotin County Conservation District	Asotin	$297,285	$990,285	Yes	99
199403900	Watershed Restoration Planner	Nez Perce Tribe	Grande Ronde	$64,289	$202,670	Yes	122
199405000	Salmon River Habitat Enhancement M & E	Shoshone-Bannock Tribes	Salmon	$249,500	$755,000	Yes	57

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199405402	Characterize the Migratory Patterns, Population Structure, Food Habits, Abundance of Bull Trout from Subbasins in the Blue Mountain Province.	Oregon Department of Fish and Wildlife	Grande Ronde	$670,804	$1,946,270	Yes	13
199501300	Resident Fish Substitution Program	Nez Perce Tribe	Clearwater	$243,355	$1,072,186	Yes	84
199604300	Johnson Creek Artificial Propagation Enhancement Project	Nez Perce Tribe	Salmon	$4,410,100	$6,740,688	Yes	31
199607702	Protect and Restore Lolo Creek Watershed	Nez Perce Tribe Fisheries Watershed Program	Clearwater	$502,192	$1,924,921	Yes	87
199607703	Protecting and Restoring the Waw'aatamnima (Fishing)(Squaw) Creek to 'Imnaamatnoon (Legendary Bear)(Papoose) Creek Watersheds Analysis Area	Nez Perce Tribe	Clearwater	$489,300	$1,518,500	Yes	88
199607705	Restore McComas Meadows/Meadow Creek Watershed	Nez Perce Tribe Fisheries Watershed Program	Clearwater	$573,832	$1,221,301	Yes	89
199608000	NE Oregon Wildlife Mitigation Project -- "Precious Lands"	Nez Perce Tribe	Grande Ronde	$439,803	$1,279,903	Yes	114
199608300	CTUIR Grande Ronde Subbasin Restoration	Confederated Tribes Umatilla Indian Reservation	Grande Ronde	$200,000	$585,000	No - Fundable	124
199608600	Clearwater Focus Program	Idaho Soil Conservation Commission	Clearwater	$103,626	$310,878	Yes	90
199700100	Captive Rearing Project for Salmon River Chinook Salmon	IDFG - IOSC	Salmon	$750,482	$4,050,482	Yes	42
199700900	Evaluate Potential Means of Rebuilding Sturgeon Populations in the Snake River Between Lower Granite and Hells Canyon Dams	Nez Perce Tribe	Snake Hells Canyon	$290,510	$1,065,510	Yes	105
199701501	Imnaha Smolt Survival and Smolt to Adult Return Rate Quantification	Nez Perce Tribe	Imnaha	$466,802	$2,334,258	Yes	112

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199702500	Implement The Wallowa County/Nez Perce Tribe Salmon Habitat Recovery Plan	Nez Perce Tribe	Grande Ronde	$45,675	$132,025	Yes	123
199703000	Chinook Salmon Adult Abundance Monitoring	Nez Perce Tribe/Pacific Northwest National Laboratory	Salmon	$1,033,000	$2,719,000	Yes	34
199703800	Preserve Salmonid Gametes and Establish a Regional Salmonid Germplasm Repository	Nez Perce Tribe	Salmon	$1,279,000	$4,383,000	Yes	23
199706000	Clearwater Subbasin Focus Watershed Program - NPT	Nez Perce Tribe	Clearwater	$218,000	$702,000	Yes	90
199800702	Grande Ronde Supplementation: Lostine River O&M and M&E	Nez Perce Tribe	Grande Ronde	$609,302	$1,902,671	No - Fundable	145
199800703	Facility O&M And Program M&E For Grande Ronde Spring Chinook Salmon and Summer Steelhead	Confederated Tribes of the Umatilla Indian Reservation	Grande Ronde	$702,010	$2,405,288	Yes	146
199800704	Northeast Oregon Hatcheries Implementation (ODFW)	Oregon Department of Fish and Wildlife	Grande Ronde	$206,048	$633,197	Yes	144
199801001	Grande Ronde Basin Spring Chinook Captive Broodstock Program	Oregon Department of Fish and Wildlife	Grande Ronde	$739,096	$2,329,994	No - Fundable	147
199801003	Spawning distribution of Snake River fall chinook salmon	U.S. Fish and Wildlife Service	Snake Hells Canyon	$174,162	$435,962	Yes	107
199801004	Monitor and EvaluateYearling Snake River Fall Chinook Released Upstream Of Lower Granite Dam	Nez Perce Tribe	Snake Hells Canyon	$330,241	$1,020,741	Yes	108
199801005	Pittsburg Landing (199801005),Capt. John Rapids (199801007), Big Canyon (199801008) Fall Chinook Acclimation Facilities	Nez Perce Tribe	Snake Hells Canyon	$722,000	$2,246,000	No - Fundable	109
199801006	Captive Broodstock Artificial Propagation	Nez Perce Tribe	Grande Ronde	$170,177	$526,000	Yes	148

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199901400	Little Canyon Creek Subwatershed-Steelhead Trout Habitat Improvement Project	Lewis Soil Conservation District	Clearwater	$236,500	$649,500	Yes	92
199901500	Restoring Anadromous Fish Habitat in Big Canyon Watershed	Nez Perce Soil and Water Conservation District	Clearwater	$193,452	$600,356	Yes	93
199901600	Protect and Restore Big Canyon Creek Watershed	Nez Perce Tribe	Clearwater	$355,000	$1,588,300	Yes	94
199901700	Protect and Restore Lapwai Creek Watershed	Nez Perce Tribe	Clearwater	$436,600	$1,669,900	Yes	95
199901800	Characterize and quantify residual steelhead in the Clearwater River, Idaho	U.S. Fish and Wildlife Service	Clearwater	$101,950	$134,950	Yes	96
199901900	Holistic Restoration of the Twelvemile Reach of the Salmon River near Challis, Idaho	Custer Soil & Water Conservation District / IOSC	Salmon	$1,844,000	$5,158,000	Yes	49
199902000	Analyze the Persistence and Spatial Dynamics of Snake River Chinook Salmon	USDA Forest Service-Rocky Mountain Research Station	Salmon	$112,410	$351,242	Yes	35
200002100	Securing Wildlife Mitigation Sites - Oregon, Ladd Marsh WMA Additions	Oregon Department of Fish and Wildlife	Grande Ronde	$193,185	$658,685	Yes	116
200002800	Evaluate Status of Pacific Lamprey in the Clearwater River Drainage, Idaho	Idaho Department of Fish and Game and Idaho Office of Species Conservation	Clearwater	$144,550	$464,550	No - Fundable	96
200003400	Protect and Restore The North Lochsa Face Analysis Area Watersheds	Nez Perce Tribe	Clearwater	$285,835	$996,862	Yes	97
200003500	Rehabilitate Newsome Creek Watershed - South Fork Clearwater River	Nez Perce Tribe Fisheries Watershed	Clearwater	$287,732	$1,424,334	Yes	98
200003600	Protect & Restore Mill Creek	Nez Perce Tribe	Clearwater	$105,560	$482,511	Yes	98

ISRP Preliminary Review of Fiscal Year 2002 Proposals for the Mountain Snake and Blue Mountain Provinces

Introduction

This report provides preliminary comments and recommendations of the Independent Scientific Review Panel (ISRP) and Peer Review Groups on projects submitted for Fiscal Year 2002 funding in the Mountain Snake and Blue Mountain Provinces. It provides project sponsors and the public an opportunity to respond to ISRP concerns before the ISRP makes its final recommendation to the Council on December 21, 2001. This report also provides information to the Columbia Basin Fish and Wildlife Authority for its use in project prioritization.

The review process to develop these preliminary recommendations and comments included several elements. Each proposal was reviewed by at least three reviewers and discussed by the full review team. Proponents of each proposal gave presentations to the ISRP. Each presentation was followed by a question and answer session. The ISRP review teams visited most of the subbasins in the provinces, during which the teams engaged in informal discussions with project leaders. The combination of the discussions and oral presentations was invaluable in identifying potential issues and clarifying the nature of the projects. The site visits and presentations were well organized and informative. The ISRP was privileged to witness this year's strong run of fish spawning in the wild and appreciates the project sponsors' effort during the busy field season.

With the exception of a programmatic statement on monitoring, this report does not include a programmatic section with identification of general issues that cut across subbasins and provinces. Although many such issues arose, the ISRP had insufficient time to reach consensus recommendations on these broad issues. The ISRP plans to include discussion of programmatic issues in later reports. In addition, the ISRP was unable to complete the reviews of Lower Snake River Compensation Plan proposals and the Northeast Oregon Hatchery Step 2 documents. The ISRP plans to complete the preliminary review of those projects in late October 2001.

Response Instructions

This preliminary report marks the completion of the first step in the project selection process. As stated above, project proponents and the public have the opportunity to respond to this report. Responses should focus on the technical comments, answer all review questions, and clarify uncertain information. Responses should be formatted to address concerns point by point, clearly identifying each concern and providing a response. The title and project number of the proposal should be displayed prominently on the front page of the response. Electronic documents should be named the project ID; e.g. "2222response.doc" and email messages should contain the project ID in the subject line.

Important: If the response includes any change in the budget, the project sponsors must resubmit Part I of the proposal form with a revised budget section.

Responses and comments must be received at the Northwest Power Planning Council no later than 5 p.m., October 12, 2001. Please email responses and comments to kphillips@nwppc.org. Attachments should be in Microsoft Word or Excel (for tables).

If email is not available, please mail the response and diskette/CD to:
Northwest Power Planning Council
Attention: Kendra Phillips
Response to ISRP
851 SW 6th Avenue, Suite 1100
Portland, OR 97204

The Council staff will verify that responses were received and successfully downloaded via email. If you have any questions regarding the response process please contact Erik Merrill at the Northwest Power Planning Council at (503) 222-5161 or 1-800-452-5161, or by email: emerrill@nwppc.org. If you need assistance incorporating graphs or maps in your response, please contact Eric Schrepel at the Council or by email: eschrepel@nwppc.org.

Concurrently, CBFWA, with the ISRP's technical review in hand, will generate a list of projects recommended for funding and finalize the subbasin summaries as part of its draft annual implementation work plan. The work plan is scheduled for release November 30, 2001. For more details on the CBFWA process and province reviews in general see www.cbfwa.org.

The ISRP will then review the responses and CBFWA's recommended list of projects and provide a second and final report to the Northwest Power Planning Council by December 21, 2001. Thereafter, the Council will make its funding recommendations to Bonneville. It is anticipated that the Council's funding recommendations will be made in January or February of 2002.

Recommendation Categories: Who Needs to Respond?

Preliminary recommendations and comments are provided for each of the 142 proposals submitted. These recommendations are split into three basic categories: 1) fundable, further ISRP response review is not needed (10 proposals; 2 were fundable in part); 2) a response review is needed (120 proposals); and 3) do not fund, a response is not warranted (8 proposals). Two proposals were considered not amenable to scientific review.

Proposals receiving "a response review is needed" will be recommended as "fundable" by the ISRP only if a response is provided that adequately addresses reviewer comments. Although the ISRP will not review responses to those proposals that received a "do not fund, a response is not warranted," project sponsors are welcome to provide comments to the Council.

ISRP recommendation categories are based on the criteria provided in the 1996 amendment to the Northwest Power Act. The amended Act directs the ISRP to review projects in the context of the Council's program and in regard to whether they:

1. are based on sound science principles;
2. benefit fish and wildlife;
3. have clearly defined objectives and outcomes; and
4. have provisions for monitoring and evaluation of results.

Pursuant to the 1996 amendment, the Council fully considers the ISRP recommendations when making its recommendations regarding funding, and provides an explanation in writing where its recommendations diverge from those of the ISRP.

For final recommendations, the ISRP uses "fundable," "not fundable," and variations to summarize the extent to which a proposal meets the ISRP review criteria and to capture the level of ISRP confidence in a proposal. After its Fiscal Year 1999 review, the ISRP began using "fundable" rather than "adequate proposal," because funding recommendations are the common currency between the Council, CBFWA, and BPA. As such, the "fundable" categories enable a ready comparison with CBFWA's recommendations, which is part of the ISRP review.

Fundable is assigned to a proposal that substantially meets each of the ISRP criteria. Each proposal does not have to contain tasks that independently meet each of the criteria but can be an integral part of a program that provides the necessary elements. For example, a habitat restoration proposal may use data from a separate monitoring and evaluation proposal to measure results. The proposal must demonstrate this integration. Some "fundable" proposals may require minor clarifications and adjustments to methods and objectives by the sponsor in consultation with the Council and BPA in the final project selection process.

Fundable in Part is assigned to a proposal that includes work that is scientifically supported, but also work that is not. In this case, the ISRP specifies which objectives or tasks are not scientifically sound and recommends that these parts of the proposal not be funded. Examples are proposals that include objectives that are not scientifically supported, for instance a proposal for both background assessment work and concurrent major on-the-ground implementation that could not be supported before results of the assessment were known, and proposals that included use of unsound methods to meet a particular objective.

Not Fundable is assigned to a proposal that is significantly deficient in one or more of the ISRP review criteria. One example is a proposal for an ongoing project that may offer benefits to fish but does not include provisions for monitoring and evaluation or report past results. Another example is a research proposal that is technically sound but does not offer benefits to fish and wildlife because it substantially duplicates past efforts and does not offer new insights. Usually a deficiency in one area is a symptom of overall deficiency in the proposal. In most cases, proposals that receive "Not Fundable" recommendations lack detailed methods, provision for monitoring and evaluation, or

have the potential for deleterious effects on native populations. The ISRP notes that numerous "not fundable" projects propose needed actions or are an integral part of a watershed effort, but the proposed methods, tasks and objectives are not scientifically sound. The ISRP comments are intended to indicate areas where serious remedial effort, such as significant revision and review, is needed before funding continues. In some cases, an RFP is warranted to address the needed action.

ISRP comments also include observations on budgetary, *in lieu*, and other issues that are not central to the scientific review. These observations do not dictate whether a project will receive a "fundable" or "not fundable" recommendation. Instead, these comments are intended to flag issues for the Council, BPA, CBFWA, and the public that require further inquiry.

Monitoring, Evaluation, and Reporting of Results

This statement on monitoring and evaluation (M&E) should be considered a work in progress. It is included here because the issue of adequate monitoring arises in many proposal reviews.

As specified in the 1996 Amendment to the Power Act, a primary review function of the ISRP is to determine if projects are based on sound scientific principles and are likely to benefit fish and wildlife. Integral to this determination is whether projects monitor and evaluate progress and report results that allow measurement of benefits. Project proposals often lack detailed description of the kind of monitoring and evaluation that is necessary in sound scientific programs. Both monitoring and evaluation and reporting of results are often inadequate in proposals submitted for funding under the Fish and Wildlife Program and we offer the following suggestions for routine, effectiveness, and research monitoring.

For some projects, monitoring is made difficult by the localized nature of the project compared to the larger spatial scale on which the ultimate ecological responses (e.g., increased populations of fish or wildlife) can be expected. This is particularly true of many proposals for which the target species to be benefited is an anadromous fish. For such projects monitoring can in part be addressed at the level of the subbasin plan and with separate larger-scale monitoring projects. Monitoring of ecological conditions and fish stock status in the subbasin as a whole must be sufficient to reveal whether the initial diagnosis of the subbasin was correct and whether the ecological problems are being solved by the cumulative effectiveness of the projects in that subbasin. The large-scale aspects of monitoring may best be addressed by separate projects that have the explicit objective of monitoring ecological conditions and stock status for a large area (e.g., a subbasin, basin, or region). Eventually the adequacy of the monitoring for an individual project would be judged in terms of the combined project-specific monitoring in the proposal and the linkage (which also should be described in the proposal) to the larger scale monitoring in the subbasin.

At the level of individual projects, monitoring should test for the proximate effectiveness of the project's activities. Each project should propose the level of monitoring (see

discussion below) that is needed, should justify the adequacy of this level of monitoring for determining success of the project, and should outline the sampling design and methods that will be applied to attain monitoring goals. The monitoring plan may be provided directly as part of a project proposal (thus included in its background, methods and budget) or may be provided by specific reference through other parallel or larger scale (e.g., subbasin level) project proposals.

Proposals must indicate plans for monitoring and evaluation of project effectiveness, and, for ongoing projects, include summaries of monitoring data, in figures and tables, even if the monitoring is conducted by another project. Reviewers look for an M&E plan or a project link to a larger M&E program that can help determine whether an action provides biologically measurable results, ultimately in terms of fish or wildlife numbers. The ISRP is not recommending major research-level data collection for all projects. Most monitoring does not provide strong evidence of cause and effect, which requires an explicit experimental framework. Rather, we envision use of cost-effective, consistent, written procedures that can be easily replicated by new personnel. Monitoring and evaluation at the basin, province, or subbasin scale may realize additional savings if proponents of related projects collectively design and implement their monitoring and evaluation activities.

Each project should propose the level of monitoring (see discussion below) that is needed. How can this be decided? For example, what M&E is needed when a faulty culvert is replaced? How does it compare to M&E needed to evaluate the collective projects in the Fish and Wildlife Program for recovery of spring chinook runs in the John Day River Basin? How does it compare to a project that evaluates the survival rates of adult salmonids caught and released from tangle nets?

Monitoring has been categorized in a hierarchical sequence (Tier 1, Tier 2, or Tier 3) in the NMFS All-H document (*Conservation of Columbia Basin Fish:* Final Basinwide Salmon Recovery Strategy, Volume 1, Table 4). We also recommend categorizing monitoring in a hierarchical sequence from monitoring of implementation and effectiveness of individual projects to large-scale statistical studies and research experiments. Four hierarchical levels should be considered: 1) implementation monitoring, 2) trend monitoring (NMFS Tier 1), 3) statistical monitoring (NMFS Tier 2), and 4) research monitoring (NMFS Tier 3). We add "implementation" monitoring as a term to describe monitoring of task completion. For example, miles of stream fenced, number of culverts removed, completion of reports, irrigation diversions maintained, etc. Implementation monitoring is often given in proposals to the Council's Fish and Wildlife Program. Implementation monitoring results must be presented, but sound science requires that project results also be measured in terms of benefits to fish and wildlife.

- Tier 1 (trend or routine) monitoring: Bisbal (2001) defined *trend monitoring*, to be monitoring that "tracks the variability of a particular parameter over a long period of time, and relies on obtaining data from revisits to a single site", a low level of monitoring that falls under the NMFS Tier 1.

- Tier 2 (statistical) monitoring: Monitoring for statistical inference to larger areas and longer time periods requires both probabilistic selection of study sites and repeated visits (NMFS Tier 2).

- Tier 3 (research) monitoring: Monitoring, for those projects or groups of projects whose objectives include establishment of mechanistic links between management actions and salmon or other fish or wildlife population response (NMFS Tier 3). Bisbal (2001) defines this level of effort as *effects* or *response monitoring*; the repeated measurement of environmental variables to detect changes caused by external influences. The key words here are "establishment of mechanistic links" and "detect changes caused by external influences." Generally, the results of Tier 3 research monitoring qualify for publication in the refereed scientific literature.

The ISRP does not expect expensive Tier 3 research monitoring for most small individual projects, although any project could contain research level objectives. Each individual proposal must include at least Tier 1 trend monitoring or Tier 2 statistical monitoring, and these levels of monitoring often can be both simple and inexpensive. Tier 1 trend monitoring may be adequate for projects such as culvert replacement or water addition (e.g., are fish found upstream of the culvert after replacement? Have fish colonized once-dry creeks after water addition?). Tier 1 trend monitoring need not require data collection every year or over an entire study site. Project proponents should use their detailed and local biological knowledge to determine what needs to be measured to determine if their project is achieving its specific biological objectives (e.g., has a project intended to lower water temperature in a stream in fact done so, by comparison to similar but untreated areas, and thus resulted in more use by fish, again by comparison with similar but untreated areas or by comparison with preproject data). All monitoring requires careful and clearly justified selection of what is to be measured (the response) and of how and where measurements are to be made (the experimental or sampling design). Further, the data gathered should be summarized, analyzed, and reported regularly to allow interpretation of the effectiveness of project techniques or efforts.

Tier 1 trend monitoring on individual project sites does not establish cause and effect relationships (i.e., is not research) and does not provide statistical inductive inferences to larger areas or time periods. However, Tier 1 trend monitoring on similar projects replicated over time and space can provide compelling evidence for general conclusions. An example of Tier 1 trend monitoring would be monitoring after culvert replacement to provide observations of whether or not adults pass through it, understanding that it might take a year or two or a cycle of abundance before surpluses of fish below encourage them

to move upstream. Selected stream reaches above replaced culverts might be visited on a rotating basis rather than every year.

Tier 2 statistical monitoring requires the use of probabilistic sampling to provide inductive inferences to larger areas or time periods. This is the type of monitoring that is required to evaluate the overall effectiveness of projects in a subbasin, province, and the Columbia Basin. For example, the Oregon Plan for Salmon and Watersheds Monitoring Program (Nicholas 1997a, 1997b, 1999) as implemented in the Oregon coastal coho streams and proposed in the Oregon section of the Columbia Plateau Province is a Tier 2 statistical monitoring program. The Oregon Plan, successfully implemented for estimation of coho distribution and abundance, applies a rigorous sampling design to answer key monitoring questions, provides integration of sampling efforts, and has greatly improved coordination among state, federal, and tribal governments, along with local watershed groups. This plan is a good model for Tier 2 statistical monitoring in subbasins and provinces of the entire Columbia Basin. The model can easily be modified for Tier 2 statistical monitoring of terrestrial projects. Individual proposals can support larger Tier 2 statistical monitoring projects such as the Oregon Plan by using the same field methods and selection of study sites that contribute information to Tier 2 statistical monitoring. Most larger projects should implement sampling designs that allow Tier 2 statistical monitoring or contribute data to statistical monitoring. Two projects for the Columbia Plateau Province, *Salmonid Population and Habitat Monitoring in the Oregon Portion of the Columbia Plateau (25088)* and *Regional Stream Conditions and Stressor Evaluation (25010)*, propose to implement a coordinated approach to fish population and habitat monitoring using the Oregon Plan for Salmon and Watersheds Monitoring Program. These two projects provide an example of coordinated Tier 2 statistical monitoring

The Council's Fish and Wildlife Program calls for monitoring and evaluation of biological and environmental conditions at the scale of provinces and subbasins. Tier 2 statistical monitoring will be required to provide inductive inferences to entire provinces, subbasins, and many watersheds, because it is impossible to survey every square foot of every stream bottom, riparian zone, and uplands area in these large regions every month of every year for decades. Many of the Columbia Basins' projects for "*monitoring*" fish and wildlife species (redds, spawners, juveniles, etc.) currently limit surveys to "*index sites*" selected by professional judgment in past years. The appropriate use of these index sites to draw broader conclusions at the province, subbasin and watershed scale should be conducted through Tier 2 statistical monitoring using probabilistic selection of survey sites. The proponents of such projects should plan their monitoring programs to allow for valid inductive inferences to the target areas. To maintain consistency, sites sampled and methods used in the past should overlap sites and methods for new Tier 2 statistical monitoring for a few years.

Tier 3 research monitoring for "establishment of mechanistic links" and "to detect changes caused by external influences" is usually conducted as part of an experimental program to rigorously determine the effects of management actions. Tier 3 research monitoring is not needed by many individual FWP projects, although experiments and

research monitoring can certainly be proposed and funded. However, project sponsors should include references to past or current research or Tier 3 monitoring that supports their projects. Extensive active management activities often need at least some Tier 3 monitoring. Examples of Tier 3 monitoring would include: 1) projects to evaluate the effects of different levels of fertilization on growth and survival of juvenile salmonids with streams selected randomly for reference and treatment; 2) projects to evaluate the survival rates of adult salmonids caught and released from tangle nets; 3) projects to evaluate the survival rates of juveniles migrating past a dam at different levels of spill and turbine passage; 4) projects to evaluate the swimming ability of lamprey during upstream migration; 5) projects to evaluate the effectiveness of various land restoration or management techniques, etc.

In addition to "implementation monitoring", proposals should (1) identify an appropriate level of monitoring: Tier 1 trend, Tier 2 statistical, or Tier 3 research monitoring, (2) describe the specific sampling design or designs (e.g., what is to be measured where and when), (3) justify the sample designs (i.e., explain why the particular things to be measured are good measures of project success or failure and why particular sample sites, sample locations, and sample numbers have been chosen), and (4) describe the protocols and the statistical methods that will be used to gather and to analyze their monitoring data (collected from the field and the lab, as needed, to interpret results).

Monitoring provides the information that will be used to evaluate the success or failure of a project to contribute to the ultimate goals of fish and wildlife recovery, preservation, or mitigation. Thus, each project should explicitly state its local, specific, and short-term goals as well as the ways in which these contribute to the larger longer-term goals of fish and wildlife remediation and mitigation. These goals should be cast in the form of measurable biological results and criteria for success, such as habitat parameters and fish and wildlife numbers or performance measures. This level of biological monitoring with direct ties to goals is required under the 1996 Amendment to the Power Act. Bisbal (2001) provides some useful guidelines for fish and wildlife evaluation plans, including choice of indicators to monitor, management needs, planning of the evaluation component, the importance of sampling design, consideration of the statistical analyses that are anticipated, and the value of pilot studies to test techniques and performance standards.

References.

Bisbal, G.A. 2001. Conceptual design of monitoring and evaluation plans for fish and wildlife in the Columbia River ecosystem. *Environmental Management* 28(4): 433-453.

Nicholas, J.W. (Principal Writer). 1997a. Monitoring Program, Chapter 16. The Oregon Plan: Oregon coastal salmon restoration initiative. State of Oregon, Salem, Oregon. (http://www.oregon-plan.org/)

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Preliminary Recommendation and Comments on Each Proposal

Multiple Province and Grouped Proposals

NORTHWEST HABITAT INSTITUTE MAPPING PROPOSALS

1. Project ID: 27003

Characterize and Assess Wildlife-Habitat Types and Structural Conditions for Subbasins within the Blue Mountain Province
Subbasin: Blue Mountain
Sponsor: Northwest Habitat Institute
Short Description: Fine-scale wildlife habitat assessment for the Blue Mountain Province will provide critical baseline data for planning and monitoring efforts that is consistent with the NWPPC 's Subbasin Planning process.
FY02 Request: $201,175
3 YR Estimate: $312,145

2. Project ID: 28003

Characterize and Assess Wildlife-Habitat Types and Structural Conditions for Subbasins within the Mountain Snake Province
Subbasin: Mountain Snake Province
Short Description: Fine-scale wildlife habitat assessment for the Mountain Snake Province will provide critical baseline data for planning and monitoring efforts that is called for in the 2 subbasin summaries and is consistent with the NWPPC 's Subbasin Planning process.
FY02 Request: $375,935
3 YR Estimate: $1,118,197
ISRP Preliminary Review Comments:
A response is not needed for these two proposals. Fundable in part. The ISRP has reviewed versions of these proposals in each province. The proposals argue for the utility of consistent wildlife maps produced at a finer level of resolution than currently available, but the benefits of this mapping should first be demonstrated in one subbasin or province before funding in multiple areas. The ISRP recommends that only Objective 1 of one proposal in one subbasin or province be funded as a test of the maps' utility.

The proposals make a convincing case for the value of presenting complex habitat information in map form. The proponents have previously demonstrated the ability to

produce high-quality maps at the Columbia Basin level. The proposed mapping would develop Landsat maps of wildlife-habitat types throughout the Columbia River Basin. If successful, these maps would represent a major step forward in the detail of information available to managers as baselines for ecological assessments. The improvement in mapping scale (down to 4 Hectare MMU from the Current 100 Hectare) would be particularly useful. However, the success of finer resolution maps would be determined by the availability of data at this scale. It is unlikely that regional data are of sufficient quality to support Objective 2.

Objective 2 should not be funded. The "wildlife and ecological evaluation" would be an assessment based only on habitat-type maps and on previous correlations of the habitat types shown in these maps with presence of species of wildlife. However, habitat maps contain errors and habitat types are necessarily arbitrary and cannot fully capture habitat for individual species. Thus, the evaluation adds no additional information to what is provided by the habitat maps, and it would undoubtedly be in error on many counts in predicting wildlife. It would not provide a very useful assessment of "wildlife species or habitats that are limiting" within a subbasin; in fact, it is not clear exactly what is meant by species or habitats being limiting. Objective 2 would have managers diagnose errors in the predictions that would be generated by the evaluation. Critiquing the predictions would be a useful exercise for the proponents but is not likely to be useful to the managers, who might be better informed by gathering primary information on species distributions and ecosystem function.

The maps would be made available in digital format to wildlife managers for the development of "coarse filter" conservation strategies. The utility of the maps to wildlife resource selection studies or as a layer in a GIS is unclear. For example, if the location (latitude-longitude) of a radio-tagged animal is provided, can the user easily build a table of associated habitat types based on the digital map?

Proposal 27003 falls below the quality of previous proposals. It is poorly written, combining poor grammar, spelling and punctuation with a confused structure and unexplained technical terms. Methods are presented in the background section. Objectives are different in sections 4 and 5. The "relations to other projects" section refers almost exclusively to other NHI mapping projects rather than establishing how the mapping would relate to and complement other projects. Also, absent from the proposals is a clarification of their relationship to work funded under the NWPPC's Ecosystem Diagnosis and Treatment project. The proponents have, however, adequately addressed the ISRP's previous comments on validation and field-testing from those reviews.

A key issue for these mapping proposals remains support from the managers, CBFWA, and the scientific community as a whole. Subbasin summaries indicate a need for mapping products and in particular, a need for mapping wildlife-habitats, but the summaries in themselves do not directly call for specific maps. The proposals did not contain letters of support from managers in the respective subbasins. Finally, publications describing the methodology for wildlife and ecological evaluation of the habitat maps

should be submitted to peer review in the wildlife scientific journals such as the *Journal of Wildlife Management.*

The ISRP suggests that validation and field-testing be made compatible with one of the national terrestrial survey efforts. Perhaps an intensification of the National Resources Inventory survey sites and data collection protocols would serve the region well. See the Proposals #200002300 and #200020116 and the ISRP reviews in the Columbia Plateau.

Project ID: 27006

Establishing Baseline Key Ecological Functions of Fish and Wildlife for Subbasin Planning
Sponsor: Northwest Habitat Institute in collaboration with the Washington Department of Fish and Wildlife
Subbasin: Blue Mountain Province - Systemwide
Short Description: This project will develop key ecological function information and species range maps for 133 resident fish and 474 wildlife species that occur within the Columbia River Basin.
FY02 Request: $153,500
3 YR Estimate: $303,000
ISRP Preliminary Review Comments:
Do not fund. A response is not warranted. This project proposes to evaluate key ecological functions of species and species assemblages in ecosystems and suggests that functional richness and functional redundancy can be assessed from the information base they have gathered or will compile. Knowledge of species functions in ecosystems and of redundancy versus uniqueness of species to ecosystem dynamics is important and has obvious implications for management. However, the current proposal is unlikely to provide information of a quality that could reasonably be used for management.

This proposal purports to establish key ecological functions for fish and wildlife to use as a baseline in subbasin planning. It proposes to expand the work on KEFs presented by the PI and another author in *Wildlife-Habitat Relationships in Oregon and Washington* and in the earlier stages of this project. It proposes to improve on GAP analysis by more consistent mapping. Good background is given on the development of KEFs and their application in the estimation of various functional patterns, but the proposal is vague about which ongoing work it would enhance. It cites the locations of information supporting the project but does not summarize that information. It does not specify relationship to projects other than to its predecessor BPA project; surely the project proponents could establish the utility of the KEF work they propose in terms of its usefulness to other researchers? The project history would be another place that the utility of results to managers and researchers could be demonstrated. The potential utility of the approach would be further strengthened if the proponents submitted the work for publication in the peer-reviewed literature. Objectives are well specified but it does not seem reasonable to infer ecological function that generalizes across different contexts on the basis of species lists.

The information to be used to assess ecological function is very general (e.g., an animal might be described as an herbivore that carries vertebrate diseases and that physically affects soil structure) and does not consider strength or even presence of a functional role for a species in a particular area. These "key ecological functions" might provide a useful thumbnail sketch of basic ecological traits of a species, but species effects in ecosystems have often been shown to be very context-specific. The project will not use or gather any primary data on ecological function. Given the many ecological studies that show different functional roles for the same species in different communities or under different environmental conditions, this approach seems inherently flawed. Further, the data (species distributions) needed for such a project are not available for many species in many areas. Both lack of data and poor data quality are likely to be major problems for early steps of the analysis. The alternate source of distributional information – projecting presence of animals from habitat data – introduces circularity into the process and must add significant error to the resulting distribution maps and species lists.

Bull Trout and Related Resident Fish Proposals

A collection of proposals was submitted for this review that address bull trout. Three clearly focus on general life-history studies in different parts of the basin. Two focus primarily on population dynamics of bull trout. One addresses brook trout control to help prevent them from interbreeding with bull trout. Another addresses development of a monitoring program for native species in the Salmon River basin, and one in the Salmon Basin proposes to model invasion by exotics.

The ISRP is recommending the two population dynamics proposals be combined to one and direct the focus to assessing potential for using mark-recapture methods (modified by Pradel) to assess bull trout population dynamics. These concepts may provide some relatively simple methods of assessment compared to those presently available.

One life-history proposal was rejected because it did not present a credible study design. Other life-history studies were asked to provide a response to ISRP comments and questions. There is a large amount of information regarding bull trout life history in the basin. Because it is not clear that significant benefit accrues to the species from more such studies, they should not be encouraged. Instead, potential project submitters should be encouraged to study existing data and observations as a basis for imaginative hypotheses and tests regarding factors controlling reproductive success of the species across its range.

Important questions must be addressed by sponsors of projects to model exotic invasions and to control their numbers by introducing other exotics before these projects can be assessed. The Idaho Department of Fish and Game proposal includes study of life history and other elements in its title, but later states its goal to be development of a monitoring program. The ISRP is asking for a response and further development of existing data to show the need they are describing.

Project ID: 199405402

Characterize the Migratory Patterns, Population Structure, Food Habits, and Abundance of Bull Trout from Subbasins in the Blue Mountain Province.
Sponsor: Oregon Department of Fish and Wildlife
Subbasin: Blue Mountain Province
Short Description: To aid in conservation efforts for bull trout, describe their piscivorous nature, assess their population and age structure, explore methods to monitor their abundance, describe their migratory patterns, and monitor the status of populations.
FY02 Request: $670,804
3 YR Estimate: $1,946,270
ISRP Preliminary Review Comments:
A response is required. This is a multi-faceted investigation on bull trout life history and population structure in the Grand Ronde subbasin. The proposal is well prepared with respect to background and research approach in most respects but has deficiencies regarding the budget, past results, and some methods. One of the objectives seems more appropriate for a separate project. It is of relatively large scale and expensive (about $2.5 million over 5 years). The proposal should be carefully reworked. The project has been funded for 7 years. The proposal refers to previous results but presents little about them. Some results were presented in the ISRP briefing.

The budget should be reduced and is in dire need of re-thinking and reorganization. It is excessive for what the investigators propose to accomplish. The outline of objectives and tasks in the budget seems to follow more than one organizational system, makes little sense, and does not always match with the proposal text. In section 5, for example, the numbering system repeats itself. And what are items one to four? Are these for other basins, and if so why are they in this proposal? Are they included in the budget total? Budget Task 1.4 refers to seven loci in analyses, but the methods refer to 10 loci. Publication/communication costs (over $95K, adding the amounts shown for this in several places) constitute over 1/3 of the budget and have not been justified. Section 8 refers to underwater video but this is not mentioned in the proposal. Section 8 includes $2,600 for phone service and utilities; should Indirect costs not cover this? Section 8 also duplicates the categories Personnel, Fringe, Supplies, Travel, and Indirect. Should this be? For the first fringe item, the amount ($119, 863) is 60% of the personnel line above it. Reviewers question whether that fringe benefits rate is justified. They further question whether even the 41.4% fringe benefits rate shown for the second personnel item is justified. Are these rates standard for ODFW? This does not appear to be the case in other proposals. There is a very significant increase in the budget; if this proposal is collating other activities, where were they funded before? Also needing justification is the budget component for work in the Deschutes basin (section 5, Objective 1; $60K?).

The project lacks a genuine habitat component, which is crucial for understanding bull trout abundance and distribution, and for restoration and monitoring. Objective 5 is worthwhile but does not directly relate to Objectives 1-4, does not include habitat or juvenile surveys, and is unclear about how the information will be used in a monitoring program. Objective 5 should be submitted as a new proposal with greater detail on how the surveys will be conducted, a component that includes habitat conditions and habitat

change, a juvenile component, and a clear plan for the use of the information in monitoring. A clearly defined monitoring plan for bull trout in the Blue Mountain Province is necessary to provide context and justification for the EMAP-based surveys. Objective 5 is especially tenuous given the problems associated with assessing bull trout abundance from redd counts.

It is not clear how the investigators will identify bull trout in the hand (or observed) as fluvial or resident.

If a component of projects 27017 and 28014 is implemented, this project should be coordinated with it.

Bull Trout Population Assessment and Life History Proposals from USGS

1. Project ID: 27017

Bull trout population assessment and life history characteristics in association with habitat quality and land use: template for recovery planning.
Sponsor: Utah Cooperative Fish and Wildlife Research Unit, USGS
Subbasin: Imnaha
FY02 Request: $469,792
3 YR Estimate: $1,009,568

and

2. Project ID: 28014

Bull trout population assessment and life history characteristics in association with habitat quality and land use: template for recovery planning.
Subbasin: Salmon
FY02 Request: $469,792
3 YR Estimate: $1,009,568
Short Description: Assess bull trout population density, abundance and life history characteristics for core areas of the Imnaha [and Salmon] Subbasins and evaluate relationships to habitat quality and land use based on field evaluations and mark/recapture techniques.
ISRP Preliminary Review Comments:
Response needed. Similar proposals were submitted by the sponsors for bull trout in Rapid River/Boulder Creek, Idaho, and in the Imnaha River, Oregon. One reason for the duplicate submission was to examine geographic differences. The ISRP concluded that these proposals would not provide a sound basis for understanding variability across the species' range. A suitable proposal for that part of the study should include a sample of populations that is representative of the species across its range. The ISRP also is concerned that a paired stream approach with limited replication has generally not been fruitful for populations of stream dwelling salmonids because of the abundance of confounding environmental factors. Reviewers felt the proposed study would provide some more basic bull trout data, but stops short of assessing critical limiting factors. Ten

years ago gathering of basic data on bull trout was appropriate, but now it is time to test some elegant hypotheses and begin implementing recovery.

The ISRP recommends that the study site be limited to either Rapid River/Boulder Creek, or the Imnaha River, and that a single proposal be developed as a pilot study to evaluate the proposed application of Pradel's ideas, and the PIT tag applications and detection methods to fluvial bull trout. The new proposal should include a discussion of why the effectiveness of a new PIT-tag system is necessary if it is already under evaluation elsewhere. The sponsors need to show full coordination of proposal development with research presently underway with fish habitat and bull trout at the site of choice.

Clearwater Subbasin

Project ID: 28022

Evaluate Bull Trout Life History in Dworshak Reservoir, N.F. Clearwater River Drainage, ID
Sponsor: Idaho Department of Fish and Game and Idaho Office of Species Conservation
Subbasin: Clearwater
Short Description: Evaluate distribution, habitat use, and movement patterns of bull trout (Salvelinus confluentus) in Dworshak Reservoir
FY02 Request: $208,850
3 YR Estimate: $516,850
ISRP Preliminary Review Comments:
Response needed. The objective of this project is to evaluate distribution, habitat use, feeding, and movement of bull trout (*Salvelinus confluentus*) in Dworshak Reservoir and tributary streams, as well as measure possible entrainment at Dworshak Dam. It would consolidate various bull trout activities and funding sources into a single project. The project is generally well planned and comprehensive. The data from it, with some additions, should provide a basis for managing the system to benefit bull trout. In addition to the tasks listed in the proposal, the project should sex the adult fish, estimate fecundity of adult females (literature values for number of eggs per female of given size applied to the sizes of females in the population or sub-populations), and estimate total egg deposition from fecundity data, size structure of the female population, and redd counts. Total mature female population and, based on sex ratio, total adult population might then be estimated. These additions could be fitted into Tasks 1.1 and 3.4 at little or no added cost, and, particularly if done for enough years, should yield helpful basic information. Importantly, an objective should be added to assess factors that limit the bull trout population; this would make it more likely that critically needed management could be undertaken soon.

The reviewers recommend that the proposal include greater consideration of recent bull trout studies done or underway elsewhere, in particular those at the U.S. Forest Service's Boise Research Station.

Project ID: 28023

Evaluate and Control Brook Trout Populations – Addressing Competition and Hybridization Threats in the Clearwater River Drainage, Idaho.
Sponsor: Idaho Department of Fish and Game and Idaho Office of Species Conservation
Subbasin: Clearwater
Short Description: Biological and physical methods will be utilized to suppress or eliminate brook trout populations in area where risk of competition and hybridization with bull trout is high.
FY02 Request: $183,800
3 YR Estimate: $547,600
ISRP Preliminary Review Comments:
Response needed. The idea behind this project seems a good one. The project appears reasonably well thought out and has an experimental / adaptive management element. However, the applicant should carry out objectives 2, 3, and 4 (analyzing the extent of the problem) *first*, i.e., in the first year or several years, and only then decide whether to undertake the presently stated objective 1 (the proposed remedy) in a future year. This would be the logical order in management. Not stated in the proposal is how long the tiger muskie populations are anticipated to remain in the lakes. Applicant should discuss this and two potential problems: (1) accidental establishment of permanent muskie populations in the lakes in the event that not all tiger muskies stocked are truly sterile (reference and discuss literature on amount of non-sterility); (2) the effects of tiger muskies on bull trout in the lakes and their outlets. The revised proposal should incorporate summer 2001 results from the larger lake mentioned in oral presentation.

Salmon River Subbasin

Project ID: 28002

Fluvial Bull Trout Migration and Life History Investigations in the upper Salmon River Subbasin
Sponsor: Shoshone-Bannock Tribes
Subbasin: Salmon
Short Description: Identify the distribution and status of fluvial bull trout populations. Identify seasonal habitat use and migration patterns of fluvial bull trout. Determine bull trout presence/absence, densities, population status, and spawning times.
FY02 Request: $163,440
3 YR Estimate: $451,440
ISRP Preliminary Review Comments:
Do not fund. A response is not needed because of significant deficiencies in the proposal. The proposal is to "fill all data gaps" concerning bull trout distribution, abundance, and migration patterns for fluvial bull trout in the upper Salmon River basin. It endeavors to justify this new effort based solely on a perceived lack of knowledge, a premise that was not convincing to reviewers who would have been more receptive to investigation of specific significant hypotheses. The work did not appear linked to the extensive work conducted by Thurow, Rieman and Dunham in the state. In addition to a radio-tracking component, the sponsor intends to describe distributions and abundances across the sub-basin. No argument in presented to justify what seems to be an

insufficient sample size for the objectives of the radio-telemetry tracking portion of the study. A systematic procedure was not presented for estimating abundance or distribution. It is known, as stated, that bull trout spawn from mid-August to mid-late September. The proposal includes action to further define spawning time, but no reason was provided for the need.

The literature on bull trout life history contains significant information on adult capture, radio tag mortalities, day vs. night snorkeling, and other study methodologies that could streamline, fine tune, and focus the proposed study. Lack of discussion and reference to this extensive literature and its implications was viewed as a serious deficit for this proposal.

Project ID: 28030

Salmon River Native Resident Fish Assessment
Sponsor: Idaho Department of Fish and Game and Idaho Office of Species Conservation
Subbasin: Salmon
Short Description: Investigate population status and trends, life histories, habitat needs, limiting factors, and threats to persistence of all resident native fishes in the Salmon River Subbasin. Emphasis of work will be on salmonid fishes.
FY02 Request: $250,000
3 YR Estimate: $650,000
ISRP Preliminary Review Comments:
A response is needed. This is a new proposal by the Idaho Department of Fish and Game to establish a position, develop a database structure, and conduct distribution and relative abundance estimates of bull trout, westslope cutthroat trout, redband trout, and non-game species in the Salmon River basin. The first objective is to review existing data to identify "data gaps." Subsequently, a detailed work plan would be developed to conduct surveys in FY02-FY06 to fill the data gaps. The long-term goal is to initiate a monitoring program to track the condition of these species.

Reviewers acknowledge that there is a clear and long-recognized need for basic population information on resident native salmonid species, including bull trout, westslope cutthroat trout, and redband trout, and any data gathering should include non-native salmonids in some fashion. However, the panel is equally aware that the proposal's justification ("little current information exists on native resident fishes") is not compatible with the subbasin summary's discussion of more than 100 assessments completed to date. It is clear that better, not simply more, data are needed.

Because the proposal does not present a work plan, it is difficult for reviewers to be supportive of the proposal at this time**.** Once the detailed work plan is developed, a proposal could be developed around it and submitted for review at a future date.

The ISRP recommends that the proponents of the project work with the Oregon, Washington, and Montana Provinces to develop monitoring and evaluation procedures with common field procedures and probabilistic site selection for the entire Columbia Basin. The Oregon Plan for Salmon and Watersheds Monitoring Program (Nicholas

1997a, 1997b, 1999) as implemented in the Oregon coastal coho streams and the Columbia Plateau Province is a Tier 2 level monitoring and evaluation program that can serve as a good model. Also, see the section on monitoring in the introduction to this report.

In particular, this proposal should show evidence of close cooperation with related proposals such as #28051 and #199107300 to ensure that plans for site selection and method for data collection are compatible. Data should be made available via STREAMNET.

Project ID: 28007

Causes and effects of nonnative trout invasions in the Salmon and Clearwater River subbasins
Sponsor: USDA Forest Service, Rocky Mountain Research Station
Subbasin: Salmon
Short Description: Provide a better understanding of nonnative trout invasions and their effects on native salmonids. Deliver models and information for evaluating management alternatives. RPA 152 will be most significantly enhanced by this work.
FY02 Request: $64,900
3 YR Estimate: $676,900
ISRP Preliminary Review Comments:
A response is needed. This is a proposal to develop a series of models to examine causes of non-native trout invasions in the Salmon and Clearwater subbasins and to look at genetic impacts (brook trout hybridization) and ecological impacts. It is a well-written proposal by highly qualified scientists that nicely characterizes the current situation regarding the issue of nonnative trout. Reviewers agree with proposal authors that the issue is important and urgent. However, neither the proposal nor the presentation convinced reviewers that at the end of the proposed project in 2006, fishery and land managers would be better able to make decisions regarding steps best taken to rectify the situation. To justify FWP funding the response should make stronger ties between possible results and management options. Work proposed as objective 1, to describe broad-scale patterns of native and nonnative salmonid status and distribution, would produce some "preliminary predictive models" but the proposal contained no further detail and did not put that effort in the context of currently available models. Please clarify.

Assessment of spring/summer chinook habitat in the Grande Ronde and Salmon subbasins

1. Project ID: 27007

Assessment of spring/summer chinook salmon habitat within the Grande Ronde Subbasin.
Sponsor: USDA Forest Service, USDI Bureau of Land Management, U.S. Geological Survey, Utah State University
FY02 Request: $205,000
3 YR Estimate: $235,000

and

2. Project ID: 28005

Assessment of spring/summer chinook salmon habitat within the Salmon River Subbasin.
FY02 Request: $395,000
3 YR Estimate: $440,000
Short Description: Evaluate and compare attributes of streams utilized and not utilized by chinook salmon within the subbasin. Evaluated habitat characteristics would describe low gradient stream segments, which foster chinook salmon production.

ISRP Preliminary Review Comments:
A response is needed. The main project goal would be to link an extensive habitat database to present population status information for chinook populations. These two companion project proposals are ambitious and attempt to look at habitat attributes and salmonid distributions at finer scales than are typically investigated. This will be a very intensive examination of potentially important habitat elements; all presently known stream-salmonid habitat variables (and some other variables, such as macroinvertebrates and periphyton) seem to be included in the study. Measurements will extend back into the riparian zone.

As these two proposals are extremely similar, sharing staff, methods, and so on, we recommend that the study site be limited to either the Grande Ronde, or the Salmon River subbasin, and that a single proposal be developed as a pilot study to evaluate existing data, data collection methods, and the proposed habitat model. The sponsors need to show full coordination of proposal development with research presently underway with fish habitat and spring/summer chinook salmon at the study site of choice.

Although the proposals are clearly written and their authors are recognized leaders in habitat research, reviewers felt that a large volume of data, similar to what is sought here, presently exists in agency and researcher files. The subbasin summaries note numerous aquatic assessments already completed. If the proposal described how it would fill a significant void left by previous assessments, it would be more compelling. Additionally, reviewers believe the reasons for differences in chinook smolt production

among subwatersheds are currently more clearly understood than the proposal would suggest.

The proposals are heavy on habitat sampling methodology but provide insufficient explanation of what biological data for salmonids will be obtained (is the data even available for Task A?) and how relationships between the biological data and habitat variables will be analyzed. Out-of basin factors could have a significant influence on salmon presence and abundance, yet these are not accounted for. Tasks A and B are unclear and require much further elaboration.

Stream temperature is listed in Table 1 as a variable to be measured in the field, but the methods are not shown. The temperature regime will have to be analyzed for each site, and the methods for measurement and analysis should be explained. Except for the latter shortcoming, the project is exemplary, and much information of kinds sorely needed in chinook habitat management should result.

ISRP Comments on the Four-Step Safety-Net Process and Associated Proposals (projects 28012, 28015, 28055, 28056, and 28057).

Do not fund projects 28012, 28015, 28055, 28056, and 28057; an integrated response is needed from the various proposers with participation by NMFS that addresses the ISRP concerns and demonstrates that the Four-Step Safety-Net Process is well coordinated, scientifically sound, and consistent across the basin.

Data available for extinction risk assessments are going to provide no more than crude estimates of risk. Caution is needed with statements and models that include carrying capacity, since it is itself a dynamic value. Confidence in risk estimates will be very low and a source of disagreement. The process must be developed via methods that will ensure buy-in by all agencies. There must be agreement as to what confidence levels are acceptable before an action is taken. Standards need to be defined for the type and quality of data minimally required for such assessments, including population and sub-population structure. Proposing to obtain only review and comment by the associated agencies cannot be expected to produce support for the process.

The process is meant for critically depressed populations. Some populations seem to have been identified for consideration before any process was specified to identify "critically depressed stocks." The process, if initiated, should be designed to include a systematic process for identifying these stocks across the basin.

The process assumes that artificial propagation can provide a safety net for critically depressed stocks when identified. What database is available from the Snake River to provide that confidence? Recent reports including project 199102800 in the Mountain Snake Province, conclude that survival of migrants to Lower Granite Dam declines with increasing abundance. These results may implicate artificially high densities caused by release of hatchery fish as an additional cause for decline of wild fish.

There seems to be misunderstanding of the intent of the process. Use of donor stocks was identified in one proposal as a possible need. How can a donor stock be considered for use under a program designed to preclude extinction of a local population? Another proposal indicated that the process was going to help increase abundance in the target population, and it was described as any other project trying to cause increase in population size with hatchery fish.

Fish populations in the Middle Fork Salmon River have declined as a result of problems in the migration route or ocean. These problems should be solved rather than acting (use of hatchery fish) to further jeopardize fish populations in the Middle Fork. If, at some time in the future it can be demonstrated that these populations are in imminent danger of extinction, and at the same time it can be shown there will be immediate action to fix conditions in the migration route or ocean, it may make some sense to cryopreserve gametes or use short-term propagation as "last ditch" efforts to save some of the genetic material, but a sound technical basis for the required assessment does not exist.

The last step in the process is development of a HGMP for each propagation program. The ISRP's opinion is that the template for preparation of these documents provides little confidence that the strict requirements needed for artificial propagation of endangered species will result. The template calls for detailed information concerning how a hatchery presently operates and some inquiries as to how the potential impact of the program will be reduced. If the 4-step process is to proceed, detailed guidelines for operation of these facilities must be developed.

In summary, the ISRP concludes that the 4-step process is not ready to go forward, and may even be a flawed strategy. Its technical credibility depends on objective selection of populations for safety net consideration, on the availability of information to permit development of strategies that will do more good than harm, and on standards for management of artificial production. In addition, the process does not seem to be coordinated with the subbasin planning effort. None of these elements are in place.

SALMON SUBBASIN

1. Project ID: 28057

Four-Step Safety-Net Plan for Lower Salmon River A-Run Steelhead
Sponsor: Columbia River Inter-Tribal Fish Commission
Subbasin: Salmon
Short Description: This project is identified under hatchery RPA 175. The goal of this project is to determine whether intervention is necessary to prevent the decline or immediate extirpation of Lower Salmon River A-run steelhead, and to identify management alternatives.
FY02 Request: $73,422
3 YR Estimate: $89,220
ISRP Preliminary Review Comments:
See general comment on Four-Step Safety-Net Plan proposals.

2. Project ID: 28056

Four-Step Safety-Net Plan for South Fork Salmon River B-Run Steelhead
Sponsor: Columbia River Inter-Tribal Fish Commission
Subbasin: Salmon
Short Description: This project is identified under hatchery RPA 175. The project goal is to determine whether intervention is necessary to prevent the decline or immediate extirpation of South Fork Salmon River B-run steelhead, and to identify management alternatives.
FY02 Request: $73,422
3 YR Estimate: $89,220
ISRP Preliminary Review Comments:
See general comment on Four-Step Safety-Net Plan proposals.

3. Project ID: 28012

Four-Step Planning to Identify Safety-Net Projects for Idaho Steelhead
Sponsor: Idaho Department of Fish and Game and Idaho Office of Species Conservation
Subbasin: Salmon
Short Description: This proposal addresses RPA 175. Planning process identified by NMFS to prioritize populations and determine strategies to alleviate near-term extinction risk.
FY02 Request: $206,200
3 YR Estimate: $656,200
ISRP Preliminary Review Comments:
See general comment on Four-Step Safety-Net Plan proposals.

4. Project ID: 28015

Benefit/Risk Analysis to Promote Long-Term Persistence of Chinook Salmon in the Middle Fork Salmon River
Sponsor: Nez Perce Tribe
Subbasin: Salmon
Short Description: Assess relative benefits and risks associated with current population status, genetics and potential for management actions
and implement appropriate action to ensure long-term persistence of chinook salmon in the Middle Fork Salmon River subbasin.
FY02 Request: $156,726
3 YR Estimate: $181,726
ISRP Preliminary Review Comments:
See general comment on Four-Step Safety-Net Plan proposals.

CLEARWATER SUBBASIN

5. Project ID: 28055

Four-Step Safety-Net Plan for Upper Lochsa River B-Run Steelhead
Sponsor: Columbia River Inter-Tribal Fish Commission
Subbasin: Clearwater
Short Description: This project is identified under hatchery RPA 175. The goal of this project is to determine whether intervention is necessary to prevent the decline or immediate extirpation of upper Lochsa River B-run steelhead, and to identify management alternatives.
FY02 Request: $73,422
3 YR Estimate: $89,220
ISRP Preliminary Review Comments:
See general comment on Four-Step Safety-Net Plan proposals.

Project ID: 28026

Develop HGMP's for LSRCP Programs to address artificial production reforms identified in the FCRPS Biological Opinion and other regional processes.
Sponsor: US Fish and Wildlife Service, Lower Snake River Compensation Plan
Subbasin: Blue Mountain and Mountain Snake Provinces
Short Description: Assess LSRCP Programs to identify needed artificial production reform measures, coordinate proposed reforms among co-managers, select and define potential reforms, and develop funding implementation.
FY02 Request: $856,292
3 YR Estimate: $1,755,399
ISRP Preliminary Review Comments:
No response needed. A scientific review is not applicable. This does not lend itself to technical review, but from a scientific point of view the ISRP is not convinced that HGMP's will actually provide guidance on protecting ESA listed stocks. See general comments on 4-step process.

Project ID: 199703800

Preserve Salmonid Gametes and Establish a Regional Salmonid Germplasm Repository
Sponsor: Nez Perce Tribe Department of Fisheries Resources Management
Subbasin: Blue Mountain and Mountain Snake Provinces
Short Description: Preserve Salmonid Gametes through cryogenic techniques to maintain genetic diversity in populations with low levels of abundance and at high risk of extirpation. Establish a Regional Salmonid Germplasm Repository for populations listed under the ESA.
FY02 Request: $1,279,000
3 YR Estimate: $4,383,000
ISRP Preliminary Review Comments:
Response is needed. To date, the project has cryopreserved male gametes from over 2,700 chinook salmon and steelhead. The proposal would continue and expand that program roughly four-fold after construction of a new building, evaluating additional

basins for gamete collections from salmonids (resident and anadromous), other fishes such as lamprey and burbot, and amphibians.

Sponsors need to provide a convincing argument that use of cryopreservation as a tool of conservation for Columbia River salmonids continues to be logical, in part, by responding to the following statements.

Generally, measures such as cryopreservation are taken in an attempt to protect a species for a very short time while emergency actions are taken to restore lost habitat. A concern is that the gametes retained do not represent the population, and their contribution to a breeding program may not be random. Sampling from the population is only from males. The population is already in a potential genetic bottleneck before the original samples are taken and repeated sampling only exacerbates that problem. Because trials generally show relatively low viability of cryopreserved sperm, is a random sample of the genetic material passed to subsequent generations?

The ISRP also had specific questions concerning the following:

Why do the sponsors feel that it is "… logical that BPA fund this proposal because of its past investment in the ongoing Snake River Salmonid Gamete Preservation Project"? Shouldn't a Regional Center be a collaborative effort? Why is a new (vs renovated) building needed? Why build on the opposite side of Moscow (the Alturas location) from the university? Why isn't it better to place this in very close proximity to either UI or WSU to maximize interaction and (presumably) minimize cost?

Reviewers questioned why gametes would be collected from cutthroat trout for the repository when their population status has been judged healthy enough to preclude ESA listing.

Please clarify the relationship of the proposed regional repository in this proposal and that proposed for Hagerman.

Idaho Supplementation Studies

A response is needed for the set of Idaho Supplementation Study Projects.

Background

Supplementation of natural stocks is not a mandated mitigation objective, but has become an important part of the hatchery programs. Idaho has outplanted (i.e. off-site releases) over 5.5 million chinook fry, approximately 8 million smolts, and 8,000 adults into the Salmon River drainage since 1977 (IDFG et. al. 1990). During the same period, over 17 million fry, 3 million smolts, and 2,000 adults were outplanted into the Clearwater River drainage (Nez Perce Tribe et. al. 1990). In spite of widespread outplanting activities there has been little scientific evaluation of supplementation on rebuilding or influencing natural salmon populations both in Idaho and basin wide. Furthermore, despite these hatchery mitigation efforts, anadromous fish stocks in Idaho continued to decline.

The Idaho Department of Fish and Game (IDFG) spearheaded development of the Idaho Supplementation Studies (ISS) to address questions identified in the Supplementation Technical Work Group (STWG) Five Year Workplan (STWG 1988), as well as help define the potential role of supplementation in managing Idaho's anadromous fisheries and as a recovery tool for the basin. The goal of the Idaho Supplementation Studies is to evaluate various supplementation strategies for maintaining and rebuilding spring/summer chinook salmon populations in Idaho and to develop recommendations for using supplementation to rebuild naturally spawning populations.

Projects directly involved in the ISS are:

1. Project ID: 198909800. Idaho Supplementation Studies. **Sponsor:** Idaho Department of Fish and Game and Idaho Office of Species Conservation. **Subbasin**: Salmon.

2. Project ID: 198909801. Evaluate Supplementation Studies in Idaho Rivers (ISS). **Sponsor:** U.S. Fish and Wildlife Service - Idaho Fishery Resource Office. **Subbasin:** Clearwater.

3. Project ID: 198909802. Evaluate Salmon Supplementation Studies in Idaho Rivers- Nez Perce Tribe. **Sponsor:** Nez Perce Tribe. **Subbasin**: Salmon.

4. Project ID: 198909803. Salmon Supplementation Studies in Idaho- Shoshone-Bannock Tribes. **Sponsor:** Shoshone-Bannock Tribes. **Subbasin**: Salmon

5. Project ID: 199005500. Steelhead Supplementation Studies in Idaho Rivers. **Sponsor:** Idaho Department of Fish and Game and Idaho Office of Species Conservation. **Subbasin:** Clearwater

6. Project ID: 199604300. Johnson Creek Artificial Propagation Enhancement Project. **Sponsor:** Nez Perce Tribe. **Subbasin**: Salmon.

ISS also coordinates field activities and data collection efforts with the Idaho Habitat/ Natural Production Monitoring project (199107300). ISS also coordinates with and transfers data to projects in the Salmon River subbasin including the Monitoring Smolt Migration of Wild Snake River Spring/Summer Chinook Salmon (199102800), Salmon River Habitat Enhancement (9405000), and Salmon River Production Program (199705700). ISS also works closely with the Lower Snake River Compensation Plan (LSRCP) to coordinate on hatchery supplementation treatments and evaluations.

Presently, there are eleven state and federal anadromous hatcheries operating in Idaho: Clearwater, Oxbow, Rapid River, McCall, Sawtooth, Pahsimeroi, Dworshak, Kooskia, Hagerman National, Niagara Springs, and Magic Valley. There are also three satellite rearing ponds: Powell, Red River, and Crooked River operated in conjunction with the

Clearwater Hatchery. These hatcheries have the combined capacity to produce 8.5 million spring chinook smolts, 2 million summer chinook smolts, 6.7 million A-run steelhead *O. mykiss* smolts, and 4 million B-run steelhead smolts annually.

ISS Study Design

The ISS study design called for a minimum of 15 years (three generations) of research (Bowles and Leitzinger 1991). Sampling was initiated in 1991, and implementation began in 1992. Supplementation effects are monitored and evaluated by comparing juvenile production and survival, fecundity, age structure, and genetic structure and variability in treatment and control streams of similar ecological parameters.

Due to the large geographic scope of this study, study streams were partitioned among four resource management entities for implementation. These include Idaho Department of Fish and Game, Nez Perce Tribe, Shoshone-Bannock Tribe, and the U.S. Fish and Wildlife Service-Idaho Fishery Resource Office. Allocations were based on interest, integration with ongoing programs, cost efficiency, logistics and, to a lesser extent, relative equity. Approximately one-half of the study will be implemented by Idaho Department of Fish and Game through the ISS contract with BPA. The Nez Perce Tribe and Shoshone-Bannock Tribe have similar commitments to ISS, each comprising approximately 20% of the study. Both of these components rely heavily on integration of existing or proposed tribal programs. The U.S. Fish and Wildlife Service-Idaho Fishery Resource Office implements about ten percent of the project. The Idaho Department of Fish and Game is the lead agency regarding project development, coordination, and implementation.

The ISS Experimental Design was completed and published in 1991. Baseline data collection and development of supplementation brood stocks (**Phase I**) began in 1991. Over a period of about five years, supplementation brood stocks were developed for seven hatchery trap/release locations as identified in the experimental design:

Artificial Production Facilities

1. Sawtooth Fish Hatchery – Upper Salmon River
2. Pahsimeroi Fish Hatchery – Pahsimeroi River
3. McCall Fish Hatchery – South Fork Salmon River

Clearwater Fish Hatchery Satellites

4. Crooked River
5. Red River
6. Powell (Colt-killed Creek)
7. Clear Creek – Kooskia National Fish Hatchery

As adult fish began to return from the **Phase I** supplementation brood stock juvenile releases, the project progressed into **Phase II**. **Phase II** utilizes the returning adults to supplement natural origin recruits in treatment streams and maintains supplementation brood stocks for juvenile production and release. Juvenile fish releases through brood

year 1996 include 1,281,755 fish in the Clearwater River basin and 1,954,048 fish in the Salmon River basin.

This project is now transitioning from **Phase II** to **Phase III**, monitoring the effects of supplementation. In **Phase III** juvenile releases from supplementation brood stocks are eventually terminated, returning adults from prior juvenile releases are released to supplement spawning of natural origin recruits, and monitoring of production and productivity response variables in control and treatment streams continues. In 2000, juvenile releases were maintained at levels similar to releases in 1999.

Treatment (e.g. supplementation in general, supplementation with a particular life stage, supplementation with a particular brood source) effects will be tested directly by hypotheses. In general, treatments will be applied for one to two generations (5-10 years) following approximately one generation of pretreatment data. Population responses to supplementation will be monitored a minimum of one generation (5 years) following supplementation. **It is important that the original study design be maintained.** Reducing sample size (number of treatment streams) can potentially impair the sensitivity of the design. Reducing to five treatment streams provides only a 60% chance of detecting a 25% change in production, whereas we would still have over 95% chance of detecting a 50% change.

Related projects

Several additional projects are related to the ISS. The monitoring and evaluation portion of the Johnson Creek Artificial Propagation Enhancement project (199604300) conducts the juvenile emigration and survival, adult escapement (weir and spawning ground surveys), and genetic monitoring associated with the ISS project in Johnson Creek. The Nez Perce Tribal Hatchery Monitoring and Evaluation project (198335003) collects the data associated with the ISS project in Lolo Creek, Eldorado Creek, and Newsome Creeks in the Clearwater River subbasin. The Nez Perce Tribe Monitoring of Listed Stock Chinook Salmon Escapement project (BPA Number 199703000) operates a video camera and weir to passively monitor and enumerate adults returning to Lake Creek and upper Secesh River. This project collects data on adult abundance and migration timing of chinook salmon.

ISRP Preliminary Recommendations:

As initially planned, the Idaho Supplementation Study (ISS) was probably the best supplementation study among the Provinces. It should be continued, but the ISRP has a number of concerns that should be addressed while there is still time. This study addresses the critical issue of the efficacy of supplementation to restore populations and many resources have been committed to it. With the experimental design of the Yakima Hatchery in question (no wild/wild and no hatchery/hatchery controls), retaining the integrity of this experiment is crucial. It is important that the Idaho Supplementation Studies be completed following the original approved experimental design.

The most critical ISRP concerns are:

1) the effect of the loss of Johnson Creek (previously a control stream) from the experimental design, and
2) the effect of straying of hatchery fish into Lake Creek, the Secesh River, and other designated "controls".

As currently planned in project #199604300 "Johnson Creek Artificial Propagation Enhancement Project", Johnson Creek is neither a treatment nor a control stream in the ISS because the criteria for stopping supplementation has been changed and does not appear to match the timetable in the ISS. Supplementation activities in Johnson Creek should cease immediately for the duration of the ISS study design, allowing Johnson Creek to continue to be used as a 'control' stream, even given the recent limited supplementation of it. (Note: a portion of the 2001 returning jacks are the first returning fish from the limited Johnson Creek supplementation effort.)

To do minimal damage to the ISS study design, the ISRP recommends that Johnson Creek now be considered a control stream (at least by year class!) and that supplementation be stopped in Johnson Creek in accordance with the original timetable in the ISS. The number of wild returning adults we observed earlier this month spawning in Johnson Creek, and the number we are likely to observe next year, argue that supplementation of Johnson Creek is not needed as an emergency action for a declining stock at least through the duration of the ISS experiment.

As we understand the situation, the decision to remove Johnson Creek from the study was beyond the control of some proponents of the ISS project. Nevertheless, we find it unacceptable that the experimental design for study of such a critical issue as supplementation would be compromised by a decision to remove a control stream from the study. The only conclusion we can come to is that the proponents of the decision to remove Johnson Creek from the supplementation study believe that they already know the result, i.e., they believe supplementation works. A broad base of the scientific community is in extreme disagreement with this conclusion, and it is unacceptable that the best-designed study of supplementation would be compromised.

Other ISRP concerns: The proponents should list the initial control and treatment streams and the current treatments and controls. How has the overall design changed? What is the current timetable to stop supplementation in the treatment streams and to evaluate the effect on natural production? In the control streams, what effect do the straying rates have on the analysis? What would be the effect of changing Johnson Creek from a "control" to a "treatment" stream on the statistical power of the study?

The results of this project should help determine whether supplementation is a viable restoration strategy and as such should inform the RPA four-step safety net process.

There may be a need for ongoing input from an over-site committee with members outside those participating in the study to monitor the progress. Has this been planned for or considered?

Salmon River Subbasin

1. Project ID: 198909800

Idaho Supplementation Studies
Sponsor: Idaho Department of Fish and Game and Idaho Office of Species Conservation
Subbasin: Salmon
Short Description: Evaluate various supplementation strategies for maintaining and rebuilding spring/summer chinook salmon populations in Idaho. Develop recommendations for using supplementation to rebuild naturally spawning populations.
FY02 Request: $996,726
3 YR Estimate: $2,971,726
ISRP Preliminary Review Comments:
See ISRP comment on the set of Idaho Supplementation Studies above.

2. Project ID: 198909801

Evaluate Supplementation Studies in Idaho Rivers (ISS)
Sponsor: U.S. Fish and Wildlife Service - Idaho Fishery Resource Office
Subbasin: Clearwater
Short Description: Evaluate various supplementation strategies for maintaining and rebuilding spring/summer chinook salmon populations in Idaho. Develop recommendations for the use of supplementation to rebuild naturally spawning populations.
FY02 Request: $126,320
3 YR Estimate: $406,320
ISRP Preliminary Review Comments:
See ISRP comments on the set of Idaho Supplementation Studies above.

3. Project ID: 198909802

Evaluate Salmon Supplementation Studies in Idaho Rivers- Nez Perce Tribe
Sponsor: Nez Perce Tribe
Subbasin: Salmon
Short Description: Evaluates hatchery supplementation as a recovery - restoration tool for spring and summer chinook salmon. Quantifies key population status and performance variables, including early-life history and smolt- to adult survival rates.
FY02 Request: $676,476
3 YR Estimate: $1,998,214
ISRP Preliminary Review Comments:
See ISRP comment on the set of Idaho Supplementation Studies above.

4. Project ID: 198909803

Salmon Supplementation Studies in Idaho- Shoshone-Bannock Tribes
Sponsor: Shoshone-Bannock Tribes
Subbasin: Salmon
Short Description: Evaluate various supplementation strategies for maintaining and rebuilding spring/summer chinook populations in Idaho. Develop recommendations for the use of supplementation to rebuild naturally spawning populations.
FY02 Request: $213,569
3 YR Estimate: $683,658
ISRP Preliminary Review Comments:
See ISRP comment on the set of Idaho Supplementation Studies above.

5. Project ID: 199005500

Steelhead Supplementation Studies in Idaho Rivers
Sponsor: Idaho Department of Fish and Game and Idaho Office of Species Conservation
Subbasin: Clearwater
Subbasin: Salmon
Short Description: Evaluate the feasibility of using artificial production to increase natural steelhead populations and to collect life history, genetic, and abundance data from wild steelhead populations in Idaho.
FY02 Request: $686,307
3 YR Estimate: $2,009,759
ISRP Preliminary Review Comments:
See ISRP comment on the set of Idaho Supplementation Studies above. Excellent proposal. Presentation, which was articulate and clear, could have been superb through the use of better presentation materials and graphics.

Other questions: How does the proposed addition of a screwtrap and weir in East Fork Potlatch River relate to the A-Run and coho proposals by the NPT? This has broad application across the basin and should be coordinated with other basin projects. The sponsors focus on wild B steelhead on Fish Creek (best case scenario) to gather background information on abundance and growth rates, parr age structure, migration info, etc. This info is closely linked to NMFS BiOp. Reviewers expressed concern about non-marked hatchery fish confounding monitoring and experiments.

Salmon River Subbasin Proposals

6. Project ID: 199604300

Johnson Creek Artificial Propagation Enhancement Project
Sponsor: Nez Perce Tribe
Subbasin: Salmon
Short Description: Enhance and monitor a weak but recoverable stock of native summer chinook salmon in Johnson Creek. Construct facilities for adult collection and holding, juvenile rearing and smolt acclimation.
FY02 Request: $4,410,100
3 YR Estimate: $6,740,688
ISRP Preliminary Review Comments:
A response is needed. Do not fund, except for M & E portion needed to tie in with ISS. M&E should be funded at an appropriate level so that the Johnson Creek 'control' stream data continue to be integrated into the ISS experimental design. This may require a joint response from the NPT and IDFG (which is the lead agency for the ISS) that describes how the Johnson Creek population will be re-integrated into the ISS study. See ISRP comments on the set of Idaho Supplementation Studies above.

As initially planned, the Idaho Supplementation Study (ISS) was probably the best supplementation study among the Provinces. It should be continued, but the ISRP has a number of concerns that should be addressed while there is still time. This study addresses the critical issue of the efficacy of supplementation to restore populations and many resources have been committed to it. With the experimental design of the Yakima Hatchery in question (not wild/wild and no hatchery/hatchery controls), retaining the integrity of this experiment is crucial. It is important that the Idaho Supplementation Studies be completed following the original approved experimental design.

The most critical ISRP concerns are:
1. the effect of the loss of Johnson Creek (previously a control stream) from the experimental design, and
2. the effect of straying of hatchery fish into Lake Creek, the Secesh River, and other designated “controls”.

As currently planned in project #199604300 “Johnson Creek Artificial Propagation Enhancement Project”, Johnson Creek is neither a treatment nor a control stream in the ISS because the criteria for stopping supplementation has been changed and does not appear to match the timetable in the ISS. Supplementation activities in Johnson Creek should cease immediately for the duration of the ISS study design, allowing Johnson Creek to continue to be use as a ‘control’ stream, even given the recent limited supplementation of it. (Note: a portion of the 2001 returning jacks are the first returning fish from the limited Johnson Creek supplementation effort.)

To do minimal damage to the ISS study design, the ISRP recommends that Johnson Creek now be considered a control stream (at least by year class!) and that

supplementation be stopped in Johnson Creek in accordance with the original timetable in the ISS. The number of wild returning adults we observed earlier this month spawning in Johnson Creek, and the number we are likely to observe next year, argue that supplementation of Johnson Creek is not needed as an emergency action for a declining stock at least through the duration of the ISS experiment.

As we understand the situation, the decision to remove Johnson Creek from the study was beyond the control of some proponents of the ISS project. Nevertheless, we find it unacceptable that the experimental design for study of such a critical issue as supplementation would be compromised by a decision to remove a control stream from the study. The only conclusion we can come to is that the proponents of the decision to remove Johnson Creek from the supplementation study believe that they already know the result, i.e., they believe supplementation works! A broad base of the scientific community is in extreme disagreement with this conclusion, and it is unacceptable that the best-designed study of supplementation would be compromised.

Project ID: 199107300

Idaho Natural Production Monitoring and Evaluation
Sponsor: Idaho Department of Fish and Game and Idaho Office of Species Conservation
Subbasin: Salmon
Short Description: Identifies limiting factors and recommends methods to improve adult-to-smolt and smolt-to-adult survival of chinook salmon and steelhead. Provides long-term monitoring data to determine the effectiveness of recovery actions and population status.
FY02 Request: $831,000
3 YR Estimate: $2,526,000
ISRP Preliminary Review Comments:
A response is needed. The proponents should address the need for development of a long term Columbia River Basin (including the Salmon subbasin) probabilistic sampling plan(s) for monitoring anadromous fishes, resident fishes, water quality, and other habitat quality parameters. The proponents also need to provide documentation that common monitoring methods are being used in the Salmon subbasin (e.g., project #199405000) and that data and metadata are being provided to Streamnet (or other database if Streamnet is not appropriate).

This is a good monitoring and evaluation program based on monitoring subjectively selected streams and representative sites within strata on those streams. However, experience based on the use of similar surveys of index sites in the coastal coho streams of Oregon lead the ISRP to strongly recommend that the Idaho Provinces reassess the current monitoring design and site selections in development of a more comprehensive long-term monitoring program for all life history stages and species including resident fish. The ISRP continues to believe that the project needs to undergo a programmatic review, perhaps in conjunction with review of similar projects in Oregon, Washington, and Montana.

Monitoring and evaluation needs may be satisfied by the current survey sites and monitoring program during a period of low seeding levels, but the ISRP doubts that the project will meet the expectations and needs of the Province in the long term if anadromous fish abundance increases. It would be foolish to abandon the current design in the short term, but likewise foolish to not start integrating components of a design that allows statistical inferences to be made to the entire Snake Subbasin, other Idaho Subbasins, and individual important watersheds.

The ISRP recommends that the proponents of monitoring projects in the Idaho Provinces work with the Oregon, Washington, and Montana Provinces to develop monitoring and evaluation procedures with common field procedures and probabilistic site selection for the entire Columbia Basin. The Oregon Plan for Salmon and Watersheds Monitoring Program (Nicholas 1997a, 1997b, 1999) as implemented in the Oregon coastal coho streams and the southern Columbia Plateau Province (John Day, Deschutes, Walla Walla (in Oregon) and Umatilla) is a Tier 2 level monitoring and evaluation program that may serve as a good model. Also, see the section on monitoring in the introduction to this report.

The proponents of this project should work closely with the proponents of Proposal #28051, "Assess and Monitor Steelhead in the Middle Fork Salmon River Subbasin", to ensure that the probabilistic sampling plan envisioned in #28051 is compatible with long range plans of the Idaho Department of Fish and Game.

All data should be made available via STREAMNET or other suitable electronic database, as soon as possible.

Minor comments and suggestions:
The proponents indicate that they "Use the PTAGIS database and a program developed by the ISS project to determine the disposition of detected PIT-tagged smolts." Also, they "Use those data and the model previously developed by INPMEP (Kiefer et al. 2001b) to estimate the number of PIT-tagged wild/natural smolts that migrated uncollected past the four main collector dams." The ISRP recommends that the proponents corroborate with NMFS statisticians in Seattle to compare methods and estimates for these important parameters.

The proponents should ensure the ISRP of cooperation with project #199102800, "Monitoring smolt migrations of wild Snake River sp/sum chinook salmon" for lack of overlap in application of PIT-TAGs to wild anadromous fish and sharing of information on downstream detections and adult returns.

Project ID: 199102800

Monitoring smolt migrations of wild Snake River sp/sum chinook salmon
Sponsor: National Marine Fisheries Service
Subbasin: Salmon
Short Description: Collect time series information to examine migrational characteristics of wild ESA-listed Snake River spring/summer chinook salmon stocks. PIT tag wild chinook salmon parr annually; and subsequently monitor as parr/smolts at stream traps and river dams.
FY02 Request: $350,000
3 YR Estimate: $1,050,000
ISRP Preliminary Review Comments:
A response is needed. The proponents should ensure the ISRP of cooperation with project 199107300 "Idaho Natural Production Monitoring and Evaluation" for lack of overlap in application of PIT-TAGs to wild anadromous fish and sharing of information on downstream detections and adult returns.

This is a good proposal to continue a smolt monitoring project that provides invaluable data basic to making management decisions affecting the stocks involved. The study provides valuable basic data for making management decisions affecting the stocks involved. There appears to be good cooperation between this project and other projects in the Snake Basin for use of the monitoring data collected. The ISRP appreciates the response to suggestions made in the FY00 review and the publication of project results.

The presenter indicated that the project recorded two to three times higher parr-to-smolt survivals when parr densities in the streams were lower. This finding, if replicated in time and space, has major implications for management of hatchery supplementation outplanting and monitoring of adult escapement. This component of the project should be given high priority.

Project ID: 199703000

Chinook Salmon Adult Abundance Monitoring
Sponsor: Nez Perce Tribe/Pacific Northwest National Laboratory
Subbasin: Salmon
Short Description: Implement state-of-the-art technologies to accurately quantify chinook salmon spawner abundance in the Secesh River, Lake and Marsh creeks. Adult abundance data would allow a measure of recovery threshold abundance of a listed species (NMFS 2000).
FY02 Request: $1,033,000
3 YR Estimate: $2,719,000
ISRP Preliminary Review Comments:
A response is needed. This is a long and rambling proposal that is hard to review, with a rather large budget. Some reviewers have misgivings about the proposed technologies and whether they will work. Some new documentation and justification for methods were presented orally. These should be included in the proposal and the proposal should

be rewritten to better present the critical points, objectives, methods, and anticipated results.

Development of a technique that gets a better count of salmon adults than from intensive and repeated redd counts may be desirable but getting counts is not the only purpose of redd surveys, which will probably have to continue anyway for various other purposes. The proponents should provide evidence that the "high tech" approach is more economical than "labor intensive on the ground surveys" using techniques reviewed in Table 4 or mark-recapture of carcasses. Council should also consider the relative value of low labor "high tech" methods versus intensive labor "low tech" methods for benefit to local economies of the tribes and other local economies.

The statistical design for comparing video results with proposed electronic counts should be described.

Council should simultaneously consider this proposal with the companion work proposed on the Minam River in the Grande Ronde River subbasin, proposal 27019. The response should address concerns from that proposal that apply here as well.

The proponents should provide past and future data (with metadata) via STREAMNET or other suitable electronic database.

The proponents should address the relationship of this project to other projects to conduct redd counts and assess adult escapement, specifically Proposal #28001 "Evaluate Factors Influencing Bias and Precision of Chinook Salmon Redd Counts". If the NPT/PNNL hydroacoustic proposal numeration were funded and proves to be successful, would redd counts become obsolete?

Project ID: 199902000

Analyze the Persistence and Spatial Dynamics of Snake River Chinook Salmon
Sponsor: USDA Forest Service- Rocky Mountain Research Station
Subbasin: Salmon
Short Description: Results will advance current understanding of the relationship between the distribution, pattern, and persistence of chinook salmon and landscape patterns. **Note: the most appropriate RPA for this project is RME Action 180.
FY02 Request: $112,410
3 YR Estimate: $351,242
ISRP Preliminary Review Comments:
A response is needed. The intent of the project is to understand the factors determining the distribution of spawning chinook salmon, based on observations made in the Middle Fork Salmon River. The proposition is that spawning distribution depends on the amount of habitat, the quality of habitat, and its proximity to other habitat.

This project has been underway since 1995, and has received BPA funding since 1999. The proposal contains no description of results obtained to date. Reviewers' support for the proposal would be strengthened by a discussion of results obtained to date and plans

for publication. The proposal states that the "project will require additional years to follow a complete generation or more of spawning fish to complete the analysis of spatial structure". Please elaborate, and describe why field data from years 2002-2004 would be pivotal.

Project ID: 28001

Evaluate Factors Influencing Bias and Precision of Chinook Salmon Redd Counts
Sponsor: USDA Forest Service- Rocky Mountain Research Station
Subbasin: Salmon
Short Description: Results will assess redd count bias and precision and will have important implications for improving chinook salmon redd surveys across the Snake River basin.**Note: the most appropriate RPA for this project is RME Action 180.
FY02 Request: $198,738
3 YR Estimate: $626,522
ISRP Preliminary Review Comments:
Responses to minor suggestions on improvement of study design are needed. This is an excellent research proposal to evaluate biases and variation in common methods of conducting redd counts. There is excellent cooperation with BPA project #199902000 (RMRS biologists plan to conduct annual aerial redd counts in the entire MFSR through 2004). Also, to assist collaboration and increase efficiency, some study reaches will be selected to coincide with index reaches that are monitored annually by IDFG, the tribes, and the USFS. The proponents appropriately identify their objectives as meeting the intent of Action 180 in the 2000 Biological Opinion that specifically calls for funding of Tier 1 and Tier 2 studies to collect data for population status monitoring
The ISRP agrees that the insights derived from this research could have important applications for improving redd counts and assessing adult escapements currently conducted by other entities across the Snake River basin and, in fact, for the entire Columbia Basin.

In 1999, two of the current proponents submitted a proposal entitled “Evaluation of a Mark-Resight Survey for Estimating Numbers of Redds” with BPA Project #20055. The ISRP recommended the project for funding and commented: “A strong proposal that provides a comparison between aerial and ground surveys of redds. This research is much needed and should result in improved technique.” We continue to support this improved proposal. Funding for the project was deferred, in part, because of the extremely low escapements in 1999 and 2000. With anticipated increased escapements in the future, the proponents should be able to meet their objectives.

The proponents should address the relationship of this project to the NPT/PNNL hydroacoustic proposal No. 199703000. If the NPT/PNNL hydroacoustic proposal numeration were funded and proves to be successful, would redd counts become obsolete?

Minor suggestions for improvement of the proposal:

- Success of this project apparently depends on funding of Project #199902000. Are other projects that include redd counts also necessary?

- In Task 2, the proponents note that different observers should be used in the ground surveys and the aerial surveys. The ISRP notes that different observers should also be used to prepare the "ground truth map of redd locations" in objective 1.
- The proponents note that the role of aerial and ground surveys may be reversed. It seems that two analyses should always be conducted regardless of the outcomes, i.e., consider the redds detected by one survey as "marked" and determine if those are or are not detected by the other survey.
- A third analysis would also seem to be useful. Consider the Study reaches in Objective 1 with the "complete maps of redds" as of the date of following standard ground and aerial surveys. That is, the maps are the first sample of a Lincoln-Petersen survey, with covariates measured on the redds, etc. Then consider the standard ground survey or aerial survey as the second sample and determine if the redds on the map were or were not sighted. Probability of sighting redds during the ground survey or aerial survey could be estimated by logistic regression on covariates. These correction factors might then be evaluated for potential use in "correcting" other ground or aerial surveys for visibility bias.
- Data and metadata should be made available via Streamnet or other suitable electronic database.
- Finally, if effort can be allocated to measure the above covariates on a sample of stream points "available" for constructing redds, then a model (resource selection function of the covariates) for prediction of the relative probability that a point in the stream will be used as a redd site could be developed.

Project ID: 28034

Chinook Salmon Smolt Survival and Smolt to Adult Return Rate Quantification, South Fork Salmon River, Idaho
Sponsor: Nez Perce Tribe
Subbasin: Salmon
Short Description: Monitor smolt production and adult escapement in the South Fork Salmon River with PIT-tag detections to provide SARs and R/S ratios as performance measures.
FY02 Request: $660,000
3 YR Estimate: $1,890,000
ISRP Preliminary Review Comments:
A response is needed. The proponents should clarify the relationship of this project to #199102800 **"**Monitoring smolt migrations of wild Snake River sp/sum chinook salmon."

This is a good research proposal with the primary goal to calculate and monitor smolt-to-adult returns (SARs) and recruits per spawner ratios (R/S) of summer chinook salmon in the upper South Fork Salmon River basin. Study design has been carefully considered including obtaining statistical estimates of the necessary sample sizes to achieve useful results. Completion of this study, integrated with other ongoing studies in the basin, should allow estimation of South Fork Salmon River Basin (SFSB) juvenile survival, adult returns, SARs, and R/S (recruits per spawner). However, we found it strange that the proponents did not discuss interaction with Project #199102800 "Monitoring smolt migrations of wild Snake River sp/sum chinook salmon." There is potential for overlap

based on the following statements from proposal #199102800 "Currently, we have five environmental monitoring sites. The monitors are located in the streams near the Secesh River juvenile migrant trap, the South Fork Salmon River trap by Knox Bridge, the Marsh Creek trap, the Sawtooth Hatchery intake/trap, and the Valley Creek U. S. Geological Survey site." Also, project #199102800 indicates that they work at "South Fork Salmon River-between river km 112 and 122, Valley County, Idaho."

The proponents should ensure that their data and metadata are made available via STREAMNET or other suitable electronic database.

Project ID: 28052

Adult Snake River steelhead monitoring in the South Fork Salmon River Basin.
Sponsor: Nez Perce Tribe/Pacific Northwest National Laboratory
Subbasin: Salmon
Short Description: We propose to initiate collection of baseline steelhead adult abundance information critical for determining population status and viability in addition to identifying potential management actions needed for Snake River steelhead in Johnson Creek..
FY02 Request: $708,000
3 YR Estimate: $1,677,000
ISRP Preliminary Review Comments:
A response is needed. This is a proposal to 1.) attempt installation and maintenance of a hydroacoustic counting station in Johnson Creek, and 2.) assess whether or not the system will yield accurate counts of steelhead entering the system for spawning.

What evidence (describe results, including relative accuracy of alternative methods, for trials in other similar settings) do you have that provides a convincing case that "advanced hydroacoustic techniques" will provide accurate data (with physical constraints, turbulence, occurrence of false targets, and "fall-back") in conditions as found in Johnson Creek? How will you account for "early" and "late" run fish, and for fish passing during high flows when the weir has to be pulled? Isn't the high flow period most likely to cause significant error in hydroacoustic data? Placement of equipment in secure locations under conditions in these streams is difficult at best. What structures are planned that will withstand high flows (water, debris, bedload) that regularly occur in Salmon River tributaries?

Objective 1. Is the sampling protocol for redds consistent with methods such as those outlined by ODFW? What evidence do you have that counting redds for these steelhead will produce useful data?

If funded, the emphasis should be on research and development and peer-reviewed publication of results. If the proponents cannot produce convincing information to show that a suitable installation can be made and maintained on "flashy" streams in similar climatic conditions (and during runoff) and produce useful data, all similar proposals (Lake Creek, Secesh River, Minam River, Johnson Creek, and Marsh Creek) should be

combined to a single research proposal to review the associated problems, describe possible strategies to overcome these problems, and assess the potential of "high tech" counting methods in conditions like those expected in streams of the Snake River basin. If data from similar locations are available, the proponents should describe and discuss the reliability and suitability of these data for meeting goals for Snake River salmonids.

If there is a convincing case that the technical problems can be addressed, the proponents should contrast the cost of this "high tech" approach for estimating spawner abundance to that of labor intensive but potentially more economical "on the ground probabilistic surveys" using existing survey techniques or mark-recapture of carcasses. At any rate, redd surveys are necessary in addition to accurate counts of spawners, and the ISRP wonders if labor intensive mark-recapture of carcasses might be equally informative for estimation of spawner abundance and also provide additional useful information on other necessary life history parameters.

Project ID: 28051

Assess and Monitor Steelhead in the Middle Fork Salmon River Subbasin
Sponsor: Nez Perce Tribe
Subbasin: Salmon
Short Description: Assess current population status, dynamics and genetics of steelhead in the Middle Fork Salmon River subbasin.
FY02 Request: $416,147
3 YR Estimate: $1,250,402
ISRP Preliminary Review Comments:
A response is needed. The proposal would be much more effective had it included a detailed description of what is presently going on in the basin, a clear statement of goals for these steelhead, and why the present program is deficient with respect to meeting the goals. It needs to address question such as:

- How will managers use the data expected from the study?
- Was the need to do this work identified in the sub basin summary?
- What problem in the Middle Fork will be addressed using these data? How?
- Are existing genetic data inappropriate?
- Why do you need to expand the present genetic database?
- What management problem will be solved with the genetic data?
- How will your sampling be coordinated with other parr sampling? Specifically, what is the relationship of this project to the current projects for monitoring production?
- Will these data be redundant or will existing data gathering be expanded? Why?
- What information suggests that monitoring of adult steelhead can be successful?
- Will your sampling contribute to jeopardy of these fish?

The ISRP strongly supports the proponents in their plans to establish snorkeling transects for juvenile abundance utilizing a systematic sampling approach based on stream habitat type. This is the first proposal to establish a probabilistic sampling plan for fish abundance in the Idaho Provinces that we are aware of. The ISRP recommends that the proponents go further and work with the Oregon, Washington, and Montana Provinces to

develop compatible monitoring and evaluation procedures with common field procedures and probabilistic site selection for the entire Columbia Basin. The Oregon Plan for Salmon and Watersheds Monitoring Program (Nicholas 1997a, 1997b, 1999) as implemented in the Oregon coastal coho streams and the Columbia Plateau Province is a Tier 2 statistical monitoring and evaluation program that can serve as a good model. Also, see the section on monitoring in the introduction to this report.

The monitoring component for juvenile steelhead is fundable if a convincing response to ISRP questions and comments is provided.

Project ID: 28009

Smolt Condition and Adult Returns: An Indirect Method of Assessing the Potential Mitigation Benefits of Nutrient Enhancement Projects
Sponsor: Idaho Department of Fish and Game and Idaho Office of Species Conservation
Subbasin: Salmon
Short Description: Proposes the development of a standard weight equation for chinook salmon and steelhead trout smolts. The equation will provide a method to determine if the condition of Snake River smolts is poor due to the lack of marine-driven nutrients.
FY02 Request: $44,600
3 YR Estimate: $44,600
ISRP Preliminary Review Comments:
A response is needed. This is a proposal to develop a tool for assessing whether a population of salmonids could benefit from nutrient enrichment. The sponsors do not describe how they will account for differences in population density on smolt size. The proposal needs to show that the work will provide information beyond what we already know from size-at-release studies at hatcheries.

Project ID: 28054

Evaluation of Pisces Fish Protective Guidance and Monitoring System
Sponsor: Balaton Power, Inc.
Subbasin: Salmon
Short Description: Guide fish and monitor water conditions and fish passage
FY02 Request: $1,060,000
3 YR Estimate: $1,060,000
ISRP Preliminary Review Comments:
A response is needed. Reviewers were unclear as to why the proposal was part of the Salmon ecological province. Proposed testing of the device would occur in a tributary of the middle Snake River. It appears that it would be better served in a systemwide or innovative review. If NMFS is positive on this technology, as mentioned in the presentation, why is the project not a collaborative effort with NMFS?

Both proposal and presentation focused nearly exclusively on the technology rather than the application. It is apparently intended for small hydro projects? If there is potential utility or connection to Columbia basin hydro operations that should be clarified.

Project ID: 28011

Incidental Mortality in Selective Sport Fisheries
Sponsor: Idaho Department of Fish and Game and Idaho Office of Species Conservation
Subbasin: Salmon
Short Description: Conduct literature review and scoping for a contemporary study of incidental mortality rates in selective sport fisheries.
FY02 Request: $200,000
3 YR Estimate: $700,000
ISRP Preliminary Review Comments:
Do not fund. A response is not warranted. This is a request for funding to develop a proposal for estimating impact of catch and release fishing on non-hatchery salmon and steelhead in the Snake River. The background includes a statement that "Early work in the Snake River basin led to the conclusion anadromous adults could be released in selective fisheries with acceptable impacts (Pettit 1977)." The present proposal should have included what about that assessment is faulty and how its shortcomings (and shortcomings of other studies) will be overcome with a new study.

This issue has systemwide implications and a cooperative Columbia Basin wide study may be more appropriate. The mainstem and systemwide solicitation will begin in late fall and winter of 2001. A detailed proposal could be prepared in cooperation with other interested parties for the mainstem or systemwide solicitation.

Project ID: 28006

Tag and evaluate PIT-tag retention in sub-yearling chinook salmon
Sponsor: Biomark, Inc.
Subbasin: Salmon
Short Description: We propose to PIT tag 12,000 sub-yearling chinook salmon as part of an IDFG NATURES study being conducted in 2002. Additionally, we will determine the rate of PIT-tag shedding in sub-yearling salmonids from 24 hours post-tagging to 30 days post-tagging.
FY02 Request: $82,044
3 YR Estimate: $82,044
ISRP Preliminary Review Comments:
A response is needed. The technical review suggests there is need for a thorough exploration of the factors contributing to differences between recent studies and earlier studies. The authors state "Biomark personnel collected a substantial number of shed tags in raceways (10 days after tagging) at Priest Rapids dam." The ISRP learned that a "substantial number" of tags is from 2 to 6 percent! The ISRP recommends that a workshop be convened to examine the significance of the perceived problem, and to make recommendations for addressing the problem and analysis of existing results using PIT tags. The response should describe the applicability of the study across species and the basin?

The Council should consider whether this study is associated with Biomark's product development. If so, perhaps this would be better done through an independent RFP with Biomark providing guidance.

Project ID: 199700100

Captive Rearing Project for Salmon River Chinook Salmon
Sponsor: Idaho Department of Fish and Game and Idaho Office of Species Conservation
Subbasin: Salmon
Short Description: Develop captive rearing techniques for chinook salmon and evaluate the success and utility of captive rearing for maintaining stock structure and conservation levels of adult spawners in three drainages.
FY02 Request: $750,482
3 YR Estimate: $4,050,482
ISRP Preliminary Review Comments:
A response is needed. Reviewers appreciate sponsor's effort to review what has happened in past, and the detailed presentation of results and conclusions to date. The project could benefit significantly, however, by including evaluation of performance (all kinds) of the hatchery-produced fish.

The sponsors need to explain what is to be different about fish now being produced so that there is some reason to do more assessment.

The project seems to have some inconsistent elements. For example, the goal is to develop captive rearing techniques. Hasn't NMFS been doing that with Puget Sound chinook salmon for 20 or more years? An argument for initiating the project was to preclude loss of important sub-populations of chinook salmon. By stocking experimental fish in Bear Valley Creek, not one of the donor streams, isn't the project potentially increasing jeopardy for the sub-population inhabiting Bear Valley Creek? Also, why, in a project to develop rearing techniques was it necessary to use three sub-populations?

The project goal was do develop culture techniques, and to assess the spawning success in nature of the fish produced. Although the growth and survival of the experimental fish has not been comparable to fish produced in nature, hasn't that goal been met? It now seems the goal has changed to one of improving growth, survival, and performance of the fish produced. Why is this new goal necessary? If it is necessary, do growth, survival, and performance of the fish produced have to be comparable to that of wild fish? Please explain your intent here.

You propose to " …complete NPPC [NMFS] 4-step process to initiate artificial propagation safety net programs for spring/summer chinook salmon. If this is now an implementation project, isn't it premature in the 4-step process?

One identified task is to develop HGMPs. Will this be done in collaboration with other proposals to develop HGMPs (e.g., for hatcheries in the LSRCP)? If not, why not?

Redfish Lake Sockeye Program

All projects to preclude extinction of Stanley Basin sockeye salmon, should be subjected to review by "outside experts." An oversight committee exists, but they are viewing the program as a series of funded projects that need to be forged into a recovery strategy. An independent review could attempt to answer several questions including the following. Is it now possible to depend on Sawtooth Hatchery to supplement production from the associated lakes? Does the captive broodstock program remain a critical part of the program? After several years, attempts to increase survival of sockeye salmon via lake fertilization cannot provide convincing evidence that fertilization should continue; should it continue? Both sockeye and kokanee salmon from remote locations have, in the past, been stocked in Stanley Basin lakes. How strong is supporting evidence that Stanley Lake Basin sockeye salmon still exist?

1. Project ID: 199107200

Redfish Lake Sockeye Salmon Captive Broodstock Program
Sponsor: Idaho Department of Fish and Game and Idaho Office of Species Conservation
Subbasin: Salmon
Short Description: Establish captive broodstocks of Redfish Lake sockeye salmon. Spawn captive adults to produce eggs, juveniles, and adults for reintroduction and future broodstock needs. Evaluate juvenile out-migration and adult returns by release option.
FY02 Request: $853,229
3 YR Estimate: $3,044,520
ISRP Preliminary Review Comments:
A response is needed. Reviewers appreciate the sponsor's effort to provide detailed report of project history and results to date!

The program helped to return 257 adult fish to the Stanley Basin in 2000, and many of which were a result of the multi-agency program. Similar results were not realized in 2001. Given the success of other anadromous salmonids in 2001, to what do the sponsors attribute the poor showing of this program?

Direct release of juveniles to the lake seems to produce best results. Are other salmonids stocked in the lake? If so, what are the densities of these fish in fall compared to summer?

You reported a difference in body fat between fish reared at different hatcheries. Are these differences associated with fish released at different locations and times? It appears that best results were from matings at Big Beef Creek that were transferred as eyed-eggs to Bonneville for rearing and then to Stanley Basin for release. What is the suspected reason for that result?

Is there some chance that you are overstocking Redfish Lake? How does dominance of age-0 fish explain the low biomass estimate?

What is the numeric goal for each population? What are the criteria for delisting? What are the benchmarks for either claiming success or failure of the project?

2. Project ID: 199204000

Redfish Lake Sockeye Salmon Captive Broodstock Rearing and Research
Sponsor: National Marine Fisheries Service
Subbasin: Salmon
Short Description: Provide a safety net captive broodstock program for Redfish Lake sockeye salmon. Provide prespawning adults, eyed eggs, and smolts to aid recovery of this ESA-listed endangered species in Idaho
FY02 Request: $1,600,000
3 YR Estimate: $3,191,200
ISRP Preliminary Review Comments:
Not applicable. Scientific issues are not central to the decision. This is the NMFS captive rearing program in support of the Stanley Basin sockeye salmon program. The need for this project is integrally linked to that program. Part of the request is to purchase a freshwater hatchery that is presently leased, near Manchester, WA, to support the program. The expectation on behalf of project sponsors is that they will need this facility for the sockeye program during the next decade. Sponsors feel that the property owner can cancel the present leasing arrangement at any time, thus jeopardizing the program.

3. Project ID: 199107100

Snake River Sockeye Salmon Habitat and Limnological Research
Sponsor: Shoshone-Bannock Tribes
Subbasin: Salmon
Short Description: Enhance and monitor freshwater rearing habitat for juvenile Snake River sockeye. Evaluate the effects of nutrient addition and fish stocking on the lake's ecosystems and growth and survival of planted juvenile sockeye.
FY02 Request: $441,369
3 YR Estimate: $1,370,558
ISRP Preliminary Review Comments:
A response is needed. What would the project sponsor's recommendation be at the present time regarding use of lake fertilization to increase survival of Stanley Basin sockeye salmon? Please use existing results to support your recommendation. Are kokanee that are prevented access to spawning areas, killed and returned to the lake as a nutrient enhancement? Given the error (sampling and species identification) that you have identified, are the hydroacoustic data useful?

It appears that the only data to assess sockeye overwinter survival (that permit comparison) are those from Pettit Lake pre-fertilization (30.2%) and during fertilization (36.4%). Is that correct, and is there any way to assign that difference to fertilization?

Salmon River Subbasin Habitat Restoration and Protection Proposals

Project ID: 199401500

Idaho Fish Screen Improvement
Sponsor: Idaho Department of Fish and Game and Idaho Office of Species Conservation
Subbasin: Salmon
Short Description: Enhance passage of juvenile and adult fish in Idaho's anadromous fish corridors by consolidation and elimination of irrigation diversions. Minimize adverse fish impacts of irrigation diversion dams by screening pump intakes and canals.
FY02 Request: $1,000,000
3 YR Estimate: $3,148,050
ISRP Preliminary Review Comments:
Fundable if the proponents include monitoring data shown at the presentation in their proposal and if they report on the maintenance protocols. A response to the ISRP is not necessary; the ISRP concerns can be addressed by the Council in the project selection process or BPA in the contracting process. The Washington program has an established protocol for effectiveness monitoring that may provide a good model. This would ensure consistency across the basin. The proposal is adequate for multiyear funding or until completion in 2005.

This is an excellent proposal to continue an expensive fish screening program. There appears to be good collaboration among agencies and landowners. The proposal notes that screening should be complete by 2005.

The primary criticism in the FY00 review by the ISRP was the lack of monitoring and evaluation of results. The reviewers suggested incorporating monitoring and evaluation protocols and benchmarks into the project. The current proponents state that several screens were monitored by catching all fish diverted from the irrigation canal back to the river via the by-pass pipe. Six fish screens on the Lemhi River by-passed 841 fish in 150 days of the 1997 irrigating season. Two screens passed 632 (98%) steelhead during the irrigation season on the Pahsimeroi River. However, there is no indication of an appropriate consistent monitoring and evaluation protocol (e.g., systematic sample survey for screen effectiveness) that can be repeated over time. Perhaps a systematic sample of projects could be visited each year such that all are surveyed over a 5-year period. The ISRP does not expect a research level monitoring and evaluation scientific study. Tier I monitoring for effectiveness of the project, as described in the introduction to this report, should be sufficient. It may be sufficient to have a regular schedule for checking effectiveness of previous projects, some periodic search of irrigation ditches downstream of screens, monitoring of water temperature returning from irrigation ditches, etc. The Washington protocol may serve as a good model.

Project ID: 28035

Geomorphic Controls on Watershed-scale Availability of Chinook Salmon Spawning Habitat in the Salmon River
Sponsor: University of Idaho, USDA Forest Service Rocky Mountain Research Station
Subbasin: Salmon
Short Description: Quantify geomorphic controls on watershed-scale availability of sediment sizes suitable for chinook spawning.
FY02 Request: $133,625
3 YR Estimate: $400,875
ISRP Preliminary Review Comments:
A response is needed. The project proposes to quantify geomorphic controls on the availability of sediment sizes in the Middle Fork Salmon River by assessing validation of a geomorphic model, derived in a western Washington stream setting, that incorporates sediment grain size, relationship to slope and shear stresses. If successful, it might enable the utilization of remote sensing to identify and quantify potential spawning habitat. The researchers are highly competent. However in the minds of reviewers performance of this task would not significantly contribute to the goals of the FWP, especially in the Salmon subbasin where spawning substrate is well identified and clearly not in short supply. The response should clearly demonstrate the benefits of this project to fish, and the Fish and Wildlife Program.

Salmon Basin Soil and Water Conservation Proposals

1. Project ID: 199202603

Upper Salmon Basin Watershed Project Administration/Implementation Support
Sponsor: Idaho Soil Conservation Commission and Idaho Office of Species Conservation
Subbasin: Salmon
Short Description: Provide local coordination and guidance for implementation of on-the-ground projects that improve and enhance anadromous and resident fish habitat.
FY02 Request: $285,364
3 YR Estimate: $870,364
ISRP Preliminary Review Comments:
A response is needed for this collection of 6 numbered projects. The fencing projects, screening projects, and some additional actions in the watershed appear warranted and will likely benefit fish. The past actions on fencing the creeks and letting the streams restore themselves without planting or channel modification are justified for those sites. However, the set of proposals goes beyond “flat-tire” fixes. Consequently, the program needs a well-defined watershed assessment and project prioritization effort with a protocol for sampling projects for effectiveness monitoring. Evidence, including data, should be provided that monitoring conducted by other projects is sufficient to evaluate overall trends in numbers of adult and juvenile anadromous species in these subbasins and watersheds. These points are alluded to in the proposal and presentation, but the response should provide more detail.

In terms of working with EDT, the sponsors should consider conferring with Bruce Watson of the Yakama Nation fish and wildlife department.

The presentation was broken into a series of sub-presentations based on geography. Most listed the usual list of limiting factors, but did not provide much insight into proposed future actions. The list of opportunities for actions was fairly comprehensive, but did not provide a sense of prioritized actions. Many different agencies are doing many different kinds of monitoring. There seems to be opportunity for improvement and coordination.

The Lemhi has laudatory involvement from local stakeholders, as well as a functioning technical committee in place.

There seems to be a disconnect between the "fix the flat-tire" approach and the prioritization effort described in the presentation. Although some problems are obvious, what is the strategy? Should they start at the bottom or top of watershed? Start fixing the portion with best spawning or rearing habitat?

The ISRP does not expect a research level monitoring and evaluation scientific study in this project. Tier I trend monitoring for effectiveness of the project, as described in the introduction to this report, should be sufficient. It may be sufficient to have a regular schedule for checking effectiveness of previous projects, monitoring of water temperatures and cover habitat, etc., e.g., a small systematic sample of projects might be monitored for effectiveness each year so that over a 5 year period, all are surveyed for basic measures.

It does not appear that any of the current monitoring is sufficient to make statistical inferences to these subbasins and watersheds.

The proponents should clarify if or when data from these projects will be available in StreamNet with metadata (methods).

The review group suggests that future terrestrial monitoring efforts be made compatible with one of the national terrestrial survey efforts. Perhaps an intensification of the National Resources Inventory survey sites and data collection protocols would serve the region well. See the Proposals #200002300 and #200020116 and ISRP reviews in the Columbia Plateau.

2. Project ID: 28036

Holistic Restoration of Critical Habitat on Non-federal Lands in the Pahsimeroi Watershed, Idaho
Sponsor: Custer Soil & Water Conservation District / Idaho Governor's Office of Species Conservation
Subbasin: Salmon
Short Description: Collaborative effort to implement projects on non-federal lands that are effective at improving habitat conditions (and survival rates) for native anadromous and resident salmonids in the Pahsimeroi watershed, Idaho.
FY02 Request: $2,606,341
3 YR Estimate: $7,926,041
ISRP Preliminary Review Comments:
See comments on project 199202603.

3. Project ID: 28038

Holistic Restoration of Critical Habitat on Non-federal Lands, East Fork Salmon Watershed, Idaho
Sponsor: Custer Soil & Water Conservation District / Idaho Governor's Office of Species Conservation
Subbasin: Salmon
Short Description: Collaborative effort to implement projects on non-federal lands that are effective at improving habitat conditions (and survival rates) for native anadromous and resident salmonids in the East Fork Salmon watershed, Idaho.
FY02 Request: $2,608,084
3 YR Estimate: $7,879,984
ISRP Preliminary Review Comments:
See comments on project 199202603. Descriptions given during field tour convinced reviewers that Shoshone Bannock Tribe has been doing a good job of communicating with East Fork landowners. This suggests that this program would be more effective with their involvement.

4. Project ID: 28040

Holistic Restoration of Critical Habitat on Non-federal Lands, Upper Salmon Watershed, Idaho
Sponsor: Custer Soil & Water Conservation District / Idaho Governor's Office of Species Conservation
Subbasin: Salmon
Short Description: Collaborative effort to implement projects on non-federal lands that are effective at improving habitat conditions (and survival rates) for native anadromous and resident salmonids in the Upper Salmon watershed, Idaho.
FY02 Request: $2,567,545
3 YR Estimate: $7,847,045
ISRP Preliminary Review Comments:
See comments on project 199202603.

5. Project ID: 28039

Holistic Restoration of Habitat on Non-federal Lands, Middle Salmon-Panther Watershed, Idaho
Sponsor: Lemhi Soil & Water Conservation District / Idaho Governor's Office of Species Conservation
Subbasin: Salmon
Short Description: Collaborative effort to implement projects on non-federal lands that are effective at improving habitat conditions (and survival rates) for native anadromous and resident salmonids in the Middle Salmon-Panther watershed, Idaho.
FY02 Request: $1,863,326
3 YR Estimate: $5,688,526
ISRP Preliminary Review Comments:
See comments on project 199202603.

6. Project ID: 28037

Holistic Restoration of Critical Habitat on Non-federal Lands in the Lemhi Watershed, Idaho
Sponsor: Lemhi Soil & Water Conservation District / Idaho Governor's Office of Species Conservation
Subbasin: Salmon
Short Description: Collaborative effort to implement projects on non-federal lands that are effective at improving habitat conditions (and survival rates) for native anadromous and resident salmonids in the Lemhi watershed, Idaho.
FY02 Request: $3,238,682
3 YR Estimate: $9,839,182
ISRP Preliminary Review Comments:
See comments on project 199202603.

Project ID: 199901900

Holistic Restoration of the Twelvemile Reach of the Salmon River near Challis, Idaho
Sponsor: Custer Soil & Water Conservation District/Idaho Governor's Office of Species Conservation
Subbasin: Salmon
Short Description: Work holistically to restore the channelized Salmon River corridor to a natural meandering form in balance with watershed processes that will restore geomorphic diversity, reduce bank erosion, lower summer temperatures and improve critical fish habitat.
FY02 Request: $1,844,000
3 YR Estimate: $5,158,000
ISRP Preliminary Review Comments:
A response is needed. The response should clarify the priority of this reach for this level of restoration activity. A watershed assessment should indicate the priority of this effort. For example, if high stream temperature generated upstream is the key limiting factor, this project is likely secondary in priority. Is this the critical reach that needs to be

restored at this time? Or, is this a unique, time-limited opportunity to protect fish habitat in this reach of private land?

This section of the Salmon is indeed a problem, and is little used for summer rearing. However, the cause may be because of water temperature. Riparian improvement would be a good thing to do, but because of the width of stream and potentially relatively warm water entering from above that is also exposed to warming through a rocky reach, reviewers were cautious regarding the efficacy of the expensive, heavily engineered approach proposed. Stream temperature modeling should be used to assess if habitat changes as proposed could significantly reduce summer temperature of water to within the range acceptable to salmonids.

No data on fish are presented. Instead this is described as a holistic project. As in the Red River meadow project (Clearwater subbasin), the lack of ties actually made to fish habitat and production should be rectified.

Detailed plans must be given (or referenced) for monitoring and evaluation. Plans for construction should be reviewed by an independent engineering group before final funding.

This is a long rambling complicated proposal that is difficult to review from a scientific and technical point of view. The bottom line in the previous FY00 review by the ISRP was that "….we focus primarily on the scientific and technical merits of proposed projects. It goes against the ISRP's Congressionally-mandated directives and good scientific common sense to recommend advancement of projects for funding that do not have a master plan (or its equivalent) in place that define critical elements of project planning, experimental design, and monitoring and evaluation."

In the current proposal, the proponents indicate that studies of the geomorphology of the reach, completed during the past two years, have documented the recent changes and problems associated with local stabilization projects. It is also stated that "The Walla Walla District Corps of Engineers is conducting a Feasibility Study under Section 206, Aquatic Ecosystem Restoration on the 12 mile reach of the Salmon River near Challis, Idaho." … "The feasibility portion of this project is expected to be completed in late winter of 2002 with construction beginning during the summer of 2002. Construction is likely to occur over the course of several years as different landowners become partners." As in the FY00 review, if this proposal is funded it is necessary to take much of it on faith that the program is technically sound and will have biological benefits.

The proponents indicate that some monitoring data are available. Simple graphs or tables presenting past results should be included in the proposal. Monitoring and evaluation is proposed, but in very general terms. Details on exactly what variables are to be measured and what methods are to be used must be included or references given to published documentation. A good model to be used for detailing monitoring and evaluation plans is contained in Proposal #28016.

There are aspects of the proposed budget that appear to be inconsistent for the 2003 out year costs of obtaining critical conservation/access easements.

Project ID: 28016

Restoration of the Yankee Fork Salmon River
Sponsor: Custer Soil & Water Conservation District, Idaho Governor's Office of Species Conservation
Subbasin: Salmon
Short Description: Restore the natural river channel characteristics, floodplain function, sediment regime, and aquatic habitat within the dredged reach of the Yankee Fork. Reconnect the remaining quality habitat, thereby increasing the biological integrity of the basin.
FY02 Request: $799,785
3 YR Estimate: $3,213,505
ISRP Preliminary Review Comments:
A response is needed. The proponents should clarify the need for an upper watershed assessment and whether the dredged reach is a bottleneck for reaching good upstream habitat. Project history states that a contract was developed to determine the feasibility of the project. What was the result of this analysis? Did the analysis conclude that significant gains in productive salmonid habitat could be gained from this project? This proposal needs to include a convincing case that it is feasible, and that significant benefits to fish populations will result from this rather expensive project. Further clarification is needed of the role of Simplot Corp. Will they forego future development rights in the conservation easement?

The project might be fundable in stages as the conservation easement is obtained and concrete plans for restoration construction are available. Plans for construction should be reviewed by an independent engineering group before final funding.

The proponents have accomplished impressive preliminary planning, cooperation with state, federal, and university personnel, completion of watershed analysis by USFS, and other pilot work in 1999-2001. The ISRP is sympathetic to the fact that detailed designs for restoration cannot be given at this time, however, if funded, much of the proposal must be taken on faith that technically sound procedures will be implemented to provide biological benefits.

The plans for monitoring and evaluation are well done.

Project ID: 28008

Riparian Conservation Easement Purchase of Scarrow Property on Lake Creek a Tributary to the Secesh River, Idaho.
Sponsor: Idaho Department of Fish and Game and Idaho Office of Species Conservation
Subbasin: Salmon
Short Description: Acquisition of sensitive riparian area to protect water quality above wild summer chinook spawning grounds.
FY02 Request: $68,500
3 YR Estimate: $68,500
ISRP Preliminary Review Comments:
A response is needed. This project would give fairly good protection to this riparian area, the last private land in the subwatershed. This property is three miles above known chinook spawning habitat. The proponents should clarify that three-listed species occur on the property and that redd trends are increasing, or was this statement in reference to the Bergdorf property?

The ISRP questioned whether a conservation easement might be feasible on the entire 60 acres. If funded, the project should have a plan for Operations and Management of the property with indication of required funding if any. In addition, plans should be included for monitoring and evaluation of the effectiveness (Tier 1) of the conservation easement over time with indication of required funding if any. The response should describe these plans.

Why were current resumes not given for this proposal?

Lower Salmon Habitat Protection and Restoration Proposals

1. Project ID: 28044

Protect and Restore Deer Creek Watershed
Sponsor: Nez Perce Tribe Fisheries/Watershed
Subbasin: Salmon
Short Description: Protect and restore valuable fluvial aquatic habitat by improving riparian and watershed conditions in upper watershed through watershed assessment and restoration activities in Deer Creek watershed.
FY02 Request: $155,213
3 YR Estimate: $669,213
ISRP Preliminary Review Comments:
A response is needed. This is a proposal to improve habitat for resident fish and wildlife along Deer Creek above the falls. Reviewers question the value provided by stream habitat restoration if the dominant benefactor is brook trout, as appears to be the case here.

According to the proposal, the Nez Perce Tribe currently owns 27% of the watershed and proposes to conduct an Ecosystem Analysis at the Watershed Scale (EWAS) to describe current conditions and make management decisions. There is an apparent lack of current management consensus with the Idaho Department of Fish & Game, which owns half of

the watershed, and the EWAS is proposed as a method to enable consensus. To what extent do IDFG and other landowners advocate EWAS preparation? Also, the EWAS approach relies on the expertise of an interdisciplinary team (IDT). To what extent would the Deer Creek IDT members represent a variety of groups and agencies?

Deer Creek is a site being considered for reservoir construction by NPT (under proposal 199501300, Resident Fish Substitution Program). This was not mentioned in this proposal. What are the implications of possible reservoir construction to this proposal?

Also, a response is needed that addresses the option of buying out the grazing lease instead of building and maintaining fence. Please clarify the numbers and ownership of stock involved and the timing of current grazing.

2. Project ID: 28018

Lower Salmon River Tributary Protection and Enhancement
Sponsor: Idaho Department of Fish and Game
Subbasin: Salmon
Short Description: Protect and enhance important aquatic and terrestrial habitats in Salmon River tributaries.
FY02 Request: $101,000
3 YR Estimate: $1,048,000
ISRP Preliminary Review Comments:
A response is needed. The project would acquire land and conservation easements in lower Salmon River tributaries (from French Creek near Riggins to Salmon-Snake confluence), an approach that has been endorsed by reviewers in other subbasins as an effective way to preserve and restore fish and wildlife resources. However, this proposal provides only general statements of what will be done. There is no material to review for technical merit.

A response is requested that identifies the basics of the prioritization process that would be used to assess the merits of prospective purchases and easements. Reviewers feel that at this point, for aquatic habitats, the proposing agency would profit from the development of a watershed assessment procedure (EDT or similar) that identifies priority areas and strategies.

Additionally, a response is needed that shows evidence of active coordination of this proposal with the Nez Perce Tribe's proposal 28010. Both are in the same area and propose similar strategies, i.e. acquisitions including easements and outright purchases.

The review group suggests that future terrestrial monitoring efforts be made compatible with one of the national terrestrial survey efforts. Perhaps an intensification of the National Resources Inventory survey sites and data collection protocols would serve the region well. See the Proposals #200002300 and #200020116 and ISRP reviews in the Columbia Plateau.

3. Project ID: 28010

Nez Perce Salmon River Terrestrial
Sponsor: Nez Perce Tribe
Subbasin: Salmon
Short Description: Protect, enhance, and restore native canyon grassland, and associated riparian habitats within the Lower Salmon and Little Salmon River Watersheds, along with high elevation wet meadows which are the headwaters and water storage systems for the same.
FY02 Request: $2,801,996
3 YR Estimate: $8,826,742
ISRP Preliminary Review Comments:
A response is needed. This is a proposal for future acquisition of 3,000 acres/year of terrestrial habitat in the Little Salmon watershed and in the Lower Salmon from Whitebird Creek to the Salmon-Snake confluence. It addresses a clear set of general needs in those areas. Nevertheless, more attention to the planned approach, criteria for prioritization of possible acquisitions (including ties to anadromous fish habitat where appropriate) seem warranted.

The monitoring and evaluation section is particularly appreciated by the ISRP. The review group suggests that the monitoring effort be made compatible with one of the national terrestrial survey efforts. Perhaps an intensification of the National Resources Inventory survey sites and data collection protocols would serve the region well. See the Proposals #200002300 and #200020116 and ISRP reviews in the Columbia Plateau.

Additionally, a response is needed that shows evidence of active coordination of this proposal with the Idaho Department of Fish & Game's proposal 28018. Both are in the same area and propose similar strategies, i.e. acquisitions including easements and outright purchases.

4. Project ID: 28050

Protect and Restore Little Salmon River
Sponsor: Nez Perce Tribe Fisheries/Watershed
Subbasin: Salmon
Short Description: Protect valuable riparian corridor and fluvial aquatic habitat while increasing habitat quality and quantity within the mainstem Little Salmon river basin.
FY02 Request: $262,896
3 YR Estimate: $560,538
ISRP Preliminary Review Comments:
A response is needed. The proposal would "partner" with landowner group to improve riparian habitat, and demonstrates good interactive potential between NPT and landowners. Would the 2.5 miles of restored riparian habitat be accessible to the public?

The proposal provided inadequate information on fish resources in the immediate project area. Please clarify and discuss how project actions might benefit those populations. Reviewers note that the photos in the proposal of stream restoration in Colorado and Montana were not helpful in evaluating the project.

Because the property is 1 mile above the Little Salmon Creek falls, benefit to anadromous fish is very indirect and a weak case is made for any such benefit. Has restoring passage above the falls been considered by the proposers and is that a future possibility? If so, why is that not being proposed (or addressed) now?

Reviewers concur that some physical monitoring is needed to assess habitat response, but do not agree that physical monitoring can satisfactorily replace fish population monitoring. Please describe an appropriate fish monitoring program that would be part of the project.

5. Project ID: 28049

Restore and Protect Slate Creek Watershed
Sponsor: Nez Perce Tribe Fisheries Watershed
Subbasin: Salmon
Short Description: Restore and protect the Slate Creek Watershed for the benefit of both resident and anadromous fish using an overall watershed approach. Restoration and protection efforts will be done cooperatively with the Nez Perce National Forest.
FY02 Request: $231,841
3 YR Estimate: $966,099
ISRP Preliminary Review Comments:
A response is needed. This is a clearly written proposal that target specific restoration activities and shows good familiarity with Slate Creek. Excellent collaboration between the Nez Perce Tribe and the Nez Perce National Forest that administers 93% of the watershed is evident. An Ecosystem Analysis at the Watershed Scale has recently been completed by the NPNF and was provided to reviewers.

While most proposed activities appear consistent with the EWAS, objective 5, to restore the "missing" meander of Gold Lake Creek was not identified as a significant problem in the subbasin summary and reviewers did not notice discussion of it in the EWAS. Please clarify and provide detail of expected benefits from this relatively costly proposed action.

Monitoring and evaluation, especially of fish populations, was inadequately described in the proposal. Please provide additional M & E detail. Also, the review group suggests that future terrestrial monitoring efforts be made compatible with one of the national terrestrial survey efforts. Perhaps an intensification of the National Resources Inventory survey sites and data collection protocols would serve the region well. See the Proposals #200002300 and #200020116 and ISRP reviews in the Columbia Plateau.

6. Project ID: 28058

Restore Fish Passage and Habitat in the Upper East Fork of the South Fork of the Salmon River

Sponsor: Idaho Department of Environmental Quality - Idaho Office of Species Conservation

Short Description: Restoration of fish passage and aquatic and riparian habitat through a historic open pit mine which created a migration barrier in the middle of the east Fork of the South Fork of the Salmon River (EFSFSR)

FY02 Request: $842,000

3 YR Estimate: $894,000

ISRP Preliminary Review Comments:

A response is needed. The project would restore fish passage by remediating a Stibnite mine "legacy". The site is no doubt a major source of sediment in the basin that should have been stabilized long ago. The biologist associated with the project assures reviewers that improving fish passage is not likely to also improve conditions for exotics such as brook trout. However, the response should provide additional information regarding expected gains in fish populations if passage is restored. To what extent would the 7 miles of habitat available above the Glory Hole barrier be usable for spawning and rearing by anadromous stocks?

Reviewers note that a major attribute of the proposal is that it involves staff from a number of state agencies and the Nez Perce Tribe. A more definitive indication of the level of support from the Idaho Department of Fish & Game, indicating their perspective on fish benefits from the project, would be helpful.

Please elaborate on the extent to which this action might be time-limited. The proposal states "if funds are not made available very soon, the project will be abandoned and fish passage to the Upper EFSFSR [will] be impaired until well after threatened and endangered species recovery efforts have been completed". For example, what is "very soon" and what would be the effect of abandonment?

Some funds are allocated to fisheries and macroinvertebrate monitoring during and after construction, but no methods are described. Please describe the basics of that program, and also how the post-project ability of anadromous fish to pass above the barrier will be assessed. Compatibility with methods of monitoring in other projects such as the Idaho natural production monitoring studies should be assured.

Project ID: 28019

Improve Stream Habitat by Reducing Discharge from Animal Feeding Operations
Sponsor: ISDA, IOSC
Subbasin: Salmon
Short Description: Enhance tributary and main stem fish habitat and water quality by reducing direct discharge and run-off from Animal Feeding Operations by supporting on-farm improvement with cost-share funding and technical assistance.
FY02 Request: $2,026,000
3 YR Estimate: $2,026,000
ISRP Preliminary Review Comments:
A response is needed. This proposal is a request for funds to identify feed lots that degrade local water quality. The proposal is similar to several others that request funds for an activity that has no specific objectives other than identifying and fixing problems. There is no informational support provided for a contention that these sites pose further threat for endangered salmon. Plans for survey and prioritization of projects are needed. Biological problems need to be identified and justification given that injuries to fish and fish habitat are occurring. Is the problem sediments? Temperature? Nutrients? They would address run-off and streambank degradation issues.

Are there USDA programs, e.g. the CRP and CREP programs to provide fenced buffers along streams, that could be brought to bear to help solve the anticipated problems? What are the perceived magnitudes of the problems and what are some of the proposed solutions? What are the estimated benefits to water quality that would come from completion of this assessment and enrollment of local livestock owners into this program?

Project ID: 199405000

Salmon River Habitat Enhancement M & E
Sponsor: Shoshone-Bannock Tribes
Subbasin: Salmon
Short Description: Maintain habitat improvements and evaluate benefits; monitor salmonid populations and habitat parameters; coordinate land and water stewardship activities; coordinate planning, implementation, monitoring, and evaluation of new improvements and protections
FY02 Request: $249,500
3 YR Estimate: $755,000
ISRP Preliminary Review Comments:
A response is needed. The proponents need to provide documentation that common monitoring methods are being used in these watersheds and other watersheds in the Salmon subbasin and that data and metadata are being provided to Streamnet (or other database if Streamnet is not appropriate).

This project continues to focus on monitoring and evaluation of results of previously completed and ongoing restoration work. Ongoing projects are adequately justified with references to methods and results, however, it is not clear that methods are the same as for other monitoring programs in the Snake Basin, e.g., Project #199107300 “Idaho

Natural Production Monitoring and Evaluation." The proponents should corroborate with principal investigators on other monitoring and evaluation projects to ensure that results are comparable among projects and areas within the basin.

It is not clear that original monitoring sites were selected by a probabilistic sampling method to allow statistical inferences to be drawn to the entire study area(s). Also, it is not clear if the sites are part of a Snake Basin wide monitoring and evaluation program, e.g., project #199107300 "Idaho Natural Production Monitoring and Evaluation." The ISRP recommends that the proponents of monitoring projects in the Idaho Provinces work with the Oregon, Washington, and Montana Provinces to begin to develop monitoring and evaluation procedures with common field procedures and probabilistic site selection for the entire Columbia Basin. The Oregon Plan for Salmon and Watersheds Monitoring Program (Nicholas 1997a, 1997b, 1999) as implemented in the Oregon coastal coho streams and the Columbia Plateau Province is a Tier 2 level monitoring and evaluation program that can serve as a good model. Also, see the section on monitoring in the introduction to this report.

The review group suggests that future terrestrial monitoring efforts be made compatible with one of the national terrestrial survey efforts. Perhaps an intensification of the National Resources Inventory survey sites and data collection protocols would serve the region well. See the Proposals #200002300 and #200020116 and ISRP reviews in the Columbia Plateau.

Clearwater Subbasin Proposals

Project ID: 28004

Lawyer Creek Subwatershed-Steelhead Trout Habitat Improvement Project
Sponsor: Lewis Soil Conservation District
Subbasin: Clearwater
Short Description: Reduce sedimentation to improve instream habitat in Lawyer Creek and the lower Clearwater River, and improve upland water storage by implementing best management practices for sediment reduction and water retention.
FY02 Request: $246,500
3 YR Estimate: $679,500
ISRP Preliminary Review Comments:
Response needed. This project's part of the field tour was very informative on agricultural aspects and on sediment yield from treated vs. untreated cropland. Effectiveness of the no-till cropping BMP is particularly impressive. The proposal helps define the problem with pertinent background information on wild fish stocks, however, it neither specifies M&E of fish population responses under the project nor states coordination with any other project with respect to biological M&E. The oral presentation was clear but had the disadvantage of revealing a certain lack of coordination of the project with a related project, 28021, i.e., the BMPs for 28004 should accommodate some of the needs expressed in 28021. Personnel from both projects should consult and reach agreements.

The proposal discusses (p. 11) its relationship to Project 28029 (though the number apparently did not exist at time of writing) and states that the two are complementary and non-duplicative.

A modeling analysis suggested that higher peak flows and greater volume of flow have resulted from past agricultural practices. What does this same model suggest regarding the benefits of the work proposed here? It is later suggested in the proposal that 10-yr peak flows could be reduced by 39% by a basin-wide change in land use. Is a basin-wide change in land use planned? If not, how much of an impact might be anticipated? To answer this, some indication of the area treated and benefit of the several BMPs would have to be quantified but that information is lacking. Please provide.

This is basic habitat management, protection and rehabilitation, but it is important that the effort flows from a comprehensive watershed management plan that begins with a condition assessment. To address the limiting factors that a well-planned and documented assessment should reveal, information on the conditions and their effect on survival through freshwater life stages of salmonids must be indicated or referenced. What species and what life stages are negatively responding to low flows, high temperatures, and sedimentation, or a lack of quality pools and cover, how, where and when, and to what comparative level? Of these, which is the priority and how might they be addressed?

This proposal focuses only on the upland work using BMPs. An excellent field presentation of innovative approaches to be included under this land use treatment was provided. BMPs seem appropriate, but should work not also include riparian silviculture and in-stream habitat? Proper functioning condition includes all of the ecosystem components, thus this proposal must be tied to the overall watershed assessment and prescription. Provide this document.

As a treatment approach, BMPs are attractive, and a well-planned adaptive management experiment in use of BMPs may be possible with some coordinated effort among sub-basins. Some tributaries might be selected for treatment with appropriate BMPs while others are not, recognizing that there will also be a need to consider the effect of environmental variability in the experiment design and analysis. The advice of a biometrician and experimental analyst is suggested, along with a cooperative effort from a school of agriculture and land use or ecology for more detailed work. Thus, three layers of response monitoring are suggested, including a before-after trend in physical variables (depending on the treatment, but likely flow, temperature and sediment), more detailed assessment of the physical and biological (fish) response as part of an overall basin approach, and/or experimental research on BMPs. Which layer do they choose? Please provide a summary of how this work was (will be) coordinated through the Focus Group (199706000 and 199608600).

Monitoring and evaluation by means of modeling approaches, as suggested, can be instructive, but a control and treatment comparison of flow regimes, temperature,

sedimentation (TDS?) and the fish response must be included, along with a clear indication of this project's connection with a basin-wide program of M&E. Likewise, an analysis of risk and uncertainty would aid reviews and planning (i.e., how much work must be completed before a positive impact is measurable, or what is the likelihood of failure?).

Sharon Kinzer et al provide several newsletters annually, an excellent approach for promoting participation and information exchange locally, but more detailed and scientific reporting is also required, including not only the work accomplishments but also information on response indicators and success or failure in meeting the goals of protecting and enhancing fish production.

Selway Falls

1. Project ID: 28013

RENOVATE SELWAY FALLS ANADROMOUS FISH PASSAGE TUNNEL
Sponsor: Idaho Department of Fish and Game and Idaho Office of Species Conservation
Subbasin: Clearwater
Short Description: The Selway River anadromous fish tunnel was constructed in the late 1960' in an effort to provide improved passage conditions through the Selway Falls complex. Since that time the infrastructure has deteriorated and requires renovation.
FY02 Request: $344,700
3 YR Estimate: $344,700
ISRP Preliminary Review Comments:
Response needed. Reviewers were not convinced that the falls were an obstruction; benefits to fish were not adequately demonstrated. Has this been a recommended action from the Clearwater Focus Group? The response should provide material (perhaps including additional photos) that shows the natural falls are or are not an obstruction. If it is a demonstrated problem, the response should describe the options of blasting. This project was proposed in the High Priority Review and has been adjusted since then.

The reviewers were impressed by the fact that 5 of the marked steelhead did surmount the falls (and no evidence exists that all or most of the 13 that used the tunnel could not have gone over the falls instead if the tunnel were absent). Also, the photos indicate that the falls pose less of a fish passage problem than other falls that steelhead surmount. If water were not diverted by the tunnel and instead went over the falls, the falls might be even more passable than it now is, depending on the volume involved. It is also possible that the tunnel structure diminishes the passability of the falls in other ways. The applicant should consider removing the tunnel if it is a potential obstruction. The proposal should discuss the positive selective pressure exerted by the falls on the fish population.

A review of the site by hydrological engineers and biologists experienced in fish passage issues is recommended, followed by a re-submission of a prescribed solution to the problem if it remains of concern.

We were informed that there is not consensus among managers regarding the need to renovate the tunnel, and request clarification, especially on how this might affect the

upcoming chinook and coho supplementation efforts (one of the NPT satellite release sites will be above Selway Falls). Letters of support from agencies and tribes concerned with this area should be provided.

2. Project ID: 28017

Monitoring the Selway Falls renovation project for passage of spring chinook salmon and steelhead
Sponsor: Pacific Northwest National Laboratory
Subbasin: Clearwater
Short Description: The Selway River anadromous fish Tunnel is being considered for renovation; To fine tune the fishway and manage it optimally, swimming behavior within the fishway will be monitored using electromyogram (EMG) radio transmitters.
FY02 Request: $134,350
3 YR Estimate: $413,992
ISRP Preliminary Review Comments:
Response needed. Provide clear evidence that this site is an impassable obstruction. Radio-tagging of steelhead may help determine if the falls are a problem. Perhaps tagging should be done with tunnel shut on and off. This project might provide objective (apolitical) data to analyze the situation. On the other hand, agencies may view this study as unnecessary because one suggests there is a problem and the other suggests there isn't. We request that PNNL solicit letters of support from the managing agencies.

Radio tagging work may provide some information, but will be confounded by the effect of tagging, where fish may drop downstream afterwards. Knowledge of where in the tunnel problems may be occurring may be improved with tagging work, but perhaps a visual inspection inside the tunnel (or by camera) can provide adequate information. Details of the tunnel design and current condition were lacking in this and the previous proposal. Other options for fish passage may be possible.

Are these kind of efforts going to lead to behavioral models that can apply to different situations? EMG work elsewhere (Klickitat and several others, including Fraser R.) should now provide sufficient information to assess the degree of difficulty in obstructions without repeating the tagging process every time. Provide a summary of the EMG work in relation to the physical characteristics of this site (e.g., gradient, velocity, height of barrier, flow during passage timing). Also, please clarify why this work would take three years when the field studies should only require one season.

Project ID: 28020

Nez Perce Tribe Harvest Monitoring Program
Sponsor: Nez Perce Tribe Department of Fisheries Resource Management
Subbasin: Clearwater
Short Description: The objective is to develop and implement a comprehensive, biologically sound monitoring program for the Nez Perce Tribe for the Columbia River Basin and tributaries.
FY02 Request: $326,646
3 YR Estimate: $1,030,006
ISRP Preliminary Review Comments:
Response required. The data currently being collected may be inadequate to estimate harvest with the precision required. This information is fundamental to stock assessment. Adequate catch statistics are essential to stock assessment and management. Why, then, is this project split out, from the hatchery M and E? In this proposal, no biological information would be collected. Refine the proposal to correct this weakness. Questions remain about the consistency, quality, and reliability of the data that are being collected until more detail on the catch monitoring plan is provided.

Catch reporting should be a condition of licensing, but licensing is not an issue here since this project deals with Treaty Reserved Fishing Rights. Perhaps a first step should be to institute a process of licensing of the harvest, followed by design of a reporting template (form). Please provide the suggested catch reporting form. The cost of licensing should support the cost of the catch monitoring, and probably should be much lower than what is reported here. Support may be justified for Task A: Consult Columbia River Intertribal Fish Commission (CRITFC) Biometrician to establish and implement monitoring strategies for the NPT for the Columbia River Basin and tributaries. We request a report from the biometrician that recommends a catch monitoring strategy, to be followed by a resubmitted proposal after peer review of the report. The proposal embodies the right approach, provided appropriate statisticians are available to design the sampling. Measuring catch per hour for the fishers contacted is fairly easy, but making valid estimates of fishing effort (number of fishers and how many hours they fished in total) will be very hard. An output of the project should be calculations of the degrees of uncertainty of the estimates. Please indicate how this uncertainty will be calculated.

The terms, TAC and DRFM, found in the proposal are not defined.

Project ID: 28021

Lower Clearwater Habitat Enhancement Project
Sponsor: Nez Perce Tribe
Subbasin: Clearwater
Short Description: Acquire, protect, enhance and restore a total of 10,000 acres of wildlife habitat on the Lower Clearwater River emphasizing habitats that will enhance recovery opportunities for listed fish stocks and/or NPTH Hatchery restoration efforts.
FY02 Request: $1,428,000
3 YR Estimate: $10,026,000
ISRP Preliminary Review Comments:
Response needed. The priority of sites to acquire or the process to do this was not provided. This should fall out of a watershed assessment. The detailed watershed assessment and prescription must be conducted, then provide a plan that addresses the high priority habitat issues first. The latter must clearly indicate priorities for rehabilitation work and outline land tracts desired, and why, i.e., justification is required that is related to fish production benefits. The link of this project (see 199706000 and 199608600) with priorities within the Clearwater system is also required (indicate priority within the subbasin, and expected benefits), along with the tie to a comprehensive monitoring and evaluation program (see comments on 28004) to document benefits.

The proposal, field tour, and presentation showed that project has great merit in terms of habitat abuses that it will focus on remedying. The project must be based on a comprehensive watershed assessment.

At least 4 literature sources shown in text (Bryson, Nowak, Statler, and Stovall, all these on p 25) are not listed in the reference section.

The review group suggests that, future terrestrial monitoring efforts be made compatible with one of the national terrestrial survey efforts. Perhaps an intensification of the National Resources Inventory survey sites and data collection protocols would serve the region well. See the Proposals #200002300 and #200020116 and ISRP reviews in the Columbia Plateau. Also, see the ISRP's general comments on M&E in other NPT habitat restoration projects and the ISRP's programmatic comments on M&E at the beginning of this report.

Project ID: 28024

Dworshak Dam Impacts Assessment and Fisheries Investigation
Sponsor: Idaho Department of Fish and Game and Idaho Office of Species Conservation
Subbasin: Clearwater
Short Description: Evaluates the impacts of drawdowns and routine dam operations on resident fish populations. Also, determines ways to minimize entrainment losses of fish into Dworshak Dam.
FY02 Request: $468,801
3 YR Estimate: $1,085,801
ISRP Preliminary Review Comments:
Response needed. The project history, review of past accomplishments, and (field visit) presentation with visual aids helped greatly in assessing the project with regard to objective 1, remedying kokanee entrainment. The strobe-light method is working at the one turbine intake where testing is being done. It will now be tried also on "multiple" turbine intakes, and if successful there, expanded to testing for coverage of reservoir outlets. Outlet screening with strobe lights presents difficult problems. Dealing with kokanee loss over the spillway, where greatest loss occurs in years of high flow, is envisaged for further in the future and is briefly mentioned in the proposal. The long-range, stepwise plan seems reasonable. The project's reports and prospects for one peer-reviewed publication are shown. Progress toward reducing kokanee entrainment seems to be moving very slowly; efforts should be taken to accelerate it. If the bulk of the fish loss is over the spillway, why wait for future years to begin even elementary contemplation of how to reduce that loss?

Objective 2 on bull trout entrainment is entirely new, and the proposal provided no clear justification for initiating it. More background information, including a better review of the pertinent literature would be needed. This objective would be more appropriate as a separate project and indeed is proposed under Project 28022. Objective 2 should be dropped from the proposal.

Objective 3, collection of basic data for analyzing productive capacity of the reservoir for kokanee, seems reasonable in approach and methods.

What does "implement a prospective lake fertilization plan" (Task 3a, budget p. 10) mean? What process is being followed to assess if and how fertilization might be implemented?

The mention of "bioenergetics and or production models" is too vague. Proposers should detail the status of that effort if continued funding for that task is anticipated.

It is unclear why US Army Corps of Engineers is not funding this, and what USACE has funded in past and continues to fund.

Project ID: 28025

Potlatch River Watershed Restoration
Sponsor: Latah Soil and Water Conservation District
Subbasin: Clearwater
Short Description: To restore ecosystem functions, restore degraded habitat and protect natural habitat within the Potlatch River watershed in Idaho thereby improving water quality and quantity throughout the drainage.
FY02 Request: $505,125
3 YR Estimate: $1,302,625
ISRP Preliminary Review Comments:
Response needed. The proposal was poorly written. The project might be fundable in part to do a watershed assessment. The proposal is very unfocused, with very weak ties to potential fish benefits. The proposal neither states that watershed assessment was done nor shows that it will be done, though a fleeting reference to the term exists. Watershed assessment should be done before the project, which should then derive from that assessment. On p. 20, "comprehensive watershed planning" is one of the project goals (the other two are doing BMPs and monitoring water quality and fish habitat); it is not clear that watershed assessment is included. The proposal's only mention of watershed assessment is among the list (p. 23) of tie-ins with the Clearwater Basin Summary: the 3rd item is to develop "watershed assessments at multiple scales." It is implied several lines previously that this is part of the proposal, but "watershed assessment" appears nowhere in the *work plan*. In 2002, the project should be funded only for performance of the watershed assessment needed for preparing a later proposal that deals with planning and work.

The proposal contains much helpful background on the fish populations. Assessments of instream habitat have also been done, but the results are not described. The proposal's deficiencies seem to indicate inadequate understanding of some basic aspects. A few details: Table 2 displays channel stability, flow alteration, and habitat alteration in a column headed "Pollutants" (which they are not), several literature sources referenced in text are not in the reference list, the meaning of "(p IV-C-3)" on page 8 is unexplained, and about half of Figure 7 is blacked out. More importantly, the discussion of "Limiting Factors to Fish and Wildlife Species" is vague and confusing, especially in that (1) for many of the factors mentioned, it is not said *how* they affect fish and wildlife, and (2) sometimes human activities that indirectly affect fish and wildlife are misconstrued as limiting factors; it is the specific conditions caused by those activities that should identified as the limiting factors (and the human activities should be identified as *causes* of those limiting factors). On page 19, "large stream size of the Clearwater River mainstem" is shown as one of the four "principle [sic] factors" constraining steelhead. It is not at all clear how large stream size would constrain the population.

Task 2.2 (p. 28), on modifying channelized stream implies a need for restoring "miles" of habitat lost through channelization along railways, logging deck, and roads. It says sites are being reviewed to "identify a channelized stream segment that can be modified in a relatively low-cost fashion to return the stream to original channel." This could

undoubtedly help restore habitat, but why just one piece of stream when apparently so many parts of the stream are needy in this respect?

If an initial survey was done in 1995, then the proposal should contain data and discussion of impact of the 1996 flood. Streamflow gaging stations should be established throughout the system.

The review group suggests future terrestrial monitoring efforts be made compatible with one of the national terrestrial survey efforts. Perhaps an intensification of the National Resources Inventory survey sites and data collection protocols would serve the region well. See the Proposals #200002300 and #200020116 and ISRP reviews in the Columbia Plateau.

Project ID: 28029

Restore Lawyer Creek Habitat Targeting Steelhead and Chinook Salmon
Sponsor: Clearwater Economic Development Association
Subbasin: Clearwater
Short Description: Restore physical and biological process in seven miles of anadromous and resident fish habitat in the Lawyer Creek watershed based on reach prioritization determined from a watershed assessment.
FY02 Request: $342,750
3 YR Estimate: $1,895,311
ISRP Preliminary Review Comments:
Response needed. This is a thorough, well-written proposal. It cites a watershed analysis, although watershed analysis is still being done in the Lawyer Creek drainage (see Project 28004). This proposal refers to 28004, though not by number. Why does it not refer to the Clearwater Focus Group?

This project, like some others of the sort, is not justified. It may be that the lower 7 miles of Lawyer Creek is suboptimal habitat, and that the steelhead are declining, but these are not sufficient reasons to spend this money here, especially when BPA funds are limited and sooner or later someone will be held accountable for wise or unwise allocation of resources. The real need is for an overall analysis of all the tributaries, then, based on that, to do a triage, showing where to start on priority areas, and what areas to omit.

Regarding technical aspects, the proposal includes some sound approaches and up-to-date techniques, e.g., reference to naturally stable reaches of the same and nearby creeks for design of channel restoration, use of native plant materials collected locally, and liberal installation of LWD with recognition that it is an interim measure meant to tide the stream over until natural LWD replacement takes over. Some of the other techniques, especially those involving “hard” architecture and/or forms that seldom or never occur in nature, are of questionable value for fish and even could harm them. Questionable devices (and/or the ways they will be used) include J-hook vanes, rock weirs, rock cross vanes, and “upstream V-notch log weirs.” The latter term seems to confuse what might be called an upstream log-V weir (a log weir in the plan-view shape of a V having its apex

upstream) with a so-called V-notch weir, which could be either a streamflow-gauging device or a common habitat device: a straight, transverse log having a small notch to create a concentrated waterfall. Although both kinds of habitat device are built in creeks, neither mimics nature. Logs don't butt up against each other in upstream V-form when they fall naturally into streams, so the former device may do little for fish. Logs do lodge horizontally across streams in nature, and these often benefit fish tremendously, but nature puts no V-notch in them, and cutting a notch exposes more of the log's top to air and makes it rot faster. Maximal, cost-effective benefit for stream and riparian health and for fish and wildlife will derive from concentrating on LWD placed in forms that tend to occur naturally, and omitting most of the hard and artificial designs.

A major M&E program is planned in the project, and the proposal has much good information on it. However, the plan calls for monitoring to start "following project implementation," which would appear to mean after construction. A control reach will be included in the sampling, but just one control reach is not enough, and monitoring of treatment and control reaches should begin several years before any construction or other treatment starts. More detail on sampling design is needed in the proposal.

Reviewers did not see evidence of adequate knowledge regarding the measurement of fish abundance. The proposal's plan to conduct "two-pass depletion electrofishing" is inadvisable. A depletion method of estimation using only two passes would give unreliable results. At least three passes are needed in the depletion method. Alternatively, a two-pass *mark-and-recapture* method could be used. What type(s) of electrofishing gear will be used?

Project ID: 28031

Evaluation of Unclipped Hatchery Steelhead Released in the Clearwater and Salmon River Basins
Sponsor: U.S. Fish and Wildlife Service
Subbasin: Clearwater
Short Description: Determine if outplanted unclipped steelhead: (a) return at higher rates than fish from other artificial propagation programs, (b) spawn where intended, and (c) increase the natural juvenile population.
FY02 Request: $484,993
3 YR Estimate: $1,038,029
ISRP Preliminary Review Comments:
Response needed. The reviewers are not convinced that this approach will address the question. Confounding of supplementation by harvest is involved. A stock assessment structured with a decision analysis framework would indicate that when a population is operating below recruitment replacement, harvest should be halted, as should all other sources of mortality, where possible. A short-term supplementation exercise might then be considered on an experimental basis as a last-ditch attempt to maintain the remnants of the wild population, in hopes that conditions for survival in the ocean improve, or that other means to offset the reduced productivity can be quickly implemented. The sponsor would like to quantify the effect of harvested, clipped steelhead by releasing unclipped

hatchery fish, but this project is unlikely to do so, and will confound other analyses. See comments on 28032 and 199706000 (and throughout) related to stock assessment needs.

Reviewers are concerned that deleterious impacts to wild steelhead might occur from the 700,000 unclipped hatchery fish released in the year 2000, and any subsequent releases. Overall the proposed evaluation is supported as high priority.

Additional information is requested regarding Objective 3 (determining if juvenile population densities change). What would be the ability of the work described to detect change? Additional details better describing possible outcomes and their interpretation are needed.

Project ID: 28032

ASSESSMENT OF A-RUN STEELHEAD POPULATIONS IN THE CLEARWATER RIVER BASIN
Sponsor: Nez Perce Tribe
Subbasin: Clearwater
Short Description: An assessment of the current status and performance of the A-run steelhead population in the Clearwater Subbasin (i.e., population abundance, productivity, spatial structure, and diversity).
FY02 Request: $686,800
3 YR Estimate: $1,723,690
ISRP Preliminary Review Comments:
Response needed. The reviewers seriously question whether much of this project is needed, especially for the intended 5-10 years. Beyond Objective 2, monitoring spatial structure and genetic diversity, the rest is questionable because it is redundant with NPT proposals for steelhead assessment and habitat work (inadequate planning) in Lapwai, Big & Little Canyon creeks, and because the millions being spent to restore habitat in those lower Clearwater tributaries seem to be producing few results. The need is for comprehensive evaluation of current habitat conditions (especially temperature) through all the tributaries used by A-run fish, and only then an evaluation of what gains are possible and where best to begin (as is being done by the Yakama Nation in the Yakima basin, with EDT).

The work on genetic structuring (microsatelite analysis) should be omitted. Probably enough has already been done. And what if the project were to find a difference? How would that information be applied? At least one reviewer was unconvinced that A run and B run are distinct; the apparent distinction may only be a function of ocean growth and survival. Why wouldn't there have been gene flow in the past? Likewise, regarding straying rate, the radio tagging work should be saved for later, and investigators should get on with the task of stock assessment and stock status and towards developing an evaluation program. What about resident rainbow trout (predominantly males?)?

More precise and meaningful usage of the carrying capacity concept is needed. The proposal does little to quantitatively identify limits to production. It could be used to

justify a hatchery approach (see comments on 28031), but hatchery fish may be even less unlikely than wild fish to survive in these streams (perhaps due to temperature limitation), unless special, intensive selection of broodstock were done, or major habitat improvements were to unfold rapidly.

This is a purportedly required study, touted among other proposals as their monitoring and evaluation component. As it stands, it will not provide the M&E values expected. To evaluate habitat improvement or hatchery effectiveness, monitoring in more than one tributary would be required, and with adequate assignment of treatment and control streams. At best, it might provide some much needed stock status information.

There was no mention of altered ocean conditions in the proposal as the leading cause for the sudden, dramatic, and persistent decline in returns through the 1990s, a pattern that was not consistent with the timing of what was listed as the potential causes (dam operation, habitat degradation, overfishing).

The spawner-recruit relationship proposed for examination in the project has been attempted by other steelhead investigators. The authors need to examine those works carefully. The life stages should be split into two stanzas, the density-dependent freshwater phase (spawner to smolt) and the marine phase (smolt to adult). Freshwater production (Ricker a) can be examined in terms of smolts per spawner as a function of the number of spawners.

Variability in parr sampling efficiencies and in parr densities, particularly at low escapement levels and with variable distribution of redds, will frustrate attempts at comparison and should be discarded in favor of comparative snorkel surveys of adult abundance in key index monitoring sites within the study stream (i.e., fish fence present) and among others. Alternatively, and preferably, the comparison among other streams should be based on smolt yield in treated and untreated watersheds.

For adult enumeration, consider electronic (Logie) counters that remain functional at high flows. These require a civil structure or crump weir, or preferably, a purpose-built structure. Adult sampling for biological data can still be incorporated in the design; the population need only be sub-sampled to determine age structure, etc.

For smolt estimation, a full-counting structure with random sampling is best, but may not be possible due to high flows. Two RSTs are required (or two locations: one for marking, the other for recapture, each with as many RSTs as necessary to obtain an adequate recapture rate). See Dempson and Stansbury (1991).

Project ID: 28033

Monitoring and evaluating coho salmon reintroduction in the Clearwater River Basin
Sponsor: Nez Perce Tribe, Department of Fisheries Resources Management
Subbasin: Clearwater
Short Description: Monitor and evaluate the results of the reintroduction of coho salmon to the Clearwater River Subbasin so that operations can be adaptively managed to optimize hatchery and natural production, sustain harvest and minimize ecological impacts.
FY02 Request: $676,752
3 YR Estimate: $1,882,256
ISRP Preliminary Review Comments:
Response needed. This large proposal is very well written.

Several items of concern remain:

1. What are the drawbacks of releasing unclipped fish to assess harvest (p 33)?
2. Objective 3 includes assessment of possible introgression with chinook (to what extent does this occur?) but does not seem to address how that might be done (p 42),
3. Some chinook work is proposed (p 42 – 46) that seems out of place or is a typographical error.
4. The issue of possible deleterious effects on chinook and steelhead (p 47) is only weakly addressed.
5. This project does nothing to address the reasons for the coho decline.

Project ID: 28041

Dworshak Zooplankton Entrainment
Sponsor: Nez Perce Tribe
Subbasin: Clearwater
Short Description: Apply hydroacoustic technology to monitor zooplankton density and depth distribution at the Dworshak Dam forebay and apply this information to outlet selector gate operation to minimize or avoid zooplankton entrainment.
FY02 Request: $434,463
3 YR Estimate: $1,182,926
ISRP Preliminary Review Comments:
Do not fund; a response is not warranted. This endeavor needs much more pre-proposal background research of literature and better interaction with those doing other related Dworshak work. That research might well indicate futility of trying to regulate Dworshak Reservoir withdrawals to significantly reduce entrainment of zooplankton. The proposal fails to indicate any review of basic scientific studies about diel vertical migration of zooplankton; much review of such literature, which is extensive, would be warranted. Several local reports concerning studies on Dworshak reservoir itself were referenced in the proposal text, but none of them was listed in the proposal's reference section (which was empty). More basic literature might reveal that diel zooplankton migration is commonly so rapid and extends so far vertically as to require hourly or more frequent change in draw-off level to avoid their entrainment. This might be difficult even if the dam's outlet structures had been built for draw-off at many elevational increments over

the depth of water that zooplankton traverse—and even if dominant competing requirements for water of special temperature (necessitating draw at certain levels) did not exist. The Dworshak rule curve is already extremely complex. Questioning of the presenters indicated that structural and prior-need constraints would likely prevent the draw-off-level flexibility needed to cope with diel migration of zooplankton. If the prospects for managing the draw-off for the intended purpose are not good, studying the zooplankton as outlined would have no value. Sponsor should more thoroughly research zooplankton ecology, and if reasonable prospect of successful management is then seen, submit a revised proposal in a future year.

Project ID: 28042

Timing and location of spawning by pure and introgressed cutthroat trout in the North Fork Clearwater River
Sponsor: Nez Perce Tribe
Subbasin: Clearwater
Short Description: The goal of this project is to precisely identify spawning areas and accurately determine the timing of spawning for pure and introgressed westslope cutthroat trout using state-of-the-art radio telemetry systems.
FY02 Request: $311,878
3 YR Estimate: $937,698
ISRP Preliminary Review Comments:
Do not fund; a response is not warranted. The project emphasizes performance of a technique (EMG radiotelemetry) but lacks adequate investigational design and management ties. In its current form the work would neither answer the introgression question nor aid in reducing the impacts of non-native salmonids. Project PI's are very active researchers and leaders in EMG telemetry, but the proposal is lacking in population and genetic considerations that form the heart of the project and the questions it is attempting to address.

Previous studies have established that hybridization between westslope cutthroat trout (WCT) and introduced rainbow trout (RBT) is widespread in the drainage, and that some pure WCT still exist there. Therefore, WCT are obviously spawning with RBT, and three related types of fish must be present: pure WCT, pure RBT, and hybrids (perhaps also others, as mentioned below). The sponsor proposes to radiotelemetrically track WCT and hybrids to find out where and when they spawn "since the mechanisms that limit the potential for hybridization between cutthroat trout and rainbow trout include aggressive spawning behavior and spatial separation between spawning sites." No clear justification emerges from that statement. It is not stated why only WCT and hybrids—and not also RBT, the source of the hybridization—would be tracked. Most importantly, it is not stated how the study's results could be applied, i.e., what management the hoped-for findings could lead to that might remedy the hybridization threat to pure WCT populations.

Project ID: 28043

Crooked River Ecosystem Assessment at the Watershed Scale
Sponsor: Nez Perce Tribe Fisheries/Watershed
Subbasin: Clearwater
Short Description: Assess watershed conditions and develop and prioritize watershed restoration activities
FY02 Request: $131,213
3 YR Estimate: $601,213
ISRP Preliminary Review Comments:
A response is needed. The proposal makes a logical case for the need for the EAWS assessment of the Crooked River and for the development of criteria to prioritize watershed restoration alternatives. Once a final set of implementation actions is identified, and before the time and expense of the NEPA preparation occurs, the proposed implementation plan should be reviewed by an independent scientific group.

Dredge mining legacy identified as one of the major limiting factors in the Crooked River for summer/spring chinook and steelhead. Bull trout and westslope cutthroat trout occur in the river's upper reaches. Dredge legacy is all in the lower section (a little in the middle section). How much consideration has been given to rehabilitating the dredge areas, like the ISRP observed in Granite Creek in the North Fork John Day River? Large-scale and expensive restoration efforts in these highly degraded systems are probably generally unwarranted, unless specific historical and biological information can be used to justify the action in a specific location through a predicted strong positive response from the target salmonid species.

The EAWS assessment and the prioritization criteria should include allow an assessment of how critical reclamation of the dredged areas are to steelhead and chinook production in the Crooked River system. In turn, this will provide direction for the suite of proposed future activities and give insight into the scale and expense of restoration alternative in the Crooked River system.

The review group suggests that future terrestrial monitoring efforts be made compatible with one of the national terrestrial survey efforts. Perhaps an intensification of the National Resources Inventory survey sites and data collection protocols would serve the region well. See the Proposals #200002300 and #200020116 and ISRP reviews in the Columbia Plateau.

Project ID: 28045

Evaluating stream habitat using the Nez Perce Tribe Fisheries/Watershed Watershed Monitoring and Evaluation Plan
Sponsor: Nez Perce Tribe Fisheries and Watershed
Subbasin: Clearwater
Short Description: WME will implement habitat surveys and fish snorkel stations in order to characterize quantity and quality of available spawning and rearing habitat and will evaluate stream response to watershed restoration and/or management activity.
FY02 Request: $381,108
3 YR Estimate: $1,190,708
ISRP Preliminary Review Comments:
Response needed. The Watershed Monitoring and Evaluation Plan would be implemented by the Fisheries/Watershed Department to evaluate habitat quality and water quality in all streams throughout the Mountain Snake Province where the Nez Perce Tribe has ongoing or proposed watershed restoration projects. Department staff would also monitor "fish metrics" (species, age class, and size range) in the lowest reach of each monitored stream.

The proposal states that "this extensive data collection effort would support the effort to validate the Ecological Diagnosis Treatment model (EDT)" and "much of the subbasin scale restoration recommendations developed by the FWP will be based on the EDT model". However reviewers did not see further mention of how that might occur, or of the staff that would be involved, in this or any other proposal currently being reviewed in the Province.

Most of the reviewers have been involved in the past in efforts similar to that proposed (the US Forest Service GAWS program, for example) where a set of standardized habitat attributes was monitored over large spatial and temporal scales in an attempt, in part, to use those attributes in lieu of, or as a surrogate for, fish abundance data. Those programs quietly terminated after several years, leaving behind mountains of data but little else to remember them by. In the view of the panel, there is a strong likelihood that the proposed project would have a similar fate.

Reviewers have been involved in some very fruitful habitat-based study, such as the Habitat Quality Index in Wyoming, where combinations of physical/chemical stream attributes were developed to predict trout abundance. However that work was successful because it focused on establishing which biological factors were indeed determinants of fish abundance in that environment.

Reviewers are concerned by the perceived amount of separation here between habitat restoration staff and the fish monitoring staff to which they are "tiered." Although responsibility for evaluation should lie outside the on-ground habitat projects, the skill of habitat restoration personnel depends on their having strong working knowledge of what the fish require. They must continually increase that knowledge by being personally involved, seeing what aspects of habitat management worked and what did not. Please address reviewers' concern that this plan would widen, not narrow, the knowledge gap by

failing to improve the staff's understanding of limiting factors. Also, are not fish the currency of success, especially where the habitat is largely underseeded?

Project ID: 28046

Impacts of Salmon Carcasses on Chinook Salmon and Watershed Restoration in Subbasins of the Clearwater River
Sponsor: Nez Perce Tribe Fisheries and Watershed
Subbasin: Clearwater
Short Description: We propose to study critical first steps in evaluating the effects of MDN on inland watersheds in the Clearwater River Basin where recent subbasin summaries have determined that salmon numbers are low and nutrient limitation exists.
FY02 Request: $179,002
3 YR Estimate: $756,502
ISRP Preliminary Review Comments:
Response needed. The Proposal described its relationship to projects like this in the innovative solicitation, but does this duplicate those efforts?

The study design needs to be defined and reviewed prior to re-submission. A research-level proposal on the role of marine-derived nutrients within the Clearwater sub-basin is described. The key personnel have no experience in this field or in stream trophic dynamics, according to their listed qualifications, but the presentation was reasonable within a rapidly emerging field of study. They would do well to partner with one of the many groups that are now providing research on salmon carcasses, including the BPA-funded projects which they list – they must provide supporting documentation. Nutrient limitations and excesses exist within the sub-basin, but these were not listed – a review of this data is required before proceeding. In addition, they need to consider the use of salmon carcasses placed in the fall and the difficulty in controlling nutrient levels with that approach versus the addition of inorganic N and P strategically placed in the spring and summer growing season, at pre-described target levels based on flow, stream size, and background levels. Research is now underway to compare these approaches (carcasses versus nutrient pellets, and a new approach using carcass analogs is in development)– perhaps they should await these results. In British Columbia, the addition of inorganic nutrients is now a standard rehabilitation tool in coastal streams, and Interior resident trout streams (and lakes) but untested in the Interior anadromous areas.

Some indication of the availability of carcasses for this study is required. Apparently, in past years hatchery returns were insufficient to meet brood stock needs, let alone harvest and escapement requirements, as well as carcasses for streams (although some spent broodstock carcasses may be available, these may be questionably enough for the watershed or perhaps even experimentation).

The proponents need to consider the key response variable, which is smolt yield. All of the other detailed analysis are redundant in an implementation project as this should be; research is in process or completed by research groups elsewhere. Of interest are the in-stream responses by fish in this area of the Columbia R. (trend monitoring of fish size, growth, and number) and the recruitment response. The latter is measured as the natural

logarithm of the number of smolts produced per spawner as a function of the number of spawners, in treatment and control streams.

The stable isotope work may provide interesting research information, but is superfluous to work already in progress and not required in an implementation project. Also excessive even at the level of site monitoring for response trends is the periphyton and invertebrate monitoring, and even that is not as important to this study as the water quality monitoring. Before and after plus seasonal (spring summer and fall) monitoring of periphyton and macroinvertebrates as proposed will provide little additional information at high cost. Some monitoring of trends in periphyton and invertebrates may be useful to monitor at least visually during the experiment. All of the changes at these lower trophic levels will be reflected in the fish response, if any. Likewise, the extensive use of GIS seems overkill, and not subject to rigorous statistical evaluation (no design was provided), although a map-based description of nutrient levels in streams in general may be useful. A well-designed nutrient experiment will show no change in water quality since the nutrients are taken up immediately and transferred through the aquatic trophic levels to fish.

Respond with a new design, please, indicating whether a carcass approach (if available) or inorganic nutrient approach will be considered, and indicate how and where it will be applied and tested. Please base the design on information on nutrient levels in streams of this area, where production is not limited by other major factors (i.e., indicate that food supply is limiting growth and production). A mesocosm approach in the initial stages may be informative, followed by pilot scale studies in smaller tributaries. Show the connection to other related studies in the Columbia, and include letters of support.

Project ID: 28047

Restore and Protect Red River Watershed
Sponsor: Nez Perce Tribe Fisheries Watershed
Subbasin: Clearwater
Short Description: Restore and protect the Red River Watershed for the benefit of both resident and anadromous fish using an overall watershed approach. Restoration and protection efforts will be done cooperatively with the Nez Perce National Forest.
FY02 Request: $199,567
3 YR Estimate: $770,962
ISRP Preliminary Review Comments:
Response needed. This is a proposal to conduct watershed analysis (actually EAWS), then plan remedies for problems revealed by the watershed assessment. Judging by the scheduled budget, most of the watershed assessment and planning will take place in 2002, 2003, and 2004. The construction/treatment phase is to begin in 2004 and last at least through 2006. M&E is proposed for 2005 and 2006 (however, monitoring should start before construction, so as to enable comparison of pre- and post-project conditions). It would be better to complete the watershed assessment and planning under this proposal— watershed assessment in 2002, prescription of remedies in 2003, project planning and reporting in 2004, omit construction/treatment for the time being, and then come back in the next cycle (2005-2007) with a new proposal for the

construction/treatment phase, based on what was found out during in the 2002-2004 cycle. Then the proposal for construction/treatment can show proper substance and detail.

It looks as if the watershed assessment is planned for a period of 2 or 3 years, but it would be better to get it done in 2002. If agency personnel are not available to complete the watershed assessment in one year, it perhaps should be contracted out.

Parts of the proposal are difficult to read and interpret. Some problems are overly vague statements; an almost useless map (Fig. 1) that has no scale, no labels, no legend, no indication of compass direction—and no indication even of where the main channel is or where its mouth is; and undefined acronyms and abbreviations (e.g., RPA, BOR, ESU, TMDL, ICBEMP, ERU, ARPA, NAGPRA). Most readers will be unfamiliar with some of these terms. All abbreviations should be defined at first use in the text—as has been done for many others.

General comment for NPT habitat projects: Although M and E linkages ("tiers") are provided in the set of NPT habitat proposals, this proposal and the set of NPT habitat proposals need to demonstrate closer ties to the NPT and other fish monitoring projects in the watershed and province (e.g. NPT projects 1988335003, 199703000, IDFG project 199107300, and the ISS studies). In the long term, fish-monitoring data will be critical in determining the efficacy of the restoration activities. The response needs to describe clear coordination between this proposal, proposal 28045, and the NPT fisheries and other entities' monitoring programs; and demonstrate how data and analysis will be shared between the projects. In addition, see the ISRP's comments on 28045 and programmatic comments on M&E at the beginning of this report. The NPT may want to submit one coordinated response for its numerous habitat projects.

Project ID: 28048

Protect and Restore Crooked Fork Creek to Colt Killed Analysis Area
Sponsor: Nez Perce Tribe Fisheries and Watershed
Subbasin: Clearwater
Short Description: This project will protect, restore, and return critical spawning and rearing habitat using a holistic approach beginning with a comprehensive watershed assessment, which will target restoration projects. Projects coordinated with USFS and PCTC.
FY02 Request: $423,365
3 YR Estimate: $1,557,065
ISRP Preliminary Review Comments:
Response needed. This clearly presented proposal to protect and restore fish habitat in a system of streams is thorough, detailed, and well supported by references. The scheme of tasks, however, needs much reorganization. Most of the tasks shown under the Construction & Implementation Phase really belong in the Planning & Design Phase, and a few of them in the M&E Phase. The Construction & Implementation Phase should include only tasks in which something is built or in which treatments are done. All the tasks look necessary, and it should be easy to regroup them more logically in the revised proposal.

Formal watershed analysis apparently is not finished (USFS started it for Crooked Fork to Brushy Fork drainages; from presentation it sounded about 1/3 complete), and EAWS is proposed within the project, but a wealth of previous analyses of habitat problems (including road and culvert alteration needs) serves as a sound basis for the proposal. Thus, although results from the EAWS should be the basis for the proposal, approving the project as proposed appears to be much more justified than in some other projects where watershed analysis has not yet been done.

General comment for NPT habitat projects: Although M and E linkages ("tiers") are provided in the set of NPT habitat proposals, this proposal and the set of NPT habitat proposals need to demonstrate closer ties to the NPT and other fish monitoring projects in the watershed and province (e.g. NPT projects 1988335003, 199703000, IDFG project 199107300, and the ISS studies). In the long term, fish-monitoring data will be critical in determining the efficacy of the restoration activities. The response needs to describe clear coordination between this proposal, proposal 28045, and the NPT fisheries and other entities' monitoring programs; and demonstrate how data and analysis will be shared between the projects. In addition, see the ISRP's comments on 28045 and programmatic comments on M&E at the beginning of this report. The NPT may want to submit one coordinated response for its numerous habitat projects.

The review group also suggests that future terrestrial monitoring efforts be made compatible with one of the national terrestrial survey efforts. Perhaps an intensification of the National Resources Inventory survey sites and data collection protocols would serve the region well. See the Proposals #200002300 and #200020116 and ISRP reviews in the Columbia Plateau.

Project ID: 28059

Restoring anadromous fish habitat in the Lapwai Creek watershed.
Sponsor: Nez Perce Soil and Water Conservation District
Subbasin: Clearwater
Short Description: The project will implement BMPs on agricultural lands to reduce sediment, nutrients, and stream temperature. In addition, the project will improve low summer flows by installing BMPs for water retention in the uplands.
FY02 Request: $372,060
3 YR Estimate: $961,116
ISRP Preliminary Review Comments:
Response needed. A thorough but lengthy proposal was presented, and the presentation was in conjunction with 199901700. The problem of temperatures, flows, and sedimentation was well defined, and several solutions were recommended, including BMPs, culvert surveys (why was this not part of the watershed assessment?), bridge repair, fencing, and the work includes an impressive component of public education (meetings, tours, newsletters). Questions at the presentation revealed that a thorough watershed assessment within established protocols has not been completed. This must be a priority before progressing further. See M&E comments under 28004 (Lawyer Creek)

which also apply here. In addition, indicate in the response the extent of BMPs implementation planned and completed, and what percentage of the required work this represents, particularly in relation to reductions in negative attributes that will benefit fish. Then indicate how this will be monitored and evaluated, and the level of monitoring (i.e., as positive trends in physical and biological variables, or through more detailed effectiveness evaluation in a paired design). See 199706000 and 199608600. Coordination among participants appeared high, a function of the level of motivation evident from the proposal, the tour, and the presentation. The work and its review could benefit from a clearer statement of priorities and a list of tasks by order of importance and timing of implementation.

The review group also suggests that future terrestrial monitoring efforts be made compatible with one of the national terrestrial survey efforts. Perhaps an intensification of the National Resources Inventory survey sites and data collection protocols would serve the region well. See the Proposals #200002300 and #200020116 and ISRP reviews in the Columbia Plateau.

Project ID: 28060

Assess Stream Quality for Salmonid Recovery in the Lower Clearwater Subbasin
Sponsor: Nez Perce Soil and Water Conservation District
Subbasin: Clearwater
Short Description: Complete a stream health assessment in order to identify priority areas for fish habitat restoration.
FY02 Request: $95,148
3 YR Estimate: $145,648
ISRP Preliminary Review Comments:
A response is needed. Project goal is to complete a stream health assessment in order to identify priority areas for fish habitat restoration using the SVAP protocol – stream visual assessment protocol (NRCS) – in six very small Clearwater mainstem tributaries. The Clearwater Watershed Assessment does not get to the needed resolution on these small streams. An earlier demonstration project in Hatwai Creek has proven to be very effective in engaging local landowners. The initially reluctantly participating landowner in Hatwai Creek realized economic gains to his operation (as well as the predicted biological gains) became one of the project's greatest advocates.

A response is needed to provide additional information on the SVAP method of the NRCS. Additionally, more discussion of how the assessment information will be used to identify prioritized restoration alternatives.

Project ID: 198335000

Nez Perce Tribal Hatchery
Sponsor: Nez Perce Tribe
Subbasin: Clearwater
Short Description: Complete construction and begin operation of Nez Perce Tribal Hatchery supplementation program to assist in the recovery and restoration of non-listed spring chinook and ESA listed Snake River fall chinook in the Clearwater Basin.
FY02 Request: $3,485,000
3 YR Estimate: $10,245,000
ISRP Preliminary Review Comments:
A response is needed. The ISRP remains concerned about and skeptical of this project. Reviewers did not feel that the ISRP's previous questions were adequately addressed in the proposal, specifically, (1) "This project focuses on a largely untested concept on too large a scale", and (2) "the conditions primarily responsible for limiting the resource (the salmon population in this case) be identified, and (3) that it be demonstrated that the proposed project will remove those limiting conditions or circumvent them".

The NPTH has two phases of construction management. These phases are the result of issues arising during the Final Design process. During that process, the NPPC approved construction of a smaller scale, more temporary NPTH program, based on concerns by the ISRP in their FY2000 review. Implementation of the full-scale production program (Phase Two) will be dependent on M&E results from the first phase of the program. Initial production numbers were decreased and facility infrastructure was designed to meet a reduced cost. It is important that the NPTH production remain at the reduced Phase I level throughout this initial review and evaluation period.

The ISRP remains concerned that planning for the hatchery and its M&E include all possible management and response alternatives including termination of the program due to either success or failure in achieving program objectives. A noted in FY00 review, the ISRP recommends that a full and consistent decision tree be developed as the program moves forward. The tree should specify all triggers, including intermediate levels and timelines that if not achieved would forestall Phase 2 construction, or even lead to termination of the program itself. The history of fisheries management in the Columbia River Basin is replete with projects that failed to achieve their objectives in part or even completely. Thus, in spite of the need for this project, and the enthusiasm of its implementers, it would seem prudent to plan for all possible outcomes.

Another lingering concern is that the project focuses on a largely untested concept on too large a scale. We note that Phase I production objectives have been scaled down in response to this concern from the ISRP. Over the last decade, the Basin has entered into 3 substantial programs that were intended to serve as experimental tests of supplementation (NEOH, Idaho, and Yakima projects); but have not yet had time to yield reliable findings. The scientific foundation for the NPT large-scale project has therefore, not been provided. The proposed activities should more directly address or at least circumvent limiting factors to salmon production.

Many of the asserted "innovative" approaches (i.e., NATUREs concept) are presently supported by a small literature base that is limited in both the scale of studies and by the subsequent inferences to overall hatchery practices. In general, the approaches have not been proven to yield greater survival to adulthood of released fish than standard practice. Project advocates also claim that they will not impact populations in nature by keeping within natural "carrying capacities." Carrying capacity has proven difficult to measure and altering density at any population level with propagated fish will no doubt influence the population in nature. On the positive side, it appears the sponsors have undertaken surveys to determine carrying capacity and appear to be undertaking habitat improvement projects to absorb the hatchery-produced fish.

Project ID: 198335003

Nez Perce Tribal Hatchery Monitoring and Evaluation
Sponsor: Nez Perce Tribe Department of Fisheries Resources Management
Subbasin: Clearwater
Short Description: Monitor and evaluate results of the Nez Perce Tribal Hatchery so that operations can be adaptively managed to optimize hatchery and natural production, sustain harvest, and minimize ecological impacts.
FY02 Request: $1,884,430
3 YR Estimate: $6,087,194
ISRP Preliminary Review Comments:
A response is needed. The ISRP remains concerned that planning for the hatchery and its M&E include all possible management and response alternatives including termination of the program due to either success or failure in achieving program objectives. A noted in FY00 review, the ISRP recommends that a full and consistent decision tree be developed as the program moves forward. The tree should specify all triggers, including intermediate levels and timelines that if not achieved would forestall Phase 2 construction, or even lead to termination of the program itself. The history of fisheries management in the Columbia River Basin is replete with projects that failed to achieve their objectives in part or even completely. Thus, in spite of the need for this project, and the enthusiasm of its implementers, it would seem prudent to plan for all possible outcomes.

Does the experimental design for evaluating supplementation at the NPTH have wild/wild control streams, and a hatchery/hatchery line? Is sample design randomized or do they use index sites based on observed presence?

Project ID: 198740700

Dworshak Integrated Rule Curves/M&E
Sponsor: Nez Perce Tribe
Subbasin: Clearwater
Short Description: Refine the Dworshak Rule Curve Evaluation Model, use the model as a tool to help identify appropriate integrated operation (Integrated Rule Curve), and develop a comprehensive long-term monitoring and evaluation plan for Dworshak Reservoir.
FY02 Request: $201,291
3 YR Estimate: $541,291
ISRP Preliminary Review Comments:
Do not fund; no response is called for. The reviewers concerns are similar to those expressed in the FY2000 review. In addition, evidence was presented that reservoir operation is driven by the BiOp and by the power system emergency, rather than being regulated by a rule curve. It will not be useful to undertake the proposed efforts (which were not clearly expressed) to adjust a process that is already burdened by too many conflicting influences. No significant improvement is likely.

Project ID: 199303501

Enhance Fish, Riparian, and Wildlife Habitat within the Red River Watershed
Sponsor: Idaho County Soil and Water Conservation District
Subbasin: Clearwater
Short Description: Restore physical and biological processes to create a self-sustaining river/meadow ecosystem using a holistic approach and adaptive management principles to enhance fish, riparian, and wildlife habitat and water quality within the Red River watershed.
FY02 Request: $561,000
3 YR Estimate: $1,666,000
ISRP Preliminary Review Comments:
Response needed. This project performs three managements: relocating artificially straightened (ditched) parts of a creek into previous natural meanders, planting riparian vegetation, and excluding domestic livestock from stream banks. In addition, it has large research and communication/education components. The need for the three elementary managements is obvious and well understood in salmonid habitat restoration. They have been practiced and evaluated elsewhere for years (which the proposal does not recognize and discuss). Most of the project's research and communication effort is warranted. The research should be reduced to basic M&E, and biological M&E deficiencies should be corrected. The project's essential, restorative results could be achieved for much less money.

Habitat projects under the Fish and Wildlife Program must be based on watershed assessment. The proposal refers to certain assessments to support need for the project, e.g., "a landscape scale assessment (USDA Forest Service, 1998)." However, the project has gone on for some 8 years without the requisite watershed assessment, which is not planned for completion until 2003 ("An Ecosystem Analysis at the Watershed Scale, p.

10). The EAWS should be done sooner, and the project should be funded only for the EAWS until that component is finished.

The project is vastly overdone and expensive, and lacks appropriate focus on biological aspects. Obviously, a great deal of thought and effort regarding physical aspects have gone into the physical and "communication" aspects thus far, and into the 2002 proposal and supplementary materials. The critical assumptions listed on p. 27 are particularly good (and they could be expanded to deal more directly with ecological processes), however, it is evident in the project's objectives, tasks, and methods that most of the critical assumptions will not be inadequately investigated.

The project's research is developing information that is interesting in its own right and may represent a contribution to the field of stream morphology, but its applicability to fish and wildlife restoration is unclear. The physical aspects, though necessary in principle, are overdone. The potential of such elaborate measurements for solving Columbia/Snake River fishery and wildlife problems is not evident; physical study should be scaled down. The project's communication/education component is also out of proportion to the need; major public education seems unwarranted because the study area is remote and the meadow reach under study does not represent the steeper types of stream that prevail in the drainage basin. Reporting of results via normal agency and professional-journal channels would fill the communications need.

The project is particularly lacking in biological concept, planning, direction, participation, and analysis. These shortcomings are especially notable in view of the project title's key words: "Enhance Fish, Riparian, and Wildlife Habitat," which imply biological emphasis. The project goal is described as restoring "natural physical and biological processes," but, except for revegetation, the processes discussed in the proposal are almost solely physical. Also, little in the way of biological *process* (e.g., survival, growth, reproduction, behavior) exists in the M&E plan. The project needs guidance from ecologists.

Meaning of the elaborate physical measurements to fish and wildlife habitat is mentioned only very generally in the proposal and is hardly referenced; the only primary (non-gray) source on fish or wildlife habitat is Bjornn & Reiser (1991), and it is referenced only with respect to gravel size for spawning chinook salmon. In other words, the project's connections with ecology of fish and other animals are not truly described. No primary source on ecology is referenced in the proposal's section on technical and scientific background (and indeed even none on physical processes in streams). What kinds of habitat are to be restored? How much of each type is expected to result? How do fish and wildlife of various kinds use the types of habitat that will be created? What quantitative gain in fish and wildlife production can be expected to result, and via what processes?

Before work is extended to private land up- or downstream from the present project area, the project cost per unit of stream length should be greatly reduced. Restoring the stream to its pre-channelization course (a natural condition to which wild fish are adapted) is undoubtedly beneficial, but the cost of doing it should be nowhere near that of the present

project. The $3,065,909 cost to date for the 2.55-mile post-restoration channel is $1.2 million per mile (it would be $3.19 million per mile for the 0.96 mile of channel gained, but benefit derives also to the rest of the study area). By any measure, the per-mile cost has been exorbitant, especially for this small stream.

How representative of important problems in the drainage basin is the project area? The proposal does not establish this.

The project devised a large, intricate, portable weir system "to facilitate transfer of river flow from existing channel alignment into the newly constructed alignment" (p. 39). The proposal states that the "portable weirs are extremely effective at allowing flow transfer to take place with minimal turbidity discharge," and that they "also improve construction efficiency by allowing work such as backfilling and bank shaping to continue behind the weirs without risk of erosion or deposition." However, no data are provided to support the implication that the weirs reduce downstream sedimentation to an extent that is biologically significant. Reviewers viewed photos of the weirs during the site visit, noted that the devices seem a major expense, and question whether building and operating these devices is cost effective from the standpoint of the fishery resource.

The M&E design appears to depend mainly on detecting trends and does not seem to include adequate experimental control in terms of sampling in similar but untreated reaches of stream. Some of the monitoring for trends has been started after the treatments were done, thus missing pre-treatment data. The section on macroinvertebrate monitoring (p. 36) indicates that one "control reach is included to evaluate natural variability." It is questionable whether one is enough. That section also indicates that macroinvertebrate sampling of riffles will be done in 2001 for the first time; that does not seem timely. No control reaches are mentioned in connection with measurement of fish population response. The proposed measurement of fish habitat response (p. 35) is inadequate. For example, important variables such as features that provide hiding cover are missing from the plan (applicant should consult modern salmonid habitat studies), controls are not included, and the schedule of monitoring for trend seems to have been delayed until after treatment began. Many of these shortcomings apply also to M&E for wildlife. Furthermore, the only wildlife populations being monitored are birds.

The review group suggests that future terrestrial monitoring efforts be made compatible with one of the national terrestrial survey efforts. Perhaps an intensification of the National Resources Inventory survey sites and data collection protocols would serve the region well. See the Proposals #200002300 and #200020116 and ISRP reviews in the Columbia Plateau.

Project ID: 199501300

Resident Fish Substitution Program
Sponsor: Nez Perce Tribe
Subbasin: Clearwater
Short Description: Increase fish harvest opportunities to partially mitigate for anadromous fisheries losses resulting from the "permanent" migration blockage posed by Dworshak Dam on the North Fork Clearwater River.
FY02 Request: $243,355
3 YR Estimate: $1,072,186
ISRP Preliminary Review Comments:
A response is needed. This project needs serious remedial effort and as proposed is not scientifically sound. The project's history of mismanagement persists. Little use is made of the readily available scientific knowledge that could improve project results. Technical soundness and fiscal accountability are at issue. The program's proposals have been of unacceptable quality year after year. The reviewers do not question the need for a fish substitution program; their criticisms involve the way it is being conducted and the ongoing waste of resources.

The proposal is poorly prepared and deficient in content. The "abstract" contains material not elaborated in the body of the proposal. No primary source on limnology is referenced, although knowledge of that subject is sorely needed to conduct the project.

In Sect. 4, the P&D budget, 4 ongoing tasks (1a, 1b, 1c, and 2a) are shown with zero cost (and no matching funds shown elsewhere). In Sect. 5, the Construction/Implementation budget, Task 1a also has zero cost. Zero cost for scheduled activities is incongruous and must be corrected or somehow explained. In Sect. 7, M&E budget, Tasks 1a and 1b coincide with Section 4's Tasks 1a and 1c, respectively. If part of each is actually intended for the P&D phase, then the budget should be divided accordingly.

Sect. 9, item f, Proposal objectives, tasks and methods, is completely inadequate. It merely states an overall objective. The scheme of objectives and tasks shown in the budget sections is not set forth in this item, and no method is shown whatsoever. What are the rationale, sampling design, and technique for each of the budgeted tasks that involve monitoring and/or evaluation of conditions or results? Specifically,

- In Task 1a (identical in Sect. 4 and 7), "Monitor temperature, oxygen, specific conductivity, pH, nitrogen loading, alkalinity, and depth to evaluate water quality and habitat at new fisheries," does this mean in new ponds or in the water supplies intended for new ponds or both? What is the rationale for measuring each of these variables (of what use will the data from each likely be—and why not measures of phosphorus loading, as well)? What is the sampling design for each? What technique(s) will be used to measure each? What were the results from previous years?
- In identical Tasks 1b of Sect. 7 and 1c of Sect. 4, "Monitor and evaluate effects of watershed use on water quality and habitat quality. . .etc.," what will be measured, what is the sampling design, and what are the measurement techniques? What were the results from previous years?

- In Task 1c of Sect. 7, "Monitor fish growth and condition. . .," what is the sampling design, and what are the measurement and evaluation techniques? What were the results from previous years?
- In Task 2a of Sect. 7, "Monitor harvest," what is the sampling design, and what are the measurement and estimation techniques? (See later discussion of this task's inordinately high budget.)
- In Task 1a of Sect. 6 (O&M), involving maintenance of "habitat quality to maximize potential carrying capacity and fish harvest," what will be the methods of maintenance, how would habitat quality be affected, and how would this maximize carrying capacity?

The oral presentation spent much time on statutory authorizations directing resident fish substitution but gave little information on operations and results. Questioning of personnel during the field tour (at Tunnel Pond) and after the oral presentation yielded some detail. The program has 3 ponds and plans to build 6 to 12 more. Two of them are small reservoirs (not seen on the field tour) built by BIA in 1994, in unsuitable form, at unsuitable sites, and with unsuitable water supply (runoff containing excessive nutrients from agricultural surroundings). They are poor habitat for trout. The third and newer Tunnel Pond is groundwater-fed and provides better though not optimal conditions for trout. The "put-and-take fishery" program provides for angler harvest by purchasing hatchery-reared rainbow trout of table-food size and stocking them in the ponds.

At Tunnel Pond, the best of the three sites, 2,500 to 3,000 lb of hatchery trout are stocked annually—last year at a size of 0.75 to 1 lb. each (which converts to about 13 or 14 inches). Here, return to the creel has been 84%, stated also as about 2,000 lb. Thus, fewer pounds of fish are harvested than are stocked. This means that conditions in the pond are such that fish growth does not make up for natural (non-fishing) mortality. The pond is either a poor place for trout to grow or for them to survive, or it is poor place for both essential processes. Similar amounts are stocked in each of the other two ponds, and return to anglers is even worse there than in Tunnel Pond. If a pond is sited at a proper water supply, is properly designed and built, and is properly managed, more pounds of trout will be harvested than are stocked—far more.

The difference between harvest rate in Tunnel Pond and the others is consistent with findings elsewhere that better limnological conditions for fish occur where ponds are created not by damming streams but by using a groundwater supply. Damming a stream subjects the resultant pond to the stream's supply of sediment and dissolved nutrients. Excessive algal and other plant growth and consequent dissolved oxygen insufficiency tends to occur in such ponds, mainly because the stream brings phosphorus from uphill land uses that cannot be adequately controlled. In contrast, groundwater- or spring-fed ponds have a water supply from which phosphorus has been filtered, and if human-generated activities are properly controlled on the smaller uphill areas involved, such ponds will maintain good conditions for trout. Such sites should be selected for the program's future ponds. One reviewer suspects the region's geology makes proper sites rare or unavailable. If so, and if ponds can be created here only by damming streams, then curtailment of the program's expansion should be carefully considered. Stream-

dammed ponds will involve major ongoing, costly problems and perpetuation of the project's inefficiency.

Although costs are not central to this scientific review, reviewers felt compelled to raise the issue of costs and benefits on this project. The project operates extremely inefficiently, seen in the light of dollars expended vs. harvest results. The harvest is costing around $30 or more per pound of fish, assuming the FY 2000 expenditure was a bit less than the requested FY 2002 budget. If FY 2002 harvest equals that of FY 2000 (2,774 kg) and the budget remains as proposed, the result will be close to $40/lb. Obviously, costs toward building new ponds contribute to the apparent inefficiency, but those planning and design costs have persisted for years, these and construction costs would continue under the present plan, and they could not be amortized to bring total cost per pound down to a reasonable level for many, many more years, if ever.

The impending FY 2002 inefficiency could be cut substantially by eliminating Task 2a, harvest monitoring. This task need be done only at several-year intervals (consult a biometrician on design frequency). To date, it has amply shown that the ponds perform poorly, and it can be discontinued for the next several years. In any event, the reviewers question the annual budget for harvest monitoring, especially as no design for sampling and estimation is shown. At $97,342, catch estimation is scheduled to cost over 7 times as much as the $13,500 for stocking the fish. If the 3 ponds yield the same 6,103-lb harvest as in FY 2000, the scheduled cost of monitoring this would be $15.94/lb.

The sponsor could likewise discontinue Task 1c (budget page 7), monitoring of fish growth and condition, until new ponds at built. Such monitoring also need not be done every year. The task's $21,902 would add $3.59/lb to the cost of harvested fish (at FY 2000 harvest rate). This task's budget, if it is justified at all, might well be reduced. The monitoring and analysis designs should be shown.

The proposal should clearly summarize in tables and graphs the results of all of the project's past monitoring.

Project ID: 199607702

Protect and Restore Lolo Creek Watershed
Sponsor: Nez Perce Tribe Fisheries Watershed Program
Subbasin: Clearwater
Short Description: Protect, restore, and enhance the Lolo Creek Watershed to provide quality habitat for anadromous and resident fish. This will be accomplished by watershed restoration projects such as culvert replacement, road obliteration, and streambank stabilization.
FY02 Request: $502,192
3 YR Estimate: $1,924,921
ISRP Preliminary Review Comments:
Response needed. This project has run since 1996, but the watershed assessment is not yet complete. Passage is a limiting factor due to culverts. Needs have been prioritized. Biological results are in NPTH M and E.

In general a very thorough, informative proposal. The long-needed watershed analysis is scheduled to be completed in September 2001. If this is not done, all other project work should be halted until it is, so management can be designed according to WA findings.

The proposal states that bioengineering is the project's approach for stabilizing stream banks. However, Figures 2 and 3 show hard structure (rock rip-rap and a rock current deflector), in other words, the opposite of bioengineering. Rock rip-rap is primarily counterproductive for fish habitat. It usually provides little habitat compared with live vegetation and wood debris, and it prevents natural channel migration. Natural stream channels migrate at a moderate rate, in the process providing fish habitat by such actions as carving bank undercuts, toppling trees into the channel, and recruiting gravel to the bed. The illustrations indicate that the sponsor is constructing so as to lock the channel in an unchanging course.

How many stream miles have been directly benefited by the project since 1996, will be in FY 2002, and are anticipated to be during the projected rest of the project life?

Of what does the consultation in Tasks 1b consist? "Consult" seems a vague term, and the cost of $22,200 seems high.

The reviewers are given to understand that the project's biological results will be evaluated under the NPTH M&E project. The project history states only activities performed, not biological results achieved. The proposal should contain results in terms of fish.

Tasks 3E and 3F involve survey of in-stream structures that were installed in the 1970s-80s to identify and remedy problems. The wording indicates that problem assessment will be on an engineering basis. Biologists should be involved to determine in each case whether there is really any problem for fish—and to make sure that engineering remedies will not cause ecological problems.

Although this proposal describes some M and E linkages ("tiers"), this proposal and the set of NPT habitat proposals need to demonstrate closer ties to the NPT and other fish monitoring projects in the watershed and province (e.g. NPT projects 1988335003, 199703000, IDFG project 199107300, and the ISS studies). In the long term, fish-monitoring data will be critical in determining the efficacy of the restoration activities. The response needs to describe clear coordination between this proposal, proposal 28045, and the NPT fisheries and other entities' monitoring programs; and demonstrate how data and analysis will be shared between the projects. In addition, see the ISRP's comments on 28045 and programmatic comments on M&E at the beginning of this report. The NPT may want to submit one coordinated response for its numerous habitat projects.

The review group also suggests that future terrestrial monitoring efforts be made compatible with one of the national terrestrial survey efforts. Perhaps an intensification of the National Resources Inventory survey sites and data collection protocols would serve the region well. See the Proposals #200002300 and #200020116 and ISRP reviews in the Columbia Plateau.

Project ID: 199607703

Protecting and Restoring the Waw'aatamnima (Fishing)(Squaw) Creek to 'Imnaamatnoon (Legendary Bear)(Papoose) Creek Watersheds Analysis Area
Sponsor: Nez Perce Tribal Fisheries Watershed Program
Subbasin: Clearwater
Short Description: Protecting and restoring the Waw'aatamnima (Fishing) Creek to 'Imnaamatnoon (Legendary Bear) Creek Watersheds Analysis Area by using a holistic approach, based on a completed watershed analysis, is the overall goal of this on-going project.
FY02 Request: $489,300
3 YR Estimate: $1,518,500
ISRP Preliminary Review Comments:
Response. The proposal is generally good. The project has demonstrated an excellent ability to decommission roads, but the proposal should show results in terms of fish for the work done since 1996. The proposal indicates that the projects creeks are included as treatment streams under Project 199809802, Salmon Supplementation in Idaho Rivers, so reviewers assume it will be monitored biologically as such; is this so? Is physical monitoring of stream variables covered under Project 28045? Continue culvert replacement, road obliteration.

According to the oral presentation, creation of instream habitat for salmonids, namely pools, will be done in addition to road obliteration and culvert modification, although this habitat work is not mentioned in the proposal's section on objectives, tasks and methods. As described in the presentation, more biological understanding seems to be needed in planning and designing the habitat restorations, and this work should be better described. It was stated that rock structures would be used to create pools. Log (LWD) structure did not seem to have been considered, and no awareness was demonstrated that log/LWD structures generally provide much better pool habitat for salmonids than rock-formed pools do. None of the proposal's references is a primary literature source on structural

habitat for salmonids; the proposal should incorporate comprehensive information from such sources.

General comment for NPT habitat projects: Although M and E linkages ("tiers") are provided in the set of NPT habitat proposals, this proposal and the set of NPT habitat proposals need to demonstrate closer ties to the NPT and other fish monitoring projects in the watershed and province (e.g. NPT projects 1988335003, 199703000, IDFG project 199107300, and the ISS studies). In the long term, fish-monitoring data will be critical in determining the efficacy of the restoration activities. The response needs to describe clear coordination between this proposal, proposal 28045, and the NPT fisheries and other entities' monitoring programs; and demonstrate how data and analysis will be shared between the projects. In addition, see the ISRP's comments on 28045 and programmatic comments on M&E at the beginning of this report. The NPT may want to submit one coordinated response for its numerous habitat projects.

Project ID: 199607705

Restore McComas Meadows/Meadow Creek Watershed
Sponsor: Nez Perce Tribe Fisheries Watershed Program
Subbasin: Clearwater
Short Description: Protect and restore critical riparian/stream habitat in Meadow Creek thru streambank stabilization, riparian re-vegetation, road decommissioning, culvert replacement/repair, and native plant restoration.
FY02 Request: $573,832
3 YR Estimate: $1,221,301
ISRP Preliminary Review Comments:
Response needed. All of these should be better tied to the NPTH M and E project to monitor fish response. See 199706000 and 199608600. How many miles of stream has this project benefited? How many stream miles will be benefited by the time the project is finished?

General comment for NPT habitat projects: Although M and E linkages ("tiers") are provided in the set of NPT habitat proposals, this proposal and the set of NPT habitat proposals need to demonstrate closer ties to the NPT and other fish monitoring projects in the watershed and province (e.g. NPT projects 1988335003, 199703000, IDFG project 199107300, and the ISS studies). In the long term, fish-monitoring data will be critical in determining the efficacy of the restoration activities. The response needs to describe clear coordination between this proposal, proposal 28045, and the NPT fisheries and other entities' monitoring programs; and demonstrate how data and analysis will be shared between the projects. In addition, see the ISRP's comments on 28045 and programmatic comments on M&E at the beginning of this report. The NPT may want to submit one coordinated response for its numerous habitat projects.

Project ID: 199608600

Clearwater Focus Program
Sponsor: Idaho Soil Conservation Commission
Subbasin: Clearwater
Short Description: Complete subbasin assessment develop subbasin plan, coordinate public review and input, and coordinate implementation projects
FY02 Request: $103,626
3 YR Estimate: $310,878
ISRP Preliminary Review Comments:
Response needed. What watershed assessment protocols are being followed? How complete is the subbasin assessment? Much data was revealed to be missing in the set of project presentations; e.g. details of roads, landslide etc. in subwatersheds. The PAC has broad membership and could be a lead in the Subbasin Planning effort, including M&E, which is missing here. See 199706000 – comments apply.

Project ID: 199706000

Clearwater Subbasin Focus Watershed Program - NPT
Sponsor: Nez Perce Tribal Fisheries/Watershed Program
Subbasin: Clearwater
Short Description: Manage and implement a comprehensive system to coordinate multiple jurisdictions, agencies, and private landowners within the Clearwater River Subbasin. These efforts will protect, restore, and enhance anadromous fisheries habitat.
FY02 Request: $218,000
3 YR Estimate: $702,000
ISRP Preliminary Review Comments:
A response is needed.

1. Complete all watershed assessments according to standard protocols and format and clearly define methods, with references.
2. Indicate the project connection to the monitoring and evaluation plan at the subbasin scale.

These are similar comments to the previous review, although evidence of a cooperative approach was strong and team players appear effective in focusing restoration approaches – there is much of that to do. Help from a contract biometrician must be obtained in planning the overall M&E as well as stock assessment work.

This project and 199608600 represent the management structure for coordination of projects within the Clearwater sub-basin. Listing projects by type reveals the following:

Project type	Number	
management	2	
assessment	5	
Hatchery	10	6 are for M&E, supplementation
Habitat	25	19 are rehabilitation, including 3 BMPs

The proposed stock assessment projects include harvest monitoring, and the distribution and status of bull trout, Pacific lamprey, A-run steelhead, and westslope cutthroat. As a stock assessment plan, it appears limited in scope. A Sub-Basin assessment plan that focuses on ecosystem structure and function with fish as the primary indicator of ecosystem health is recommended. The Subbasin Summaries provide the trend information available. The Focus Group(s) must utilize that information to improve upon an assessment plan. It will require monitoring of key indicator stocks for trends in abundance, distribution, and survival. It does not require measuring all things in all places. Survival status must include both freshwater and marine life stages of salmonids. The stock status and recruitment information becomes the guide for prioritization of management decisions on harvest, as well as projects on hatchery programs and habitat rehabilitation. Develop a stock-status-based framework for management decisions, reviewed and approved by the management agencies involved.

Hatchery and habitat projects must now be treated as management experiments. Thus, projects must contain a connection to a monitoring and evaluation plan. Please refer to ISRP comments contained within habitat rehabilitation projects within this set in the Clearwater, but also those provided in ISRP reviews over the last 3 years, in all sub-basins. Within the Clearwater, consider the list of habitat projects and select treatment and control sites (preferably at random, but this is seldom logistically possibly to subsequently implement in the field). Smolt yield is the recommended response variable for effectiveness monitoring at the watershed scale. Response monitoring within individual projects might rely on other means to assess trends in habitat character or fish presence/absence and utilization, such as, for example, stream temperature (if that was identified as the limiting factor), or by electrofishing or snorkeling in upstream controls and treated areas. Some projects suggested sampling within all trophic levels, or a detailed process-oriented modeling approach. Rarely is that level of investigation relevant, other than in research-level studies. The task of the Focus Group must include coordination of monitoring and evaluation within the basin, with recommendations for the level required in each project.

Habitat rehabilitation projects must be indicate their order of importance. An independent review team has difficulty in recommending projects without a clear indication of what local managers consider to be the key problems and solutions. The Focus Group needs to report on or develop a process of setting priority to watershed assessment and rehabilitation plans, and convey this message to reviewers.

The other tool that has been proposed to assist the fish populations of the Clearwater Sub-Basin is hatchery production. There are arguments for and against this approach, but central to this debate is an evaluation of its effectiveness as a tool in protecting or enhancing wild production in listed or threatened stocks. Thus, the same control and treatment approach at the watershed scale and with wild smolt monitoring is required.

Most hatchery plans are for supplementation (also called intervention) work. The Focus Group must carefully weigh the advantages of these short-term projects (or what should be only short term, i.e. one generation, if truly supplementation) and the interaction of

that work with habitat rehabilitation work. Will they increased benefits in wild smolt yield that will hopefully be measured at treated (habitat rehabilitation) sites be distinguishable from the effects of supplementation (if indeed there are positive benefits to wild fish by supplementation as proposed)? Currently, a confusing set of monitoring and evaluation projects is proposed to assess supplementation. What does the Focus Group recommend, and why?

We are suggesting in the above that the Focus Group play a larger role in subbasin decision making and planning. We do this based on the abilities that were displayed in their project proposals, field tour, and presentations, that suggested a strong potential exists.

If the group cannot adequately perform the coordinating role suggested in the above towards recommendations and priorities for habitat rehabilitation, hatchery projects, and M&E, then please more clearly explain what the Focus Group means by "comprehensively coordinate multiple agencies", and suggest where that coordinated approach we suggest is provided otherwise. In other words, if not you, then who?

Project ID: 199901400

Little Canyon Creek Subwatershed-Steelhead Trout Habitat Improvement Project
Sponsor: Lewis Soil Conservation District
Subbasin: Clearwater
Short Description: Reduce sedimentation to improve instream habitat in Lower Little Canyon Creek and the lower Clearwater River, and improve upland water storage by implementing best management practices for sediment reduction and water retention.
FY02 Request: $236,500
3 YR Estimate: $649,500
ISRP Preliminary Review Comments:
Response needed. The response needs to list the BMPs, convince us that the BMP's are appropriate and tie to an assessment, prescription and restoration plan. Provide these plans. One of the BMPs appeared to be catchment ponds, but another project talked about removing ponds to avoid evaporation. Indicate how much has been done and how much needs to be done.

This is a thorough proposal for a watershed project of a type that should be encouraged and supported. The biological monitoring strategy (Task 5b) is not presented in enough detail. Under "*Method*," the plan (which is not a method) is to contract a survey of fish density and riparian habitat during the project's first summer (2002) and prepare a report for "peer review," comparing results to the findings of Kucera et al. (1983) so as to relate project accomplishments. The prospects for meaningful results from this are poor. The reliability of inferring a trend from two data points is low. Monitoring, using consistent methods, should be started at least a year or two before the project's first year, then continued for at least 6 years after project completion. The survey methods are not described.

See reviews for 199901500 and comments in 199706000 and 199608600 and respond in relation to this project.

Project ID: 199901500

Restoring Anadromous Fish Habitat in Big Canyon Watershed
Sponsor: Nez Perce Soil and Water Conservation District
Subbasin: Clearwater
Short Description: Implement agricultural and fish habitat Best Management Practices in the Big Canyon watershed with the goals of reducing sediment and nutrient delivery, improving water retention in uplands, reducing stream temperature, and restoring riparian function.
FY02 Request: $193,452
3 YR Estimate: $600,356
ISRP Preliminary Review Comments:
Response needed. Project staff demonstrated enthusiasm for working with private landowners in the watershed to implement best management practices for agriculture and ranching. Please provide a summary of the number of contracts entered into in the years 2000 and 2001 as part of this program, and a descriptive list of the BMPs implemented in those contracts and the acreage involved for each BMP.

An ongoing concern of reviewers is being able to attribute improvements in soil and water management to fish and to fish habitat; the proposal does not show evidence that this issue is satisfactorily resolved. Stream temperature monitoring (goal IV, objective 2) might provide valuable information. Please describe where the six dataloggers will be placed and discuss how the data will be used (comparison with existing data, ability to compare before/after treatment and in paired, treatment-vs-control subwatersheds, etc.). Also, provide additional detail about how BMP effectiveness (goal IV, objective 1) will be assessed in terms of measured variables other than stream temperature.

Project design must be made specific. Please remedy vague statements, such as that for Goal IV, Obj. 1, Task A, which says: “collect…data…as appropriate.” What constitutes appropriateness? Another example is “selected sites.” How will the selection be done?

A stronger monitoring approach would be for project staff to engage more actively in the design of the fish population monitoring conducted under proposal 99901600. We suggest that staff provide a response demonstrating that such fish population monitoring will help assess gains of projects 199901500 and 199901600. In addition, see the ISRP's programmatic comments on M&E at the beginning of this report.

Project ID: 199901600

Protect and Restore Big Canyon Creek Watershed
Sponsor: Nez Perce Tribal Fisheries Watershed Program
Subbasin: Clearwater
Short Description: This project will protect, restore and return critical spawning and rearing habitat using a ridge top to ridge top approach, based on a completed watershed assessment
FY02 Request: $355,000
3 YR Estimate: $1,588,300
ISRP Preliminary Review Comments:
Response needed. Reviewers encountered many difficulties in reading this proposal, the most troubling being repeated reference to Lapwai Creek in many of its sections. For example, the section on relationships to other projects begins "within the Lapwai Creek watershed" and fails to mention the NPSWCD Big Canyon project 199901500 with which this project is closely associated. Please clarify and submit a revised proposal.

This project has been underway for 3 years at a cost of about $280K. The proposal shows virtually no ties to anadromous or resident fish. The sole tangible product is a watershed assessment, completed in August 2001. Please provide a copy of that assessment as a portion of this response. Reviewers will be interested to see how limiting factors are addressed for fish, especially steelhead, and how activities are prioritized to target critical preservation and or restoration.

Continuation funding of about $600K/year is requested for the following on-the-ground activities: replace 3 culverts, obliterate about 10 mi. of road/year, and build 2 mi. of fence. Please describe how those activities were selected via the watershed assessment process, and how they will significantly improve fish production in Big Canyon Creek.

Please describe in detail the M&E design and methods for assessing fish population responses in “surveyed streams” (Goal 4, Objective 1, Tasks B and C). Describe the system of treatment and control streams and/or reaches to be used. Exactly how will the electrofishing and snorkel-counting be done? How will the density estimates of juvenile chinook salmon, steelhead trout, and associated fish species be calculated (name an appropriate standard method for each different situation, and reference a literature source on it)? How will it be determined that the samples of fish lengths, weights, and scales from juvenile fish are “representative”? Describe how the spawning surveys for steelhead will be conducted.

General comment for NPT habitat projects: Although M and E linkages (“tiers”) are provided in the set of NPT habitat proposals, this proposal and the set of NPT habitat proposals need to demonstrate closer ties to the NPT and other fish monitoring projects in the watershed and province (e.g. NPT projects 1988335003, 199703000, IDFG project 199107300, and the ISS studies). In the long term, fish-monitoring data will be critical in determining the efficacy of the restoration activities. The response needs to describe clear coordination between this proposal, proposal 28045, and the NPT fisheries and other entities’ monitoring programs; and demonstrate how data and analysis will be

shared between the projects. In addition, see the ISRP's comments on 28045 and programmatic comments on M&E at the beginning of this report. The NPT may want to submit one coordinated response for its numerous habitat projects.

Some of the sources referenced in the proposal's text do not appear in the reference list.

Project ID: 199901700

Protect and Restore Lapwai Creek Watershed
Sponsor: Nez Perce Tribal Fisheries Watershed Program
Subbasin: Clearwater
Short Description: This project will protect, restore and return critical spawning and rearing fish habitat using a ridge top to ridge top approach, based on a completed watershed assessment.
FY02 Request: $436,600
3 YR Estimate: $1,669,900
ISRP Preliminary Review Comments:
Response needed. According to the proposal, a watershed assessment was to be completed for this project in August 2001. Please provide a copy of that assessment as a portion of this response.

Continuation funding of about $600K/year is requested to do the following on-the-ground activities: participate in replacing a bridge, replace 3 culverts, obliterate approximately 10 mi. of road/year, and build 2 mi. of fence. Replacing the bridge will be of undoubted benefit to fish; for the other activities, please describe how they were selected via the watershed assessment process and how they will significantly improve fish production in Lapwai Creek.

Also, the reviewers are interested in why these latter activities were identical to those proposed for Big Canyon Creek, yet the two watersheds appear significantly different.

Please describe in detail the M&E design and methods for assessing fish population responses (p. 30, Objective 8, Tasks B and C). Describe the system of treatment and control streams and/or reaches to be used. Exactly how will the electrofishing and snorkel-counting be done? How will the density estimates of juvenile chinook salmon, steelhead trout, and associated fish species be calculated (name an appropriate standard method for each different situation, and reference a literature source on it)? How will it be determined that the samples of fish lengths, weights, and scales from juvenile fish are "representative"? Describe how the spawning surveys for steelhead will be conducted.

General comment for NPT habitat projects: Although M and E linkages ("tiers") are provided in the set of NPT habitat proposals, this proposal and the set of NPT habitat proposals need to demonstrate closer ties to the NPT and other fish monitoring projects in the watershed and province (e.g. NPT projects 1988335003, 199703000, IDFG project 199107300, and the ISS studies). In the long term, fish-monitoring data will be critical in determining the efficacy of the restoration activities. The response needs to describe

clear coordination between this proposal, proposal 28045, and the NPT fisheries and other entities' monitoring programs; and demonstrate how data and analysis will be shared between the projects. In addition, see the ISRP's comments on 28045 and programmatic comments on M&E at the beginning of this report. The NPT may want to submit one coordinated response for its numerous habitat projects.

Project ID: 199901800

Characterize and quantify residual steelhead in the Clearwater River, Idaho
Sponsor: U.S. Fish and Wildlife Service
Subbasin: Clearwater
Short Description: Describe unsuccessful hatchery smolts released into the Clearwater basin. Assess potential negative interactions with wild steelhead and recommend modifications to hatchery practices to produce more effective smolts and reduce hatchery/wild interactions.
FY02 Request: $101,950
3 YR Estimate: $134,950
ISRP Preliminary Review Comments:
Response needed. This project should not be funded unless a much better proposal is submitted—one that has a sampling design truly addressing the residualism problem, as noted in FY00 comments. The present proposal fails to adequately address problems identified during the FY00 review. As pointed out in the FY00 review, the proposed project is unlikely to contribute significantly to our understanding of residualism. Also, the investigational design may include the wrong sampling dates (too late, i.e., residual hatchery fish have displaced wild parr, then died or left) and has no treatment-and-control design. Perhaps the Clearwater River is the wrong place to address this question.

Only gray literature is referenced. More fundamental, peer-reviewed papers on the subject exist and should be discussed in the proposal. For example, the major Yakima system work on residualism by McMichael and others is not referenced.

Project ID: 200002800

Evaluate Status of Pacific Lamprey in the Clearwater River Drainage, Idaho
Sponsor: Idaho Department of Fish and Game and Idaho Office of Species Conservation
Subbasin: Clearwater
Short Description: To determine distribution, population status, and life history information for Pacific Lamprey in the Clearwater River subbasin.
FY02 Request: $144,550
3 YR Estimate: $464,550
ISRP Preliminary Review Comments:
Fundable. No response needed. The methods, which are reasonably well detailed, are aimed at evaluation of background information for various life history stages of the animal. This proposal addresses a need for information in a systematic way. It provides good scientific/technical background and justification, and appears to be well coordinated with other projects. The proposal requests "full" ($160K) funding through FY 04 and then reduced funding for FY05. However, this study should be complete in no more than three field seasons (00 – 02) with some wrap-up on the end. At the presentation it was

noted that a UI grad student will be on the project. If they have not yet started it might be reasonable to go another year, but this is approaching a point where the Council and CBFWA may want to consider if the project is too expensive for the information gained.

Project ID: 200003400

Protect and Restore the North Lochsa Face Analysis Area Watersheds
Sponsor: Nez Perce Tribal Fisheries/Watershed Program
Subbasin: Clearwater
Short Description: Protect and Restore the North Lochsa Face Watershed by working within an overall watershed approach, based on comprehensive studies of the analysis area. The overall goal of this project is to increase anadromous fish populations.
FY02 Request: $285,835
3 YR Estimate: $996,862
ISRP Preliminary Review Comments:
A Response is needed. This is a road obliteration project on a massive scale. The proposal and presentation were well done. The project is well organized. Mass wasting is primary contributing factor to sedimentation input. Justification for project location was a good addition to the presentation and should be included in other presentations. The NPT is in a lawsuit against FS over an EIS counting joint NPT/FS road obliteration and improvements as mitigation for proposed building of new FS roads; the NPT position is that BPA funding should not be used to promote FS roading and logging. The proposal referred to this controversy so vaguely that readers who lack background on the issue could not possibly understand what was written.

The project's Objective 4, M&E for "watershed, stream and aquatic [fish and other organisms inferred]" is "tiered to a proposal being submitted by our program," which surely refers to Project 28045. However, this planned coordination should be made more specific, especially with regard to monitoring of biological results—a programmatic monitoring matter.

General comment for NPT habitat projects: Although M and E linkages ("tiers") are provided in the set of NPT habitat proposals, this proposal and the set of NPT habitat proposals need to demonstrate closer ties to the NPT and other fish monitoring projects in the watershed and province (e.g. NPT projects 1988335003, 199703000, IDFG project 199107300, and the ISS studies). In the long term, fish-monitoring data will be critical in determining the efficacy of the restoration activities. The response needs to describe clear coordination between this proposal, proposal 28045, and the NPT fisheries and other entities' monitoring programs; and demonstrate how data and analysis will be shared between the projects. In addition, see the ISRP's comments on 28045 and programmatic comments on M&E at the beginning of this report. The NPT may want to submit one coordinated response for its numerous habitat projects.

Project ID: 200003500

Rehabilitate Newsome Creek Watershed - South Fork Clearwater River
Sponsor: Nez Perce Tribe Fisheries Watershed
Subbasin: Clearwater
Short Description: Protect and enhance Newsome Creek Watershed for the benefit of both resident and anadromous fish using an overall watershed approach. This project is a cooperative project between the Nez Perce Tribe and the Nez Perce National Forest.
FY02 Request: $287,732
3 YR Estimate: $1,424,334
ISRP Preliminary Review Comments:
A response is needed. This is a road decommissioning and culvert remedy project that includes possible stream channel restructuring to remedy dredge mining damage. The latter objective is laudably planned to be abandoned if a feasibility study shows that option to be warranted. The proposal is extremely well written, so logically organized and clearly put that it made review a pleasure. A major additional need in project design is for all of the activities to be explicitly coordinated with the NPTH M&E project to monitor habitat and fish response. The channel modification study, plan, and site should be independently reviewed by a team of geomorphologists before it is decided what to do.

General comment for NPT habitat projects: Although M and E linkages ("tiers") are provided in the set of NPT habitat proposals, this proposal and the set of NPT habitat proposals need to demonstrate closer ties to the NPT and other fish monitoring projects in the watershed and province (e.g. NPT projects 1988335003, 199703000, IDFG project 199107300, and the ISS studies). In the long term, fish-monitoring data will be critical in determining the efficacy of the restoration activities. The response needs to describe clear coordination between this proposal, proposal 28045, and the NPT fisheries and other entities' monitoring programs; and demonstrate how data and analysis will be shared between the projects. In addition, see the ISRP's comments on 28045 and programmatic comments on M&E at the beginning of this report. The NPT may want to submit one coordinated response for its numerous habitat projects.

Project ID: 200003600

Protect & Restore Mill Creek
Sponsor: Nez Perce Tribe Fisheries Watershed Program
Subbasin: Clearwater
Short Description: Enhance critical riparian areas through re-vegetation and maintaining the cattle exclusion fence, and replacing/repairing culverts which pose a fish/aquatic barrier to restore quality habitat for chinook salmon, steelhead trout, bull trout and resident fish.
FY02 Request: $105,560
3 YR Estimate: $482,511
ISRP Preliminary Review Comments:
Response needed. This is basic habitat management and protection, with a little rehabilitation to correct bad practices of the past, but it does not seem to be led by a thorough condition assessment and prescription.

As with Project 199607702, how many stream miles have been directly benefited by the project since 1996, will be in FY 2002, and are anticipated to be during the projected rest of the project life? And, of what does the consultation in Tasks 1b consist? “Consult” seems a vague term (talk with some people?); the cost of $53,900 for it seems high.

General comment for NPT habitat projects: Although M and E linkages (“tiers”) are provided in the set of NPT habitat proposals, this proposal and the set of NPT habitat proposals need to demonstrate closer ties to the NPT and other fish monitoring projects in the watershed and province (e.g. NPT projects 1988335003, 199703000, IDFG project 199107300, and the ISS studies). In the long term, fish-monitoring data will be critical in determining the efficacy of the restoration activities. The response needs to describe clear coordination between this proposal, proposal 28045, and the NPT fisheries and other entities’ monitoring programs; and demonstrate how data and analysis will be shared between the projects. In addition, see the ISRP's comments on 28045 and programmatic comments on M&E at the beginning of this report. The NPT may want to submit one coordinated response for its numerous habitat projects.

Blue Mountain Province Proposals

Asotin

Project ID: 199401805

Continued Coordination and Implementation of Asotin Creek Watershed Projects
Sponsor: Asotin County Conservation District
Subbasin: Asotin
Short Description: Coordinate, assess, protect, restore and monitor holistically based fish habitat cost-share programs in Asotin Creek watershed. Continue "grass-root" public and agency cooperation and collaboration for identified priority projects benefiting ESA species
FY02 Request: $297,285
3 YR Estimate: $990,285
ISRP Preliminary Review Comments:
Response needed. This is a well-written proposal that addresses the ISRP’s concerns about providing a comprehensive review of restoration programs within the basin and information on biological benefits. The level of involvement by all stakeholders in the subbasin in the planning and implementation of restoration is impressive and could serve as a model for many other locations in the basin. It is reminiscent of the stakeholder involvement and cooperation we observed in the Hood River and John Day subbasin tours.

The project needs to present some analysis and interpretation of M&E data that justify its past actions and continued plans. As for proposal below (27001), this proposal is short on methods, which are needed especially for the more intensive active restoration projects. The proposal gives a good summary of past activities and accomplishments in general,

but should present some of the M&E data that are being gathered by WDFW. A more detailed analysis of the costs and benefits of the BMPs, such as direct seed, would be helpful. The project proponents seem very committed to a specific set of best actions, which raises concerns about how carefully and critically they monitor outcomes or consider alternative actions.

The ISRP's tour of the Asotin subbasin provided convincing evidence and discussion on the willingness of local landowners to be involved in the CREP and direct seed programs. A major question is whether the expected benefits of the direct seeding program can be realized and whether these benefits will compel local farmers to continue direct seed practices after the initial incentive programs end. The no-till or direct seeding component of the project needs to include or be linked to an economic analysis. Will the short-term incentives result in a lasting change? What is the long-term effect of more intensive use of herbicides with no-till and direct seed? Implementation of the CREP and direct seed incentive programs is presently limited by lack of adequate staffing. Another major question is whether the expected sediment reductions are occurring, and most importantly, whether these can be directly related to changes in salmonid abundance.

Finally, there is a need for stronger justifications for the role of active vs. passive stream restoration in projects. What role are natural processes going to take in the restoration programs, e.g., building stream meanders back into a system? What happens when a big flood arrives and moves the stream out of its newly engineered channel? This and many other projects are restructuring channelized and degraded streams into newly engineered meandering stream channels. A concern of the reviewers is that while these initial steps may help jump start stream rehabilitation and shoreline revegetation, future hydrologic events and geomorphic processes may move the stream out of the newly engineered channel to interact with the larger local landscape and form new unanticipated stream courses. Efforts to retain the stream in the engineered channel, such as reinforcing or riprapping banks run counter to the present desire to reestablish normative process in stream and river corridors.

The field tour and presentation indicated an overemphasis on quick-fix methods of stream channel "stabilization." Excessive reliance on construction of hard (rockwork) structures may be creating an inflexible channel. This prevents another approach of the project, namely, developing riparian vegetation, from performing what should be one of its primary purposes: retarding bank erosion, while letting the channel gradually "meander and return to natural functions" (proposal p. 942). The project could form more and better salmonid habitat (including pools) in the long run and be in closer keeping with stream restoration science by emphasizing natural channel formation (course migration, damped by riparian vegetation) rather than the hard engineering now being used. In the project, riparian vegetation seems to be viewed almost solely as a way to reduce summer temperature; its function as structural habitat for fish and as a binder of streambank soils should also be prominently recognized.

Project ID: 27001

Asotin County Riparian Buffer and Course and Tenmile Creeks Protection and Implementation Project
Sponsor: Asotin County Conservation District
Subbasin: Asotin
Short Description: Implement BMP's to protect and enhance watersheds in Asotin County with ESA listed steelhead and chinook. Utilize cost-share from USDA, WCC and SFRB as match to BPA Funds to implement riparian buffers under the CREP Program (RPA Actions 152 & 153).
ISRP Preliminary Review Comments:
A response is needed. Questions raised above concerning Project 199401805 also apply to this project. This proposal emphasizes buffers for riparian areas but also includes actions to ensure Best Management (BMP) activities on uplands and some instream work. The latter two are barely described in the proposal, though the site visit and presentation indicate that sediment basins and direct seed agriculture are the upland actions. The proposal focuses on administrative tasks rather than on the science to be applied, so is very hard to follow and evaluate. A response needs to focus on the actions to be taken, and especially to develop and justify these for the active instream work, which is barely described. Further, noxious weed control needs explanation and justification. These active management-intensive techniques require M&E to justify their costs, quantify their environmental side-effects, and test their effectiveness. The M&E is limited to a list of tasks, with no detail as to methods or how they will address monitoring and evaluation goals. The relationship to the proposal above (199401805) is not entirely clear, though it may be in the proposal somewhere.

A major question is whether the expected benefits of the direct seeding program can be realized and whether these benefits will compel local farmers to continue direct seed practices after the initial incentive programs end. The no-till or direct seeding component of the project needs to include or be linked to an economic analysis. Will the short-term incentives result in a lasting change? What is the long-term effect of more intensive use of herbicides with no-till and direct seed? Implementation of the CREP and direct seed incentive programs is presently limited by lack of adequate staffing. Another major question is whether the expected sediment reductions are occurring, and most importantly, whether these can be directly related to changes in salmonid abundance.

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Project ID: 27014

Protect and Restore the Asotin Creek Watershed
Sponsor: Nez Perce Tribal Fisheries Watershed Program
Subbasin: Asotin
Short Description: Contribute to an on-going watershed restoration effort by working in collaboration with private and federal entities to address sedimentation into stream and tributaries from road related sources on forested ground within the watershed.
FY02 Request: $121,000
3 YR Estimate: $374,000
ISRP Preliminary Review Comments:
A response is needed. The PI's have the requisite experience in road obliteration.

Project goal is to obliterate 22 miles of a series of old (15-20 yrs) logging roads that parallel the N. Fork of Asotin Cr. The roads in this and upper Charley Creek are significant sediment sources. Area supports significant juvenile steelhead rearing. However, area has high road densities. Another goal is to reduce cobble embeddedness from 35% (current) to 20%. The project needs an M&E component. Such a component may involve basin-level or watershed-level assessments, at least some of which are likely present in other proposals from the subbasin. The Asotin group might want to seriously discuss how to collaboratively monitor results of their work at the larger scales they address. Stream sedimentation is a common theme, and this is assumed to affect fish. Stream listings and de-listings, and water quality sampling done by other agencies, may provide another source of relevant assessment data.

Why 22.04 miles identified for road obliteration (Objective 3), when Objective 2 calls for inventory, assessment, prioritization, and development of implementation alternatives? Defining 22.04 miles for obliteration, seems premature given Objective 2. Objective 4 is inadequate in the present proposal. Rather than describing how M&E (i.e., project effectiveness in this instance) will be conducted and the structural and biological effectiveness of the project assessed, the objective describes a process for defining an

M&E protocol (Task A). The M&E should be specified at this time for review. See the ISRP's general comments on M&E at the beginning of this report and the general comments found in the Nez Perce Tribe's habitat proposals in the Clearwater.

The review group suggests that future terrestrial monitoring efforts be made compatible with one of the national terrestrial survey efforts. Perhaps an intensification of the National Resources Inventory survey sites and data collection protocols would serve the region well. See the Proposals #200002300 and #200020116 and ISRP reviews in the Columbia Plateau.

Project ID: 27009

SSHIAP - Blue Mountain Province
Sponsor: Washington Department of Fish and Wildlife
Subbasin: Asotin and other subbasins in the WA portion of the Blue Mountain Province.
Short Description: Project will provide routed & segmented hydrolayer, and collate and synthesize data on 19 aquatic habitat variables over an estimated 10,000 mi of streams in 2 salmonid-bearing subbasins in the WA portion of this Province.
FY02 Request: $200,000
3 YR Estimate: $260,000
ISRP Preliminary Review Comments:
A response is needed. This proposal is for construction of a georeferenced database on stream habitat and salmonids. What is the priority of this work? The budget is not adequately justified. This is an important program to compile stream habitat data relating to the salmonid resource. The proposal is thorough, clearly presented, and describes a well-established set of methods, referencing pertinent basic literature on the subject. The staff appears highly qualified for and experienced in the work involved.

The proponents need to present data, background, or letters of support indicating that this work is needed and supported by those in the basin to whom the data would be provided. How is this effort different from or better than other data summary or mapping efforts? The presentation of technical methods is long on jargon and short on clear explanation of quality and benefits of the work. The link to benefit to fish and wildlife is not clear. The proponents also should discuss the quality of existing data and whether they are adequate to support the proposed work.

The review group suggests that future terrestrial monitoring efforts be made compatible with one of the national terrestrial survey efforts. Perhaps an intensification of the National Resources Inventory survey sites and data collection protocols would serve the region well. See the Proposals #200002300 and #200020116 and ISRP reviews in the Columbia Plateau.

Project ID: 27002

Assess Salmonids in the Asotin Creek Watershed
Sponsor: Washington Department of Fish and Wildlife
Subbasin: Asotin
Short Description: Evaluate the current productivity and survival rates of anadromous and resident salmonids in Asotin Creek. Develop a habitat based spring chinook reintroduction plan and determine if supplementation is required to sustain a wild steelhead population.
FY02 Request: $316,885
3 YR Estimate: $775,915
ISRP Preliminary Review Comments:
A response is needed. This project provides the biological monitoring for 199401805 and has other objectives. The proposal addresses the goals of evaluating current productivity and survival of salmonids in Asotin Creek, but gives virtually no explanation of how the goals of developing a reintroduction plan for spring chinook or determining if supplementation is required to sustain a wild population of steelhead. One also might well ask if supplementation is compatible with the sustenance of a wild population of steelhead, and some detail as to how data address these questions should be presented. It should be clear how the monitoring data will address the evaluation goals.

The method(s) for performing Task 3a (determine abundance of juvenile steelhead) missing. The proposal references only gray literature, so the scientific background and methods are inadequately presented. The field tour and presentation, however, amply showed that the personnel have the necessary methods well in mind.

The proposal includes development of a plan to reintroduce spring chinook back in to the subbasin (Objective 8). Comprehensive review and data collection plans for adult and juvenile life history life stages for steelhead, spring chinook and bull trout. Plan for adult trapping station at Headgate Park – discussion of the difficulties in steelhead trapping at times of possible peak flows. May lead to a fish ladder with trap, or a combination of permanent structures with temporary seasonal trapping features

We need more information on how the decision of whether to supplement spring chinook would occur. The presentation provided a general discussion of this, but did not provide details of how that decision could be made. How will the collected data on spring chinook be used to determine whether or not supplementation should be used to enhance spring chinook abundance in Asotin Creek? This was not specified in the proposal or presentation. How does one get from the data (population and life history) to determining whether supplementation is needed? The response should more clearly explain how personnel intend to collect data on the key parameters and provide the analysis to inform their primary goals. Language in the proposal suggests that success of recovery is assumed and that the monitoring and evaluation will be used to document this expected outcome. The approach should explicitly be cast as a test and clear criteria for evaluating success versus failure should be stated.

Project ID: 27025

Acquire South Fork Asotin Creek Property
Sponsor: Rocky Mountain Elk Foundation
Subbasin: Asotin
Short Description: Acquire and protect the 8,500-acre Schlee property in southeastern Washington. This shrub-steppe habitat harbors elk and mule deer, while its streams provide a critical link in the Asotin Creek watershed for federally endangered anadromous fish.
FY02 Request: $3,489,500
3 YR Estimate: $3,559,500
ISRP Preliminary Review Comments:
Fundable. The proposal with the added information from the presentation justifies the acquisition of the properties as well chosen and a priority. This proposal is for acquisition of 8500 acres of land, in two parcels, which will extend a current WDFW wildlife area and contribute to goals of maintaining (and perhaps increasing) elk populations. The initial budget has refreshingly little O&M, and plans for M&E are presented in detail. The cost of the land is reasonable and its location and type are very appropriate for the subbasin and its fish and wildlife goals, as well as well in line with criteria for prioritization of purchases.

The review group also suggests that future terrestrial monitoring efforts be made compatible with one of the national terrestrial survey efforts. Perhaps an intensification of the National Resources Inventory survey sites and data collection protocols would serve the region well. See the Proposals #200002300 and #200020116 and ISRP reviews in the Columbia Plateau.

Snake River Hells Canyon Proposals

Project ID: 199700900

Evaluate Potential Means of Rebuilding Sturgeon Populations in the Snake River Between Lower Granite and Hells Canyon Dams
Sponsor: Nez Perce Tribe
Subbasin: Snake Hells Canyon
Short Description: Evaluate the need for and identify potential measures to protect and restore white sturgeon between Hells Canyon and Lower Granite dams to obtain a sustainable annual harvest.
FY02 Request: $290,510
3 YR Estimate: $1,065,510
ISRP Preliminary Review Comments:
A response is needed. This proposal requests continued funding for an assessment of white sturgeon from Lower Granite Dam to Hells Canyon Dam in the Snake River, and to assess the feasibility of achieving a fishery objective of a sustained 5 kg/ha/yr for the NPT. The proposal needs significant remedial work. The ISRP briefing included data from past work, giving helpful overview of sturgeon studies in the Hell's Canyon area over the last several decades. It also provided a sense of the collaboration among appropriate entities to conduct this study. The presenter described a plan over the next 3 years to wrap up Phase II of the study, which in turn leads to an adaptive management

plan (including performing new risk analysis) to develop a revised recovery plan and specific implementation actions. Apparently a data collection effort has existed within the project since 1997; the findings should be summarized in the project history section.

The proposal does not identify how to mitigate for lost production but includes funding in "out years," which is presumably for mitigation. The reviewers continue to believe that this is necessary work but are increasingly concerned about how the work is being conducted and whether appropriate data are being collected for the future assessment and risk analysis.

For example:

1) The proposal refers to a mark-recapture program with 95% confidence bounds but refers to estimating the population "throughout the study area, in individual reaches, and for various size/age classes." The marking and sampling requirements to achieve 95% CI on each of these strata would be very different, but no design or tagging description is included. ISRP cannot assess the mark-recapture program in the absence of a design, and were not provided any historical results.
2) Floy anchor tags are suggested for assessing the retention of PIT tags but retention of external Floy tags would seem less likely than the injected PIT tags. Why were Floy tags selected and what have the results been?
3) The proposal describes the boundary between NPT work and the project conducted by IPC, and comments on a formal data sharing agreement. This is obviously necessary but it does not comment on whether comparable methods are being used. This is likely but should be confirmed due to the need to pool data for the analyses.
4) The proposal acknowledges the difficulty of aging fish older than 20 years. Is there a strategy developed on how to determine these errors … for example, could oxytetracyclene be injected to provide bands on otoliths or bony tissue?
5) At what size/age do smaller sturgeon recruit to the sampling gear? How are these smaller fish being assessed in this project? Is there a concern for the recruitment of sturgeon from areas above Hells Canyon or are these fish marked discretely?

How does flow fluctuation effect sturgeon production? The project should attempt to relate demographic parameters to flow fluctuations; data on that have apparently been collected.

Objectives 5 & 6 require an assessment method or model in order to assess risk and examine mitigation needs. Such an analytical tool is not referred to in the proposal. Is support needed to develop this model and who is responsible for this assessment? When is this assessment due or needed?

Concerning the budget, are tasks 1a and 1b actually different? They have separate budgets but seem the same in the text. Further, Section 9f states that Objective 1 is complete, so why is there a budget for continued work? Is FY 2002 the final year?

Project ID: 27015

Develop Long-Term Management Plan for Snake River (Hells Canyon Reach) White Sturgeon
Sponsor: Idaho Department of Fish and Game and Idaho Office of Species Conservation
Subbasin: Snake Hells Canyon
Short Description: The project will cooperate with the Idaho Power Company and the Nez Perce Tribe to develop a long-term management plan for white sturgeon in the Hells Canyon reach of the Snake River.
FY02 Request: $116,500
3 YR Estimate: $161,500
ISRP Preliminary Review Comments:
Do Not Fund. A response is not warranted. The proposal, asking for support to apply a previously developed model and thereby assess management options for white sturgeon, is inadequate. Lacking is detailed description of the model, its validity, and availability of data needed for the model. It is not clear how the demographic data collected in NPT project 199700900 would be incorporated into the model. The ISRP briefing did not indicate the simulation model involved or the capabilities of the model to assess management options. The proposal seems to be for one IDFG person (a full FTE) to apply this model during a FREC re-licensing application for the Hells Canyon reach of the Snake River; it is not evident why this would be a BPA/NPPC responsibility.

Project ID: 199801003

Spawning distribution of Snake River fall chinook salmon
Sponsor: U.S. Fish and Wildlife Service
Subbasin: Snake Hells Canyon
Short Description: Monitor the status and distribution of Snake River fall chinook salmon, determine if yearling-released supplemented hatchery fish spawn where intended, and gather information on the spawning distribution of fish released as subyearlings and natural fish.
FY02 Request: $174,162
3 YR Estimate: $435,962
ISRP Preliminary Review Comments:
Response requested. This project includes telemetric monitoring of movements of returning adult fall chinook from the three acclimation facilities described in 199801005 and from Lyons Ferry releases. Overall, this is a good proposal with excellent cost sharing and presentation of some data and results. The proposal and presentation addressed previous comments that better description and interpretation of results to date was needed to support continued funding.

A response is requested to two issues: First, the proposal states that "on average we successfully track 30% of all fish tagged to the spawning grounds." This loss of 70% was not noted in the briefing and generates questions about prespawning mortality, spawning locations, tag retention, etc. Are these tags monitored for a period and lost or how would you explain this loss of information? Second, the proposal also refers to adaptive management, but this would imply a planned response or experiment given

certain outcomes of this study. Where is this documented, or was the response to be determined at the time of these results?

A related issue is that the distribution of the fall chinook spawners is not an adequate indicator of supplementation. Presumably, once the fish return to these spawning areas there will be a need to determine whether the population is self-sustaining and what the sustainable harvest rates can be on the population. This is not immediately related to this proposal but should be considered in LSRCP evaluations.

Project ID: 199801004

Monitor and EvaluateYearling Snake River Fall Chinook Released Upstream Of Lower Granite Dam
Sponsor: Nez Perce Tribe
Subbasin: Snake Hells Canyon
Short Description: Monitor and evaluate survival and performance of yearling fall chinook from Pittsburg Landing, Big Canyon, and Captain John acclimation facilities (Project 199801005) to maximize success of the fall chinook supplementation program above Lower Granite Dam.
FY02 Request: $330,241
3 YR Estimate: $1,020,741
ISRP Preliminary Review Comments:
A response is needed. This proposal addresses the M&E portions of the fall chinook assessments related to the acclimation ponds in the NPT area (Big Canyon, Captain John Rapids, Pittsburg Landing). M&E include inspections for fish health, tagging with PIT tags and elastomer tags, and a radio-tracking study to examine the emigration behavior of fall chinook smolts. While this is an on-going M&E program, a response is requested since no results are presented and, consequently, the value of the program is not supported or evident. The project is apparently well integrated with other associated projects but what results are being used and how are these results integrated in assessments?

The discussion of the problem of tag loss and other tag effects in the verbal presentation was not clear. What are the consequences of tag loss or negative effects of tagging on fish? The proposal does not adequate describe and interpret results to date. The presentation was helpful in adding to this, but more summary is needed of what has been learned and problems that might need solution. On-going M & E projects should be present results in the proposals and presentations. For instance, the SAR data should be reported.

The evaluation objective for these programs (this proposal and 199801005 [O&M for acclimation ponds]) is not clear. The program objectives are to achieve de-listing goals for fall chinook, to restore harvest, and to maintain the genetic integrity of the natural populations. The M&E described in this proposal and 199801005 does not seem to adequately address these goals. Are they to be addressed in another proposal (if so identify it), or is there a deficiency identified here?

The methods section presents hypotheses for each objective but then also provides a "corollary" for each also. These read as if they are the alternative hypothesis but this is not what a corollary would normally imply. A corollary follows directly from what is proven, so that if the original hypothesis was correct then a corollary follows obviously from this result or statement.

Project ID: 199801005

Pittsburg Landing (199801005),Capt. John Rapids (199801007), Big Canyon (199801008) Fall Chinook Acclimation Facilities
Sponsor: Nez Perce Tribe
Subbasin: Snake Hells Canyon
Short Description: Supplement natural production of Snake River fall chinook above Lower Granite Dam through acclimation and final rearing of Lyons Ferry yearling and subyearlings at two sites on the Snake River and one site on the Clearwater River.
FY02 Request: $722,000
3 YR Estimate: $2,246,000
Presentation Day, September: 12
ISRP Preliminary Review Comments:
Fundable. This is a hatchery O&M proposal, the M&E for which is in the two above proposals. The target population is Snake River fall chinook. The overall project has clear and measurable biological objectives. The goal of current operations and proposals is to test whether release of acclimated yearling fish reduces straying problems and increases successful return of spawning fish to specific streams and reaches. Both yearling vs subyearling and acclimation (vs direct releases at Lyons Ferry) effects are of interest. Those two M&E proposals reported appropriate results indicating that M&E is underway. Results to date do not suggest a need for radical or short-term rethinking of operations. The program should continue efforts to disseminate results in the form of peer-reviewed publications. Overall Lower Snake program concerns remain, but data are being gathered to address questions of program success. Complete returns for all three acclimation facilities will occur in 2002, at which time results should be thoroughly examined and reported and evaluated.

Project ID: 27016

Evaluate the effects of hyporheic discharge on egg pocket water temperature in Snake River fall chinook salmon spawning areas
Sponsor: Pacific Northwest National Laboratory
Subbasin: Snake Hells Canyon
Short Description: Evaluate the relationships among river discharge, hyporheic zone characteristics, and egg pocket water temperature in Snake River fall chinook salmon spawning areas; evaluate the potential for improving Snake River fall chinook salmon smolt survival
FY02 Request: $154,136
3 YR Estimate: $691,776
ISRP Preliminary Review Comments:
A response is required. This is an innovative and potentially high priority proposal. Summer flow augmentation to benefit downstream migrating fall chinook has been a contentious issue within the basin. The investigators hypothesize that extending the period of stable flows below the Hell's Canyon complex well into the egg incubation period could provide more favorable conditions for incubation and decrease the time required for the eggs to hatch. Earlier emergence would make it possible for juvenile fall chinook to migrate downstream sooner than they currently do and thus enter the Snake River reservoirs earlier in the summer, when water temperatures and stream flows are more beneficial for survival. This change in migration timing could reduce the need for summer flow augmentation. A clear and reasonable line of logic backs the proposal. The investigators are exceptionally well qualified to conduct this work.

A response is needed to ensure that Idaho Power is amenable to extending the period of stable flows below Hell's Canyon. This response could simply be a supportive letter indicating the degree of flexibility expected and the situations that may preclude these changes in late fall flows. The predicted benefits to fall chinook emergence time should be included in the proposal. It would also be advisable for the investigators to verify (or have verified) the emergence timing versus degree-days accumulated for this specific stock if it has not already been determined.

The proposal has excellent cost sharing but other aspects of the budget are less clear. Why are the indirect costs so large given the limited salary dollars (itemize the costs)? What is included under supplies, and why would reporting costs (Objective 5) be so large? The budget information is very scant but could be examined later by a contract administrator.

Project ID: 27010

Snake River Hells Canyon Tributary Enhancements
Sponsor: Idaho Department of Fish and Game
Subbasin: Snake Hells Canyon
Short Description: Protect and enhance important aquatic and terrestrial habitats in Snake River tributaries in the Idaho portion of the Snake Hells Canyon subbasin.
FY02 Request: $101,000
3 YR Estimate: $2,048,000
ISRP Preliminary Review Comments:
Not fundable. A response is not warranted due to the inadequate submittal. Little specific justification of the benefits the projects was provided for Snake River salmon restoration. Were these areas historically significant production areas? How much would the restoration efforts in these areas increase overall Snake River production? Details for accomplishing the objectives are insufficient for judging the soundness or potential benefits of the project.

Imnaha

Project ID: 199701501

Imnaha Smolt Survival and Smolt to Adult Return Rate Quantification
Sponsor: Nez Perce Tribe Department of Fisheries Resources Management
Subbasin: Imnaha
Short Description: Quantify juvenile emigrant abundance, determine smolt survival from the Imnaha River to Lower Granite and McNary dams, quantify smolt-to-adult return rate (SAR) of wild/natural chinook salmon at Lower Granite Dam and back to the Imnaha River
FY02 Request: $466,802
3 YR Estimate: $2,334,258
ISRP Preliminary Review Comments:
A response is needed. This project proposes to estimate survival and arrival times to Lower Snake River dams from near the mouth of the Imnaha. It includes year-round monitoring of fish, with associated construction of a permanent emigrant trap. The project includes a large increase in scope and budget (almost doubled). This is an excellent proposal with strong historical perspective, some data presentation, good rationale explained in section 9c, and timely data management, reporting and availability (both published and integration with FPC).

A response to the following questions is required:

1) The investigators propose to PIT tag 20,000 natural chinook smolts (5600 fall migrants and 14,400 spring migrants). This number of smolts is much greater than previous numbers that have been PIT tagged in this study. What is the likelihood that the greater number of smolts can actually be tagged? What are the consequences for estimating SAR's if the number is not met?
2) The proposal purports to test the assumption that anadromous fish production is limited by out-of-basin factors (pages 2 and 10). It is not clear how the research design and data collection proposed by the investigators will test this assumption. Limiting factors in freshwater would need to be assessed and egg-migrant survival would need to be measured. The investigators do not propose any early life history work, nor do they propose to use data on egg-smolt survival that already may have been collected to test the assumption.
3) Section 8 statement "We consider the SAR measure as the logical step toward effective population status monitoring." By itself a SAR estimate is not an adequate measure of stock performance. SAR is only an explanatory variable in an assessment and needs to be coupled with information on the number of spawners (stock size) and growth rate of the population. However, a time series of SARs could be very informative of the productivity of a stock and its current risk level
4) Clarify the comments on page 2, Section 9. How could SAR measures "reduce uncertainties regarding fish per redd and prespawning mortality rates by comparing observations of fish during spawning ground surveys with the expected number of adult returns from SAR estimates." This would seem to be very course measure of

uncertain value. For example, could you differentiate differences in distribution of spawners from prespawning mortality?

5) Section 9f, Objective 1 is highly dependent upon the estimates of trap efficiency. There is not discussion of methods for this or presentation of past results. How consistent are your estimates of trap efficiency, and how are they incorporated into the estimates of precision about the smolt population size?
6) Section 9f, Objective 4 requires that Section 10 of the ESA Permit 1134 be modified. Who will be responsible for this and when?
7) Section 9f, Objective 5, Assumption A3: Why is it an assumption, and if it is what does "excellent" mean in this context? Shouldn't this detection rate be estimated?
8) Section 9f, Objective 5, Methods describes how the 20,000 PIT target was estimated. This value was based on past CWT studies and is likely to be conservative given that PIT tag detection is likely higher. A future objective then may also be to refine the numbers of PIT tags required in order to reduce the handling stresses on these fish.

Project ID: 27021

Adult Steelhead Status Monitoring - Imnaha River Subbasin
Sponsor: Nez Perce Tribe
Subbasin: Imnaha
Short Description: Quantify adult steelhead abundance, population growth rate, spatial distribution, and genetic stock structure in all tributaries of the Imnaha River subbasin through the operation of adult spawner escapement monitoring facilities
FY02 Request: $1,055,449
3 YR Estimate: $2,564,551
ISRP Preliminary Review Comments:
A response is needed. This is a good proposal, well justified, and provides good supporting background. The investigators propose to install weirs to quantify adult abundance of adult steelhead, obtain demographic data, and collect tissues to analyze genetic stock structure of steelhead in Imnaha River tributaries. The work is an important component of steelhead population monitoring.

A response is needed to address the following issues:
1) A justification for placing weirs on every tributary is needed. The proposal proposes to place weirs in seven tributaries, plus Cow and Lightening Creeks funded under an LSRCP project. The largest tributary (Big Sheep) and the mainstem Imnaha would be included via radio-tracking of steelhead and use of a ratio estimator to determine the total system escapement. However, given the cost and logistical challenges of maintaining nine weirs, why is it necessary to weir each stream? The ratio estimator (assuming that adequate numbers of tags can be applied, 200 proposed) could give an accurate estimate of the total escapement even if only one tributary could be reliably enumerated (as the extreme example). Did you consider a random sample of streams in which to place weirs or a rotating sample of streams between years?
2) To estimate recruits per spawner (and assuming that spawners will now be accurately estimated) a comparable accurate estimate of the recruits is needed. How are recruits to be defined and estimated?

3) The proposal does not provide any comment on collection of biological sampling data on spawners (sex, age, size, etc.). Who is responsible for these data and what will be collected?
4) The distribution of redds by tributary in recent years should be provided in response.
5) The investigators need to provide a more detailed description of how population abundance will be estimated in tributaries not surveyed directly with weirs.

Grande Ronde

Project ID: 199608000

NE Oregon Wildlife Mitigation Project -- "Precious Lands"
Sponsor: Nez Perce Tribe
Subbasin: Grande Ronde
Short Description: Continue operation of the NE Oregon Wildlife Mitigation Project -- "Precious Lands" to protect, restore, and enhance canyon grassland habitats and associated riparian and forest communities to benefit fish and wildlife.
FY02 Request: $439,803
3 YR Estimate: $1,279,903
ISRP Preliminary Review Comments:
A response is needed. Reviewers have previously noted that the project should provide a management plan that states targets, provides rationale for actions to meet these targets, and provides for evaluation of actions. This plan still has not been provided, and its absence generates many problems for evaluating the scientific soundness of the proposed management expenditures. The presentation addressed many questions that the proposal did not address, but much more specific detail is needed, as described below. The project personnel appear to be very well qualified.

The glaring problem with the proposal is the lack of a long-term management plan, which is still not complete after 5 years of project operation. The presentation indicated that the management plan is about 2/3 complete and will be ready for review in Fall 2001, but the objectives of the current proposal should be established in reference to the management objectives. How will the wildlife management objectives for this land be developed? Will objectives for fish be included?

Further, the description of monitoring is sketchy. The proposal is much improved over previous submissions, and does present a good general discussion of monitoring approaches/techniques with emphasis on target species. However, the monitoring and evaluation should be done in reference to a set of measurable objectives that will determine what data are needed. The monitoring should include a strong aquatic component because of the presence of Joseph Creek. Will cultural components be included in monitoring? The cost of monitoring birds seems unreasonably high and annual HEP surveys are not likely needed.

The review group also suggests that future terrestrial monitoring efforts be made compatible with one of the national terrestrial survey efforts. Perhaps an intensification of the National Resources Inventory survey sites and data collection protocols would serve

the region well. See the Proposals #200002300 and #200020116 and ISRP reviews in the Columbia Plateau.

The absence of specific objectives leads to a very habitat based approach, rather than a series of habitat actions taken to achieve specified objectives in terms of wildlife quantity, composition, and density. It involves the control of noxious weeds, replanting of damaged riparian areas, conversion of cultivated lands to native species, exclusion fencing for livestock, increasing law enforcement, maintain living facilities, upgrading office facilities. No information is provided on specific methods to be used (e.g. restoration of agricultural lands). Methods are referenced as being in the Precious Lands Area Management Plan, but, this is still "in preparation" and thus unavailable to reviewers. The apparently extensive noxious weed control project (as judged by its high line-item cost) is still a concern to reviewers and requires explanation/justification. A fire suppression plan and an integrated weed control program are still "to be developed." The term "adaptive management" is used to describe the fire and weed programs that will be developed, but no specifics are given as to when and how this will be done.

The proposal adds an enforcement component in response to thefts and vandalism in the past year and to enforce road closures and educate public. This seems reasonable.

The question of whether maintaining access roads and facilities is beneficial for fish and wildlife has been addressed in terms of personnel access to restoration projects. Justification of a full time site manager is not given.

The travel cost continues to appear high. Although some explanation of the cost of on-site work is provided, the large amount of on-site work is not explained or itemized.

The proposers should explain the request for funds to upgrade the NPT offices to be handicapped compliant. This type of expenditure would normally be included in indirect costs.

Project ID: 27023

Precious Lands Wildlife Habitat Expansion
Sponsor: Nez Perce Tribe
Subbasin: Grande Ronde
Short Description: Expand the operation of the NE Oregon Wildlife Mitigation Project -- "Precious Lands" to protect, restore, and enhance up to 16,500 acres of additional grassland, riparian and ponderosa pine habitat to benefit fish and wildlife.
FY02 Request: $3,373,974
3 YR Estimate: $10,151,474
ISRP Preliminary Review Comments:
Fundable. The acquisition activities are well justified. A response is not needed. The procedures and priorities for land purchase are well justified, as is the choice of canyon grassland as target habitat to acquire. Longer-term funding for management should follow provision of reviewed and approved management plan that includes M&E.

This is the acquisition component of the wildlife proposal above. It is for funding to double the area for wildlife habitat. The target habitat is canyon grassland and the area targeted for acquisition encompasses all the quality canyon grassland habitat in the Blue Mt province. The process of prioritizing potential purchase parcels was not described in the proposal but was described in the presentation. It would consist of an identification of available parcels, an evaluation of habitat values (riparian, wetlands, 303d listed streams, number of listed species present, ponderosa pine communities and canyon grasslands preferred), ecological condition and restorability, consideration of the size of the parcel, and assessment of the relationship to other conservation areas, economic value. A third-party appraisal would be conducted. The Council's program includes a Land and Water Acquisition, how would this project fit in?

The project proposes over the long run to improve land use practices, restore degraded communities, protect and enhance habitat values, monitor and evaluate management practices, and provide habitat quality for wildlife. As with the proposal above, these longer-term management goals and actions are not yet well-justified in terms of science, as concrete and detailed management plans and objectives are yet to be completed. According to the presentation, a management plan would specify the desired outcomes and include measurable objectives for species composition. How will these objectives be derived? Some economic uses of this land may be allowed, but no specifics were given. These should be included in the management plan and the management plan should itself be subject to outside scientific review.

The review group suggests that future terrestrial monitoring efforts be made compatible with one of the national terrestrial survey efforts. Perhaps an intensification of the National Resources Inventory survey sites and data collection protocols would serve the region well. See the Proposals #200002300 and #200020116 and ISRP reviews in the Columbia Plateau.

Project ID: 200002100

Securing Wildlife Mitigation Sites - Oregon, Ladd Marsh WMA Additions
Sponsor: Oregon Department of Fish and Wildlife
Subbasin: Grande Ronde
Short Description: Protect and restore wetland and riparian habitats on parcels acquired and added to the Ladd Marsh Wildlife Area.
FY02 Request: $193,185
3 YR Estimate: $658,685
ISRP Preliminary Review Comments:
A response is needed. The proposed purchases are justified to extend the wetland, and the property is of high priority to migrating waterfowl. The restored wetlands will use treated wastewater from the City of La Grande, a practice in place on a smaller scale since the early 1990s. The project is clearly significant to regional programs, and well tied in with other projects. An extensive project history is provided that illustrates the collaboration among various entities to acquire contiguous lands and restore them as wetlands. This project is clearly tied to wildlife mitigation goals and to limiting water quality and quantity factors in the Grande Ronde Subbasin. The technical background of the proposal

gives a good justification of the value of the restoring more of the historic wetlands, which once exceeded 20,000 acres as Tule Lake. Ladd Marsh has been identified as a priority restoration site by many different planning efforts.

However, the proposal still fails to address the previously noted scientific deficiency that the management plan, especially the M and E component, needs to be better described. Sequential restoration goals are provided. Objective 4 refers to a five-year management plan that is in existence and will be amended with the addition of the new properties. Details of this management plan including the plan for monitoring and evaluation are not included in the proposal, and should be submitted in the response to this review.

The review group also suggests that future terrestrial monitoring efforts be made compatible with one of the national terrestrial survey efforts. Perhaps an intensification of the National Resources Inventory survey sites and data collection protocols would serve the region well. See the Proposals #200002300 and #200020116 and ISRP reviews in the Columbia Plateau.

Project ID: 27020

Grande Ronde Subbasin Water Right Acquisition Program
Sponsor: Oregon Water Trust
Subbasin: Grande Ronde
Short Description: Acquire 3 cfs of existing Grande Ronde Subbasin water rights on a voluntary basis and transfer to instream water rights under Oregon state law; target acquisitions to maximize fulfillment of habitat objectives for instream flows.
FY02 Request: $62,620
3 YR Estimate: $205,322
Preliminary ISRP Review Comments:
A response is needed. This proposal is for funding to assist with the acquisition of water rights in the Grande Ronde Subbasin. Previous work was funded under a Columbia Basin-wide project. This is the first proposal submitted by OWT for Grande Ronde work under the separate subbasin structure.

The project goal is to acquire relatively small amounts of water that significantly impact flow in tributary habitats. The proposal is to acquire senior water rights for conversion to in-stream use. Small to medium landowners with livestock operations (where alternatives to irrigation-grown feed can be purchased) are the target sellers. OWT would work with OWRD to ensure that protectable rights are purchased, and with ODFW to ensure that the additional water results in demonstrable ecological benefits.

The goal is to acquire 3 cfs over a three-year period. A cost estimate is provided for each cfs ($60k). OWT requests funds for 2/3 of the costs of water rights acquisitions.

Inadequate flows in small streams and tributaries are identified as a major limiting factor for fish habitat. The technical background is excellent, and a convincing case is made for the rationale and significance of this project to regional programs. Objectives are systematically presented with associated tasks and methods. Methods for most tasks are

described in adequate detail. However, more detail could be provided on the economic evaluation (Task 1.c) and how it will be conducted. How will evaluation of permanent transfers differ from that done for temporary leases?

In the presentation it was indicated that economic valuation of water rights is done to establish parameters for negotiation with landowner. If a short-term lease is being negotiated, the value of water to a landowner is assessed through a crop enterprise budget. If it is a permanent transfer, the value of water to the land is assessed in terms of the difference in sale prices of comparable land with and without water rights. Details of this approach should be presented in the proposal.

Monitoring and evaluation are included not only for the rights acquisition but also for the ecological impact of the increased in-stream flow. Cooperative monitoring of conservation impacts with tribes and state agencies is planned. More detail needs to be provided on monitoring methods. Although the OWT does not conduct the monitoring, they need to demonstrate that someone (ODFW, OWRD or the tribes) is assessing the biological impact on fish of the additional water. Impacts will likely need to be monitored in the aggregate.

The project has the potential to directly address problems of stream flow and temperature, but can such small increments of cfs can make an effective difference? What is the strategy for ensuring that they do? What is the evidence that the seemingly small flows being acquired (e.g., 0.09 cfs) will be of significant benefit in terms of the biology of the fish? The question is whether it is better to fragment available funds to get small cfs in many areas or to purchase a larger number of cfs in a smaller number of areas.

The response should indicate how the additional water will affect the *flow regimes* of the streams as they relate to the life cycles of the fishes and other organisms. What are the critical periods in the yearly cycle of natural fish production in the particular stream, and how will the added flow ameliorate limiting conditions?

A larger question that should be addressed by a future project pertains to the cumulative effect of these water right acquisitions on the ecological productivity of the streams and also on the pattern of riparian land use. For example, will changing the ownership of water rights appurtenant to the land create an incentive to take land out of agriculture and into an alternative use, such as housing?

Fifteenmile Creek might be a good demonstration site for this type of assessment.

Project ID: 198402500

GRANDE RONDE BASIN FISH HABITAT ENHANCEMENT PROJECT
Sponsor: ODFW
Subbasin: Grande Ronde
Short Description: Protect and enhance fish habitat in selected streams on private lands in the Grande Ronde Basin to improve instream and riparian habitat diversity, and increase natural production of wild salmonids.
FY02 Request: $456,416
3 YR Estimate: $1,438,850
ISRP Preliminary Review Comments:
A response is needed. This proposal is to continue work on a 15 year old project that includes 40 individual habitat enhancement projects.

The technical background provided in the proposal is again excellent, providing good explanation of the problems and the choice of approaches to address those problems. The project has strong ties with other projects. The project history is thorough and includes summaries of monitoring results. In response to earlier ISRP comments, some evaluation of results is also presented. The examples of monitoring are limited by the types of data presented (i.e., max and min values), but the data have apparently been collected.

Reference is also made to more extensive evaluations in preparation. The discussion of project results and evaluation provides detail on methods to be used to meet the 7 objectives. New monitoring is also described. The adaptive management implications section is quite a good discussion of approaches taken and modified after evaluating results. However, inconsistencies between the proposal and presentation should be reconciled. Although the monitoring plan presented in the proposal is adequate, the responses made during the presentation to questions about monitoring raised questions as to whether monitoring, and especially evaluation, is actually being done.

The program has clearly accomplished many habitat and stream restoration activities. Photographs of restoration results illustrated that, with respect to approach and technique, much, perhaps most, of this project's restoration work is of the passive sort that the ISRP has recommended—removing human abuses and enabling the natural system to restore normative functions. The ISRP recommendations in FY00 called for M&E, and the FY02 proposal responds with am M&E plan but does not present M&E results, leaving the reviewers to question whether M&E was done in FY00-01. Results should be summarized quantitatively in tables and graphs in the FY02 proposal's project history.

This is a long-standing project that is not providing a quantitative summary of biological or physical results. Data collection and analysis have been a minor component of this project and continue to lack the emphasis they warrant. However, projects that have been funded since 1984 owe it to the region to provide rigorous internal evaluation of the efficacy of actions in order to understand if the assumptions driving the actions are correct. After so many years and so many projects (BPA funded and otherwise), it is critical that this project demonstrate physical and biological changes. It is time to provide an evaluation of the habitat restoration work.

During the presentation the PI's response to the need for and role of monitoring was candid but disturbing. He noted that monitoring was cumbersome and done primarily to appease the ISRP for the purpose of continuing funding. This reflects a serious misunderstanding of the role of monitoring, which is the primary tool for adaptive management – learning and providing course corrections to an ongoing program. The PI noted that he was certain that they were doing good things for streams and habitat – he and the landowners could see the results with their own eyes – therefore, it wasn't necessary or even desirable to collect "reams of data" to verify this. Many of the biologists in the basin appear to have an unvalidated belief in the Rosgen method as the vehicle for achieving the desired stream conditions in the subbasin. This may prove to be warranted, but it should be critically examined.

The history of fisheries management is replete with well-intentioned, but scientifically unsound practices that people thought were good things to do (e.g., rip-rapping stream banks for stability, channelizing streams for flood protection, eradicating bull trout, widespread outplanting of fry in the early years of the hatchery programs and the wholesale transfer of lower Columbia River chinook into the upper Columbia River).

This looks like a good program that has made significant contributions to stream habitat improvements. Such programs are very important, and longer-lived ones like this one can succeed in bringing in many local landowners as cooperators. It is important that this work continue. Nevertheless, the program has reached a point where it is mandatory that it be critically evaluated. The PI does not appear to understand the role of and need for M & E, and its role as a guiding and correcting principle in the FWP. How much technical support is available to the PI for the M&E work? Part of the written agreements with landowners is that ODFW will continue long-term monitoring of these projects. What will be the extent of this monitoring?

If the project is to be funded, it is critical that outside assistance be made available to the PI (either through ODFW or perhaps through OSU) to compile, review, analyze, and publish the results of program in stream habitat restoration. An individual with strong quantitative skills should be dedicated fulltime to analysis of the past 15 years' monitoring data. The results of this analysis should be clearly and comprehensively presented in the next proposal.

Project ID: 199202601

Implement the Grande Ronde Model Watershed Program Administration and Habitat Restoration Projects
Sponsor: Grande Ronde Model Watershed Program
Subbasin: Grande Ronde
Short Description: Continue the Grande Ronde Model Watershed Program Administration and Habitat Restoration. Develop and oversee coordinated, sustainable resource management in the Grande Ronde Subbasin. Plan, design and implement salmonid habitat restoration projects.
FY02 Request: $1,376,000
3 YR Estimate: $5,088,000
ISRP Preliminary Review Comments:
A response is needed. The proposal did not adequately address previous ISRP review comments. In FY00 the ISRP recommended that subsequent funding be contingent on the provision of more complete information and evaluation. The 9 year-old project has a large budget ($1.4 million) but presents almost no evaluation of performance. Specifically, results in terms of biological and physical attributes are not adequately provided.

The ISRP also recommended in FY00 that continued funding should be contingent on the provision of a better description of the results of post-project monitoring, a formal evaluation of the cumulative effects of all watershed council activities, an overall evaluation plan, and an evaluation of the effectiveness of and rationale for such treatments as noxious weed control and tree density manipulation. In response, this proposal provides a very short description of project achievements over the past 5 years and a brief reference to effectiveness monitoring. No detail on the monitoring is provided. Effectiveness is evaluated as “visible on-the-ground success.” This is an insufficient response to FY00 review comments. The project’s 8 years of results should be presented in terms of measured responses in species and habitats.

Additionally, the tasks presented under the 8 objectives for FY02 are completely absent of methods specific to those tasks. The short description of general methods provides insufficient detail to review; technical detail on methods should be provided. The future restoration projects and the criteria for selecting projects are not adequately defined. For example, how are rock barbs and vortex weirs expected to reduce sedimentation? How would manipulating tree density affect fish and wildlife? While the ISRP tour and briefings indicated that these proponents are well organized and enthusiastic, this proposal lacks the detail necessary for support. At present, the proposal seeks a million dollars without any specific projects or priorities identified. Further, the M&E component (tasks 1 and 2) are vague and must be very limited given the budget requested.

The proposal refers to the structured process the GRMWP has developed for project solicitation and implementation, to the thorough internal review process used by GRMWP for implementation, to “individual monitoring plans” that each project will have, and to the fact that O&M of each project is the responsibility of each PI. More detail on each of these processes should be presented. The response is effectively saying

that review of projects takes place outside the FWP process. Project results are expressed in terms of number of projects completed rather than in quantitative indicators of watershed improvement.

In contrast, the site visit provided a more favorable picture of project implementation under the GRMWP. The team visited a wide variety of riparian restoration projects that represent an excellent leveraging of BPA funds. The project has an impressive amount of cost-share and coordination; overall, the costs are shared at about 50:50.

All projects appear to have some level of effectiveness monitoring, and there are basin-wide stream inventories and a water quality monitoring program. The hiring of a water quality coordinator is planned, after which some projects will be selected for intensive monitoring of water quality and other indicators on watershed health. Additionally, the GRMWP appears to have formed extremely effective working relationships with a wide range of subbasin interests.

Evaluative information on the projects and process used by the GRMWP should be presented in the proposal, not only for performance review purposes but also for internal evaluation and educational demonstration of this model watershed program. This project is a "model" watershed program and should lead by completion of a more informative proposal that would demonstrate gains from past investments and work. The GRMWP and other entities would benefit from a more formal evaluation of restoration progress.

1. Project ID: 199403900

Watershed Restoration Planner
Sponsor: Nez Perce Tribe
Subbasin: Grande Ronde
Short Description: Act as the liaison between the Nez Perce Tribe and Wallowa County. Help coordinate watershed restoration efforts in Wallowa County between the Tribe, County, Grande Ronde Model Watershed Program, local landowners, and state and federal agencies.
FY02 Request: $64,289
3 YR Estimate: $202,670
ISRP Preliminary Review Comments:
A combined response with project 199702500 is needed. This proposal requests continuing funding for a liaison to function as a planner and coordinator for the NPT's involvement in the Wallowa County and Grande Ronde Watershed plans. Last year the ISRP recommended that the planner should be funded as part of a proposal for the work to be done under proposal 199702500. The planner remains a separate proposal for the purposes of indirect cost savings on project 199702500.

Some measures of performance are provided to demonstrate the efficacy of the position. The coordinator appears to be performing a useful function, and there are some attempts to provide outcomes in the proposal. Objective 6 is a hatchery activity. Why is this task contained within a watershed project?

This proposal and 199702500 (requesting funds for the coordinator to encourage desired actions) do not present material needed to support a scientific review. The site visit provided some examples of past actions funded by the planner, but the proposal provides little detailed rationale for projects and assessment of outcomes. The material provided in both proposals is what one might use in a personnel description or evaluation, but it is not what is needed to judge the scientific value of the work. Obviously great detail cannot be presented on each of many small actions; however, an overall plan for targeted improvements, along with strategies for prioritizing and implementing them, and some evaluative outcome assessment should be presented. A response is needed to provide this sort of information for evaluation.

2. Project ID: 199702500

Implement The Wallowa County/Nez Perce Tribe Salmon Habitat Recovery Plan
Sponsor: Nez Perce Tribe
Subbasin: Grande Ronde
Short Description: Maintenance and/or restoration of salmon habitat through cooperative and voluntary methods is a stated goal in the Wallowa County/Nez Perce Tribe Salmon Habitat Recovery Plan. Funding of this project will help to implement the Plan.
FY02 Request: $45,675
3 YR Estimate: $132,025
ISRP Preliminary Review Comments:
A combined response with project 199403900 is needed. The response should address issues from the FY00 review.

This project is operated through the County for the purposes of a lower (5%) indirect cost assessment. Funds under this project are used for small opportunistic grants to landowners to reconcile the different funding cycles of OWEB and BPA. According to the presentation, the landowner contributes a minimum of 25% to projects as cost-share.

The project will change direction in 2001 by putting more emphasis on selected watersheds, provide up-front money for project development, (survey work, engineering design), install stream gages, and continue to find small projects that fall outside the normal funding cycle. The proposal should provide information about how funds were allocated in the past year and the level of cost share received in each project.

Overall, the project seems like an effective leveraging of different sources of money for small projects that have a measurable impact. However, The proposal as it stands is not amenable to scientific review. The response should develop technical justification for the methods used, better describe how projects are prioritized and selected, and develop a better comprehensive evaluation procedure.

There are opportunities for monitoring in these small projects that would generate useful information. For example, the presentation included a description of Prairie Creek that formerly had a gravel bottom but now has a mud bottom. Habitat monitoring is planned for this project but no biological monitoring is planned. Biological monitoring should

also be done from the project inception in order to track the level of changes over time, as the stream bottom changes from mud to gravel, and as erosion sources are fixed. Baseline information will allow a comparison to later changes. Restoration of these deeply eroded banks in projects in other subbasins has tended to be very aggressive. Such active restoration projects can be extremely expensive. Is it possible for small monies and efforts to reclaim Prairie Creek?

With regard to Prairie Creek, there seems to be over-concern about high, bare-soil stream banks at the outsides of meander bends. They are undoubtedly the source of some fine sediment, but much more probably comes from overland runoff. The banks will heal naturally if given the chance. Rather than fighting streambank erosion directly (as was implied in the presentation), the project should concentrate on removing human-generated disturbances of the watershed and riparian area, and should let the stream migrate at will within a revegetated riparian zone—a process in which some high, bare banks will persist, and some new ones may be created, although the total amount of rapidly eroding bank will undoubtedly decline markedly in the long run via natural vegetative healing. The channel-narrowing effect of riparian vegetation will, within a few years, concentrate current so as to scour away the mud described as now inundating streambed gravel. The project could benefit by guidance from a genuine fluvial geomorphologist. It shouldn't rely on ideas that non-geomorphologists pick up at shortcourses.

Project ID: 199608300

CTUIR Grande Ronde Subbasin Restoration
Sponsor: Confederated Tribes Umatilla Indian Reservation
Subbasin: Grande Ronde
Short Description: Protect, enhance, and restore riparian, floodplain, and instream habitat to benefit anadromous fish.
FY02 Request: $200,000
3 YR Estimate: $585,000
ISRP Preliminary Review Comments:
Fundable. A response is not needed. This project to restore McCoy meadow and relocate the creek from a straight ditch into a former natural, meandering course began in 1996. Passive restoration is emphasized. The proposal is thorough, detailed, and clearly written. It contains excellent scientific/technical background and excellent project history.

The project area lies in the ceded territory of CTUIR. The CTUIR is a participant in the GRMWP. Besides channel relocation, activities include placing large woody debris, planting riparian vegetation, and replacing culverts (in at least one place with a bridge. Projects with landowners are trying to focus on key life history areas for fish such as over-wintering rearing habitat and spawning areas. Data on water temperature and fish populations are presented.

The descriptions of tasks and of methods used to achieve the objectives are a bit general and could have more information on how specifically the objectives will be met, and how success or failure to meet them will be assessed. A description of the type of monitoring

and evaluation that is done, and of results to date is presented, but the relative progress toward achieving the biological objectives is not described.

Overall, this is a strong proposal with competent staff.

Project ID: 27012

Restore and Enhance Grande Ronde Valley Deciduous Riparian Habitat
Sponsor: Oregon Department Fish and Wildlife
Subbasin: Grande Ronde
Short Description: Protect, restore and enhance deciduous riparian habitat adjacent to the Grande Ronde River and its tributaries in the Grande Ronde Valley
FY02 Request: $156,000
3 YR Estimate: $551,000
ISRP Preliminary Review Comments:
A response is needed. More detail is need on the methods. This is a proposal to establish cooperative arrangements with Grande Ronde riparian owners to set up long-term easements for protection and enhancement of riparian habitat. Habitat emphasis is on birds and juvenile Chinook and steelhead.

The technical background is excellent, providing detail on context for this project, and putting the problem of riparian habitat protection in perspective. It discusses riparian mitigation priorities in the context of several subbasin planning and watershed assessment documents. The rationale for the project is embedded in this technical background section. The proposal provides a long list of projects to which it would be related.

Despite this good beginning, the proposal gets a little vague beginning with the goals and objectives. The proposal lists general goals that the project will help achieve: are these taken directly from the Grande Ronde Subbasin summary or are these goals specific to this project? Below the list of goals, the proposal contains lists of actions to be taken under various categories: again, are these tasks for this project or actions listed in the Subbasin Summary?

Objectives and tasks are listed, but without any detail. There is no explanation of methods, e.g., as to how habitat will be restored once easements are signed, or what information will be acquired to provide the NEPA analysis. No explanation of methods for weed control, buffer management, bird surveys, stock assessment are given beyond "write the subcontract" to have the activity performed. With regard to M&E, the methods for Task 1a and for Objectives 2 and 3 are missing.

The idea of reconnecting old river oxbows is particularly laudable from the standpoint of regaining fish and wildlife habitat. However, arrangements with landowners for this could be very difficult, and the physical work could be complicated. What method(s) will be used to relocate the channel?

There appear to be good working relationships with landowners in the valley.

The review group suggests that future terrestrial monitoring efforts be made compatible with one of the national terrestrial survey efforts. Perhaps an intensification of the National Resources Inventory survey sites and data collection protocols would serve the region well. See the Proposals #200002300 and #200020116 and ISRP reviews in the Columbia Plateau.

Project ID: 27013

Grande Ronde River Stream Restoration - La Grande, Oregon
Sponsor: Union County and Union Soil and Water Conservation District
Subbasin: Grande Ronde
Short Description: Improve fish passage and habitat through the replacement of the headgate structure, establish rock cross vane structures, rock weirs, fill and stabilize scour pool improving habitat, stream bank stabilization and large woody debris placement.
FY02 Request: $816,080
3 YR Estimate: $841,080
ISRP Preliminary Review Comments:
Response is needed. The project is planned to further modify a Grande Ronde River reach that the Corps of Engineers straightened in 1959 on the outskirts of the town of La Grande. The primary intent of the proposal is to forestall channel headcutting that threatens to undermine a bridge and irrigation ditch diversion. However, the proposal and the project plan embodied in its "Ecosystem Report and Environmental Assessment" (U.S. Army Corps of Engineers, Walla Walla District, Nov. 1999 [COE report]) portray the project primarily as fish habitat improvement. This project fails to remedy the problem's cause, the channel straightening, and is not clearly focused on fish benefits. The benefits to fish appear minimal compared with what could be done for that resource. In fact, the project, as now planned, would perpetuate various features of the present channel that adversely affect fish habitat.

The proposal references no biological or ecological literature (primary or otherwise) in support of this plan to purportedly improve habitat for fish and wildlife, particularly for bull trout migration. No biologist is shown among project personnel. The COE report has an Appendix C on "Biological Assessment" for which the only literature referenced is a paper a parasite of chinook salmon, the NMFS 1995 proposed recovery plan for Snake River salmon, and a 1998 Oregon reference on a plant, the Ute ladies' tress. The latter source was not listed in the "References Cited" section of Appendix C, although six other literature items did appear on that list—but were not shown not in the text. Among those six items, listed as "cited" but actually not referenced, were two well-known papers on bull trout life history and ecology (Fraley and Shepard 1989; Rieman and McIntyre 1993). Strangely, the COE report's Appendix A on "Fisheries Criteria for the headcut Stabilization Design" states: "Very little is known about the life history and habits of bull trout," at which point no literature is referenced. These referencing deficiencies and wording indicate that the COE report's sections on fish are based almost purely on rough professional judgement rather than available science.

Because an expanse of land devoid of residences or other buildings exists on each side of the stream, there is ample lateral space to create a lower flood plain and to re-meander the stream within a well-vegetated riparian zone (the irrigation ditch along the right bank could be relocated). Creating a significant meander corridor would result in a much more natural restoration and far more habitat for fish and wildlife. Neither the proposal nor the COE report considers this alternative, therefore, the proposal is inadequate. The only action alternatives described are further (primarily hard structure) engineering of the present artificially straightened course. These would all result in a rigidly stabilized channel bearing little resemblance to naturally productive habitat for salmonids.

The COE report states (p. 1-1) that the project is to be done under Section 1135 of the Water Resources Development Act of 1986 "to modify the structure and operation of water resource projects to improve the quality of the environment in the public interest." Under the heading, **Purpose**, it emphasizes the goal of meeting "specific habitat needs" of 3 ESA-listed fishes (p. 1-1); says the "intent of this project is to implement measures that would help restore a migration corridor and rearing habitat for fish, enhance riparian vegetation, and stabilize the river channel and its banks" (p. 2-1); and explains that in a headcut section the primary goal is fish passage improvement, and that in a downstream section the primary goals is to improve winter holding and rearing habitat (p. 2-1). The objectives of protecting the bridge and irrigation ditch are not mentioned in the purpose section. They are at least alluded to elsewhere in the COE report, but not prominently.

The major fish habitat need cited in the COE report is to provide passage for salmonids. However, at present, the headcut area envisaged for alteration presents no more of a challenge to salmonids that need to migrate upstream than do rapids and falls that salmonids normally surmount elsewhere. In the oral presentation and COE report, it was stated or implied that the channel must be altered to permit upstream passage of juvenile bull trout, the weakest swimmers among the system's salmonids. This asserted need was not substantiated and is not consistent with the life history of that species. The migratory (fluvial) bull trout mature in the Snake River (perhaps also the Grande Ronde's lower reaches), swim upstream past the headcut as adults to spawn in upper parts of the system, and return downstream. After rearing near and below the headwaters, juveniles move downstream; some may disperse into various parts of the river system (pers. comm. Bruce Rieman, US Forest Service) but in general the juveniles move toward the larger rivers where they mature. They have no known need to swim upstream through the headcut until spawning migration when they are large and can surmount such features. Resident bull trout inhabit more upstream areas lifelong and need not pass the headcut. Moreover, the COE report's own analysis (Table 3-1, p. 3-13) showed that the present probability of upstream passage for juvenile bull trout is 50 percent; this indicates that, although no juveniles need to pass, about half of them probably could—and that positive selective pressure would operate on the population if any of the young fish did have good reason to try the challenge. Clearly, no need exists here for better than present fish passage.

The proposal conveys a misimpression that urban development constricts the corridor available for restoration of a proper flood plain and meandering stream. The proposal

says: “Residential development has intensified on both sides of the river channel, reducing the tolerance for channel meanders and out-of-channel flooding.” Site inspection reveals, however, that residences, though sometimes within sight of the bank, are few and are set back many yards from the river. The proposal fails to accurately describe the river as bordered by wide areas of relatively undeveloped land.

Under geomorphologic problems, the proposal lists “atypical river parameters” as a category and shows “high width/depth ratio; high raw, vertical banks” as the items involved. Lack of normal meandering should also be included under this category.

The proposal’s objective, “Provide for a Consolidated Low Flow Channel,” has as its task: “Channel alignment and geometry have been designed to result in a narrower, deeper, and more meandering channel within the present river corridor.” Though not truly in the form of a task statement, this implies that the project would create a more meandering channel. Drawings for the “recommended alternative” plan in the COE report indicate that little, if any, additional meandering would be created.

Another objective is “Address Annual Gravel Removal Done in Lower Section of Project Reach.” Its “task” says: “Annual gravel bar scalping will only occur where recruitment warrants protection for stream restoration features.” The purpose of gravel removal and why any should be permitted in the stream or its riparian zone should be explained.

Scientific documentation for fish habitat aspects of the COE report’s designed channel and its artificial structures are lacking, hence also in the proposal.

The proposal states that “The Corp [sic] of Engineers have contracted with Lee Silvies to design the proposed facilities to replicate a more natural condition within the project reach,” and that this “experienced hydrologic engineer, will provide on-site direction for structure construction and placement.” However, Lee Silvies is not found in proposal Sect. 10, Key Personnel, and nowhere in the proposal are his or her education and other qualifications presented.

The proposal mentions no watershed assessment.

The proposal indicates that design was not completed before the proposal was submitted: “The U.S. Army Corp of Engineers and local sponsors . . . will complete a Design and Specifications document within the next two months for the proposed project.”

Project ID: 27008

Grande Ronde River Riparian Restoration
Sponsor: Department of the Interior, Bureau of Land Management, Vale District Office, Baker Field Office
Subbasin: Grande Ronde
Short Description: Enhance and restore riparian and native vegetation along the Wallowa and Grande Ronde Rivers to reduce sedimentation and improve riparian and instream habitat. Map of general project area is included under the narrative.
FY02 Request: $307,730
3 YR Estimate: $768,020
ISRP Preliminary Review Comments:
A response is needed. The work may be fundable, but the proposed actions do not appear to be of high priority. The land being considered for restoration does not appear to be in need of immediate active remedial action.

This proposal is to perform riparian restoration on land acquired by the BLM in 1993. Good background is provided as to the common value of restoration of riparian areas. The BLM wants to control noxious weeds, establish native species, fence riparian areas, and continue maintenance of existing exclosures on this land. Both the Grande Ronde and Wallowa Rivers are on the 303d list for various factors. The presentation gave numbers of conifers, grasses and shrubs planted. Noxious weed treatments, riparian fencing, and large woody debris placement were also described. Monitoring was described in terms of seedling survival, seedling protection, noxious weed control, weed seeding termination and large woody debris, but a monitoring plan is not yet in place and most monitoring methods are listed without adequate detail. It is not clear whether monitoring includes any attempt to evaluate the effectiveness of active measures versus that of simple protection of land and allowance of passive restoration. The rationale and significance to the FWP are clear. However, the goals and objectives are confused. Two of the three listed objectives are actually tasks. Actions listed as “specific projects goals” are also tasks.

Given that this is BLM land purchased with the intent of restoration, and that BLM has already been conducting some of the restoration activities, including some of the NEPA EA work, why should this be a matter of BPA rather than BLM funding?

The review group also suggests that future terrestrial monitoring efforts be made compatible with one of the national terrestrial survey efforts. Perhaps an intensification of the National Resources Inventory survey sites and data collection protocols would serve the region well. See the Proposals #200002300 and #200020116 and ISRP reviews in the Columbia Plateau.

Project ID: 27011

Lookingglass Creek land purchase for watershed protection (spawning and rearing habitat continuity and water quality at Lookingglass Hatchery).
Subbasin: Grande Ronde
Sponsor: Confederated Tribes of the Umatilla Indian Reservation
Short Description: Protect 2.5 miles of stream and riparian areas in Lookingglass Creek to improve water quality and provide continuity of spawning and rearing areas for spring chinook, summer steelhead, and bulltrout.
FY02 Request: $2,263,400
3 YR Estimate: $2,274,400
ISRP Preliminary Review Comments:
A response is needed. This proposal is to purchase an identified parcel of land along Lookingglass Creek for the purpose of riparian protection. The relationship of this project to other projects comes primarily through the issue of water supply to the Lookingglass Hatchery. The Lookingglass Creek purchase is justified in terms of value to Lookingglass Hatchery, and it could very well lead to benefit to fish and wildlife. Further, the area to be acquired is in good condition and should require little if any active restoration. The technical background of the proposal is brief and does not address whether there are any alternatives to land purchase for riparian protection, why access on this parcel has been limited, and whether fish habitat is an important limiting factor or only "seems to be." The proposal lists one objective, which is to protect and improve water quality and provide habitat continuity between private and federally owned land. It lists four tasks, none of which include any explanation of methods. The proposal leaves a number of large questions unaddressed: How will the biological assessment be done? What variables will be measured? How will the "desired future condition" be identified? How will water monitoring be conducted? How will management alternatives be identified? Further, the proposal does not present a clear plan for use of the purchased stream. The proposal and presentation noted that Lookingglass Creek was a top production area for chinook and that is was the installation and operation of Lookingglass Hatchery itself that extirpated the upper creek populations. Without a comprehensive plan for restoration of natural production in Lookingglass Creek, the purchase would seem to be of low scientific priority. Further, the purchase price per acre is very high. The purchase needs to be justified in the context of a plan for restoring salmonids of the Lookingglass basin.

The review group also suggests that future terrestrial monitoring efforts be made compatible with one of the national terrestrial survey efforts. Perhaps an intensification of the National Resources Inventory survey sites and data collection protocols would serve the region well. See the Proposals #200002300 and #200020116 and ISRP reviews in the Columbia Plateau.

Project ID: 27005

Increase CREP Enrollment and Enhance Riparian Protections in the Grande Ronde and Imnaha basins
Sponsor: Oregon Watershed Enhancement Board
Subbasin: Grande Ronde and Imnaha
Short Description: This project will increase enrollment in the CREP program and improve the program to add permanent protection to the restored riparian areas.
FY02 Request: $170,880
3 YR Estimate: $521,720
ISRP Preliminary Review Comments:
A response is needed. This proposal is brief and provides too little detail to evaluate the need, the relationship to the FWP, or the methods. The presentation was helpful in expanding on the basic idea and proposed actions, but a response must provide more detail. For example, the abstract is a single sentence. The rationale to the FWP is not well developed; the proposal describes some of the program environment but does not provide rationale for the proposed work. Three objectives are provided, with very short descriptions of methods under each. Under the 1st objective to "develop a permanent protection mechanism", it states that OWEB needs to develop an economic methodology for acquiring permanent easements, but does not say what that methodology would look like or how it would be developed. The proposal adds staff to 2 county SWCDs in order to increase enrollment through the provision of technical assistance. The PIs need to provide detail on methods of implementation.

Project ID: 27004

Grande Ronde and Imnaha Stream Channel Complexity and Fish Passage Barrier Inventory, Prioritization and Remediation
Sponsor: Oregon Watershed Enhancement Board
Subbasin: Grande Ronde and Imnaha
Short Description: This project will complete an inventory of the channel simplification of the Grande Ronde and Imnaha stream channel and inventory each fish passage barrier in each basin. The data will be used to develop restoration priorities and early implementation.
FY02 Request: $191,580
3 YR Estimate: $753,540
ISRP Preliminary Review Comments:
A response is needed. More detail on the prioritization methods and effort should be provided.

This is a proposal to inventory stream channel simplification and fish passage barriers in each basin, and to prioritize restoration activities. The conceptual basis of the project is straightforward and logical.

The proposal provides very little technical background, although important primary literature is referenced. The rationale is similarly sparse in detail. The objectives are reasonable, but methods are lacking in detail. For example, what is the standard inventory

method for fish passage barriers developed by OPSW? Only a reference to "see websites" is given in the proposal. Details on "other available data" should also be given.

The area in which the lack of detail about methods is most critical is in the development of a prioritization strategy. How will basin characteristics be analyzed? How will the significance of barriers to fish utilization of upstream habitat be evaluated? What are the criteria for prioritization? Additionally, detail on how the prioritization process will be coordinated with various interests should be given as well as a description of the M&E that will be done and the methods that will be used.

Overall, the proposal provides too little detail to evaluate the proposed work in terms of need, methods, or relationship to the FWP.

The prioritization process was described in the presentation. The focus will be on historical range, access to productive habitat, and significance of the barrier.

The project would put staff in SWCDs to inventory streams in coordination with USFS and other parties. Historical work will be contracted to the Or Natural Heritage Foundation using railroad surveys as the primary documents. This is a methodology similar to one used for coastal lowlands. Maps will be available through the State GIS site.

A joint publication with FWS is planned. Willamette historical mapping is available now through Oregon Natural Heritage Foundation on their website.

Project ID: 27018

Oregon Plan Blue Mountain Province Fish Screening/Fish Passage.
Sponsor: Oregon Department of Fish and Wildlife
Subbasin: Grande Ronde
Short Description: Protect all species of fish by replacing 6 screening systems that do not meet the NMFS design criteria.
FY02 Request: $153,314
3 YR Estimate: $153,314
ISRP Preliminary Review Comments:
Fundable. A response is needed if proponents wish to adopt the ISRP's suggestion that the proposal be expanded to address the additional screens and their related O&M that were discussed in the site review presentation. This proposal is for an excellent, practical project with good (4X) cost share from NMFS and OWEB. It proposes to build 6 rotary drum fish screens to replace temporary portable installations and in-place screens that do not meet current NMFS screening criteria It represents ongoing work in the replacement of screens.

The technical background provides an adequate explanation of the need for screen replacement and work done to date. The project has significance to regional programs and has clear connection to other recovery projects in the Grande Ronde Subbasin. The objectives and task are appropriate to the work described. However, some of the project's

objectives are expressed as activities ("ongoing construction and installation") rather than as intended outcomes, i.e., fish saved.

After the replacement of these 6 temporary fish screens, new fish screens will still be needed in the Subbasin. It would seem reasonable to increase the budget of this project to allow the fabrication shop to increase their production of screens to full capacity (15-20 per year), and to fund the personnel required for the maintenance of these screens. Why isn't the proposal asking for funding sufficient to upgrade passage at the diversions remaining after the initial 6 are completed? If these other diversions interact with listed steelhead and bull trout as the PI indicated, then they should also be addressed during this project cycle rather than waiting to submit another proposal three years from now.

We learned during the presentation that funding for the operation and maintenance of installed fish screens is limiting the full production of new screens. NMFS is currently funding ODFW to monitor the performance of these screens once installed and to maintain them in good working order, but is no longer funding the construction of new screens. It is unlikely that the NMFS would fund the expanded maintenance requirements associated with the installation of additional screens.

We recommend that the proposal be expanded to budget for screening all necessary diversions and to support the FTEs needed for O&M.

Project ID: 27022

Wallowa County Culvert Inventory
Sponsor: Nez Perce Tribal Fisheries/Watershed Program
Subbasin: Grande Ronde
Short Description: Prioritize on county, state, federal, and private land, culverts that either need maintenance or replacement to meet resource needs.
FY02 Request: $170,603
3 YR Estimate: $548,619
ISRP Preliminary Review Comments:
Fundable. A response to the ISRP is not necessary, but if funded ISRP concerns should be addressed in the contracting process. This is a proposal to identify and prioritize culverts that restrict fish passage or fragment habitat. In addition, some culverts carry a risk of increased sedimentation due to washing of road fill into streams. An inventory of tributary barriers is clearly important to regional programs.

Objectives and tasks are sparse in the proposal, although some attempt is made to describe the methods used. The estimates of numbers of culverts to be surveyed aren't consistent with numbers given for the field period or the time taken for each survey. The statement is made that it takes an average of 2 hours to survey a culvert, and that during one field season (June to October) two crews can survey 400 culverts working 40 hour weeks. At 2 hours per culvert, this is only a 10-week, rather than 16-week season. What accounts for the time difference? Is it training and data entry?

Under Objective 6 ("breakdown of project information and peer review"), what kind of peer review will be performed? The project should contain a better protocol for providing the inventory to fish managers and the public. It should develop an information transfer activity that is more proactive than doing presentations "upon request".

Project ID: 199202604

Investigate Life History of Spring Chinook Salmon and Summer Steelhead in the Grande Ronde River Basin and Monitor Salmonid Populations and Habitat
Sponsor: Oregon Department of Fish and Wildlife
Subbasin: Grande Ronde
Short Description: Investigate the abundance, migration patterns, survival, and life history strategies of spring chinook salmon and summer steelhead from distinct populations and implement fish population and habitat monitoring in the Grande Ronde and Imnaha River basins.
FY02 Request: $1,412,651
3 YR Estimate: $4,393,253
ISRP Preliminary Review Comments:
A response is needed. Objectives 1-11, which pertain to the ongoing research, is fundable, but Objectives 12 (EMAP component) and 13 (Wallowa Lake Study) are new work that has little direct scientific relationship to objectives 1-11. Objectives 12 and 13 each should be submitted as new projects.

The proposal fails to justify the need for Objective 12 and, in particular, why Objective 12.2 is necessary. It is unclear how the EMAP-based surveys directly support or complement the early life history research that constitutes the bulk of the proposal. How would these surveys differ from existing surveys and how does this work advance these assessments? How would the EMAP-based surveys fit into a long-term, province scale monitoring effort and how would this effort incorporate or build upon the ongoing early life history studies. A clearly defined monitoring plan for salmon in the Blue Mountain Province is necessary to provide context and justification the EMAP-based surveys.

Objective 13 is a worthwhile investigation. However, like objective 12, objective 13 has no direct connection to the ongoing early life history studies and should be incorporated into a new proposal. The issue at Wallowa Lake merits investigation. However, the goal of Objective 13 needs to be clarified. Is this a study in sockeye re-introduction or a study in kokanee assessment and restoration of the fishery? A general concern with this extensive sampling program, however, could be the degree of handling and sampling that occurs in these systems. Have the investigators considered how to maximize the efficiency of this sampling and/or are they concerned about the impact of repeated sampling of these fish. Are there ESA permit issues that should be considered? Further, while the proposal is highly dependent upon the use of PIT tags and applies thousands of them, there is not information on the determination of sample sizes or design used to determine how many tags to apply. Is there a statistical basis for determination of the number of tags released and fishes sampled, etc.? And finally, several times the text refers to the principles of the Oregon Plan. If these principles are determining sampling

protocols and costs they should be described in the proposal and the proposed responses related to these principles.

Objectives 1-11 provide a comprehensive evaluation of spring chinook salmon and summer steelhead life-history variation. The proposal interacts with essentially all other NEOH proposals and is well integrated with the co-managers. Previous research has provided useful information on early life history diversity, egg-smolt survival, and smolt survival to LGR. The investigators propose to expand the project to include studies of the early life history of steelhead and an assessment of winter habitat for chinook. These additions are reasonable and in line with the BiOp and the F&W Program.

The proposal should be modified to reflect recent changes in the direction of salmon restoration within the Columbia Basin as indicated in the BiOP, the Basinwide Recovery Strategy (the All H paper), and the F&W program. These changes in direction include a greater emphasis on protection and restoration of tributary habitat. In support of this effort, the proposal needs a stronger habitat component that directly addresses the relationships of egg-smolt survival and early life history patterns to habitat conditions and habitat change in Grande Ronde River tributaries, including an assessment of limiting factors. The investigators should consider the following:

1. A project component that routinely assesses habitat conditions in all tributaries where egg-smolt survival and early life history patterns are being investigated. The habitat work proposed in objective 12 was not directly tied to specific habitat conditions in the tributaries where the on-going biological data was being collected.
2. Clear objectives and methods for addressing limiting factors in freshwater.
3. Improved estimates of egg-smolt survival including incorporating information on age structure of spawners in estimating egg deposition, more accurate redd counts, and more accurate enumeration of returning adults. Currently adult abundance is estimated from redd counts. There are numerous problems with this method.
4. Comparisons of habitat conditions and biological performance among tributaries and among reaches within tributaries that differ in habitat quality.
5. Estimates of summer parr survival and its relationship to summer rearing conditions. The budget should increase commensurate with the additional work. The investigators also should consider an assessment of non-native species distribution and abundance within the basin and interactions of non-native species and native salmonids.

Given the multiple tasks described in this proposal, there are several questions that may best be just listed for the author's consideration and response:

1) Objective 1 (page 15): the estimation of smolt numbers is an important component of the research, but to estimate these numbers requires measures of trap efficiency. There are no comments on how trap efficiency is measured, no data on consistency of estimates or how they vary with flow, etc., and no method presented on how the smolt numbers and variances are estimated.
2) Is there added value of the winter tagging in Objective 2 when tags have been applied in the late summer under Objective 3?

3) Objective 5 requires adult spawner data as well as the data described under this objective. How is the adult data collected and is the accuracy of that data comparable to the juvenile data? Life stage survival estimates require both adult and juvenile data.
4) Clarify the intention of Objective 6.2 (page 20). Are you actually sampling for yearling resident chinook that do not mature sexually?
5) What are the dates of trapping for spring chinook and steelhead? Objective 7 for steelhead seems identical to the objectives for chinook but the species are treated separately and double the costs for trap sampling.
6) Task 7.4 (page 21) refers to "paint" marking but it is not clear what the role of this mark is. Is paint marking just an avoidable mark used only for assess trap efficiency?
7) The methods to be applied for Objectives 9 and 10 are not well described. Further, it is not evident how the tasks described in Objective 10 actually address the objective defined.
8) Objective 11 (winter concealment habitat) is strongly supported as a task but we are uncertain that habitat characteristics should simply be defined in this way without verification of these values within these actual environments. Reviewers would strongly suggest some verification of the habitat definitions in the sample sites and following the use of these habitats during the late fall transition period when ice begins to form in these rivers.

Listing the publication of results could strengthen the proposal further.

Project ID: 27024

Life history strategies in Oncorhynchus mykiss: interactions between anadromous and resident forms.
Sponsor: Oregon Department of Fish and Wildlife
Subbasin: Grande Ronde
Short Description: To aid in conservation efforts for O. mykiss and alternative approaches within hatchery programs, evaluate the relationship between anadromous and resident forms.
FY02 Request: $237,474
3 YR Estimate: $684,182
ISRP Preliminary Review Comments:
A response is needed. The presentation was more informative than the proposal. The proposal lacks sufficient detail, particularly regarding justification of the methods, sampling design for the field studies, and data analysis for all objectives. Some of these details were covered in the presentation but also need to be in the proposal. There needs to be a better justification for using Sr/Ca ratios in the otolith cores to identify the environment of the mother, including citations and preliminary data from the Grande Ronde. Data from the preliminary controlled breeding experiments needs to be presented, including broodstock sizes, performance measures for assessing the appearance of “smolt-like” conditions, and the number of progeny from various crosses that were detected at the Snake River dams. A summary of the evidence that resident and

anadromous forms interbreed and the extent of interbreeding need to be included in the proposal.

Objective 1: How will resident and anadromous forms be distinguished? What are the locations, times, and methods for obtaining broodstock? What physiological and morphological measures will be used to assess anadromy? Where will the progeny be released and where will they be recaptured downstream during their migration to LGR? If the pilot work has been conducted for a few years, why is it necessary to conduct three more years of breeding experiments? What is the breeding design being used? Is it a quantitative genetics design or a simpler ANOVA-style analysis? The quantitative genetics design would be strongly recommended.
Objective 2: How will the "young of the year population" be distinguished from all other O. mykiss? What are the locations, times, and methods of the sampling? What are the sample sizes? How will the data be analyzed?
Objective 3: Needs to be greatly expanded. Task 3.1 may document occurrence of mature *O. mykiss* in the fall but how does this relate to the stated Objective 3?

The investigators frequently use the term equilibrium but it is not clear how this would be achieved (i.e., what mechanism) or why an equilibrium would still be expected in a highly disturbed environment. An interesting example is included in the text. On page 2 (Section 9) the investigators report that recent returns of natural-origin anadromous adults to a tributary in the Imnaha River have recently been 75% females. A third life history strategy may be implied then, i.e., male residual steelhead trout. How would this strategy be involved in this proposal?

This proposal is very similar to activities described in LSRCP project 200109 (ODFW), the authors need to clarify if these are separate activities or where the pilot activities referred to in this new proposal previously included in project 200109?

Project ID: 27019

Adult Salmon Abundance Monitoring
Sponsor: Nez Perce Tribe/Pacific Northwest National Laboratory
Subbasin: Grande Ronde
Short Description: Implement state-of-the-art technologies to accurately quantify chinook salmon spawner abundance in the Minam River. Adult abundance data would allow a measure of recovery threshold abundance of a listed species (NMFS 2000).
FY02 Request: $531,182
3 YR Estimate: $1,688,213
ISRP Preliminary Review Comments:
A response is needed. This is a strong and innovative proposal that would establish quantitative annual monitoring of the spring chinook escapement to the Minam River. The Minam River spring chinook population is the only Grande Ronde Subbasin stock listed as an index population in the recent NMFS Biological Opinion. The proposal provides good background and technical justifications but there are several questions that the ISRP recommends a response:

1) Although the Minam River has been identified as an index site, the proposal provides no background on the trends in chinook in the Minam or the data available on this population. Are you confident that the numbers warrant this major investment? Further, at the briefings, it was revealed that splash dam logging had occurred on the Minam, which generates the question whether the stock and habitat in the Minam is truly representative of other spring chinook populations?
2) (a) What is the advantage of the 4 independent systems. Is the benefit of the third or fourth system worth the incremental cost and complexity? On what basis was this design recommended? (b) What validation procedure would be implemented for both the number of chinook estimated and the species composition of the fish counted? (c) It is not evident in the proposal that the NPT has the technical/hydroacoustic expertise in their staff. These instruments require constant attention and refinement. Does the NPT anticipate recruiting these staff or are they included in this proposal?
3) The table on page 5, Section 9 provides a nice summary of methods but generates the question about what determined the recommendation to use hydroacoustics. For example, the resistivity systems would be less difficult to use but maybe limited by the anticipated flow regimes. Further justification for the recommended system is desirable.
4) To apply the information on spawning escapements, the NPT will also need biological data on the returning adults. What program will provide that or should that information be included in this proposal to ensure it is collected?

A final comment is that several organizations along the coast have implemented similar hydroacoustic systems, although experience in river systems is more limited than in lakes, etc. The NPT may consider forming (or contracting) a technical advisory group to assist in software expertise, site preparation, etc. The investment in this new program could be very worthwhile but the quality of the resulting data will be highly dependent on the site selected and the environmental conditions expected.

Confusion is evident in the outline of objectives and tasks as represented in the proposal's budget sections. In Section 5, Budget for Construction/Implementation, Objective 2 and its Tasks a, b, and c are planning/design matters and belong in Sect. 4. An Objective 3, "Construct the apparatus" should be created in Section 5, and the former Task 2d should remain with it and be renumbered. Also, the out-year items in Section 7, Budget for M&E, should probably be moved to Section 6, as these are really operations. We realize that the whole project is in effect monitoring project, but in such a case, monitoring should be regarded as the operation, and only activities that evaluate the *effectiveness* of the monitoring operation should be classed as M&E.

Council should simultaneously consider this proposal with the companion work proposed in the Salmon River subbasin, proposal 199703000. The response should address concerns from that proposal that apply here as well.

Northeast Oregon Hatchery Program

Hatchery production in the Blue Mountain Province involves the Lower Snake River Compensation Program and a program referred to as the Northeast Oregon Hatchery program (NEOH). The latter program developed in the late 1980s since salmon returns to local rivers continued to decline even following development of the LSRCP. Several proposals reviewed by the ISRP address programs in the NEOH program and specifically the production of spring chinook to supplement natural production in the Grande Ronde River. To clarify the inter-relation of these proposals a brief history of the NEOH has been extracted from project proposal #198805031 and a diagram prepared to summarize the proposals involved (Figure 1). Currently there are no hatchery releases in the Asotin watershed of the Blue Mountain province. LSRCP activities deal with fall chinook in the Snake River, and steelhead in the Imnaha and Grande Ronde rivers, and contributed to rearing and monitoring components of the Grande Ronde programs.

Section 9e, NEOH Master Plan (prepared by B. Ashe, NPT)

"The initial measure for establishing the Northeast Oregon Hatchery (NEOH) was adopted in the Northwest Power Planning Council's 1987 Columbia River Basin Fish and Wildlife Program. First steps in this process began in 1988 when the NPPC authorized the Nez Perce Tribe (NPT), the Bonneville Power Administration (Bonneville) and the Oregon Department of Fish and Wildlife (ODFW) to submit a master plan for review. At that time, the request to those agencies was a master plan that addressed not only salmon (spring chinook) and steelhead, but also coho, sockeye, and fall chinook ("*that the facility need not necessarily be limited to spring chinook, as originally proposed, if other stocks would benefit from hatchery supplementation"*).

Under the 1994 Fish and Wildlife Program, this project is related to Measure 7.4L1, which directs the Bonneville to:

"*fund planning, design, construction, operation, maintenance and evaluation of artificial production facilities to raise chinook salmon and steelhead for enhancement in the Hood, Walla Walla, Grande Ronde and Imnaha rivers and elsewhere.*"

As can be seen in the program language quoted above, the Northeast Oregon Hatchery Project was an initial planning effort by the fishery co-managers to restore anadromous fish runs throughout Northeast Oregon. Restoring spring chinook in the Grande Ronde Subbasin was a discreet segment of that larger initiative. In March 1996, this Grande Ronde spring chinook portion of the NEOH initiative was given special status -- it was approved by the Council as one of the 15 high-priority supplementation projects.

Unfortunately, even with Council's high-priority status, co-managers could not agree on an appropriate production strategy for Grande Ronde spring chinook, given issues including ESA requirements, Oregon's Wild Fish Policy, Lower Snake River Compensation Plan requirements, Treaty and trust responsibility requirements, and other

considerations. Co-manager disagreements were resolved through the United States v. Oregon dispute resolution, the co-managers agreed to ask an ad-hoc independent scientific panel to review their respective proposed production strategies in the Grande Ronde basin, and provide a determination on what would be appropriate. The panel offered several options and recommendations, one of which was that an endemic broodstock should be developed for supplementation uses in the Grande Ronde Subbasin.

The co-managers proposed two strategies to implement an endemic broodstock approach for Grande Ronde spring chinook: captive broodstock and conventional broodstock. In 1994, the co-managers agreed on the strategy for implementation of the captive broodstock component and initiated an emergency program. This captive broodstock component became the Grande Ronde Captive Broodstock project and the Council approved emergency funding in the fall of 1997 for this effort. This captive brood component consisted of an expansion at Bonneville Hatchery and improvements to Lookingglass Hatchery.

As the Grande Ronde captive brood project evolved, other projects under NEOH evolved with it and were modified to encompass the development of the conventional broodstock component of the overall endemic broodstock approach for Grande Ronde River, which was initiated in 1997. The need for the endemic component became the Grande Ronde Basin Endemic Spring Chinook Supplementation project *(GRESCP)* and was approved by Council on June 10 1998. The approved action recommended funding for the construction of adult collection weirs and juvenile acclimation facilities at three sites — Catherine Creek, Upper Grande Ronde River and Lostine River.

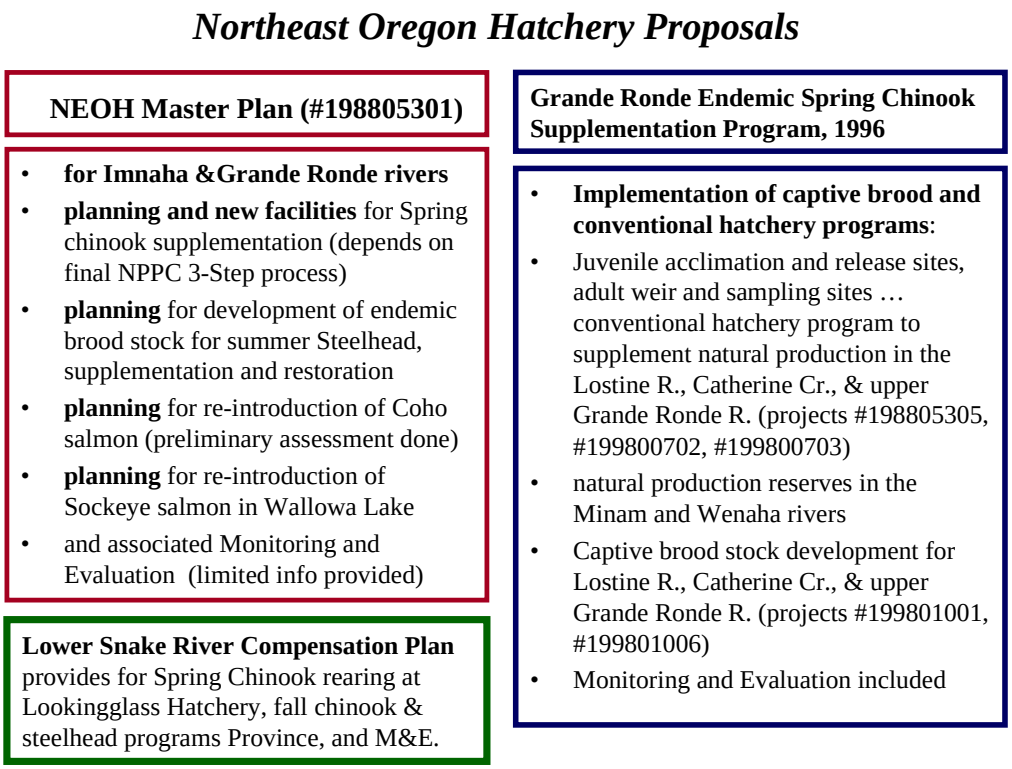
In 1998, we refocused the master planning development on how we might more realistically phase in rebuilding goals given limited regional funding and broodstock limitations related to low numbers of available returning fish. The original concept for the NEOH Master Plans called for "new" production that would be additional to the LSRCP production currently occurring at Lookingglass Hatchery. However, with the continuing decline of salmon runs and the subsequent overload this caused on Lookingglass (i.e. with the additional burdens placed on the facility), as a tool to forestall extinction of Northeast Oregon chinook, the NPT concentrated their planning efforts on alleviating stress at the facility and restructuring where existing production would occur. The goal was not new production, but address the current levels of production (i.e. currently permitted program) under LSRCP using new and improved techniques.

As a result, the Grande Ronde and Imnaha Spring Chinook Master Plan (Ashe et al. 2000) was developed with this new focus and submitted to the NPPC in April, 2000. Upon approval of the Spring Chinook Master Plan the NPPC also authorized the NPT to reinitiate the original planning scope of the project by completing a master plan for Grande Ronde coho salmon and Grande Ronde and Imnaha steelhead."

This text provides an excellent background for the tasks included in the current NEOH proposal (NEOH Master Plan, proposal #198805301) and introduces the programs included in the GRESCP. While the NEOH proposals is described as the "planning"

component of supplementation and restoration programs, the GRESCP are spring chinook programs "implemented" due to their extremely depressed returns in the mid-1990s. Future progress for tasks included in the Master Plan require review through the NPPC's 3-Step process. Many of the costs must be considered "place holders" assuming successful completion of these planning and review tasks. Five other proposals constitute the supplementation activities for spring chinook in the Grande Ronde River (Fig 1).

Figure 1. Inter-relation of the NEOH and GRESCP proposals reviewed in the Blue Mountain Province, September 2001. Color-coded boxes denote related proposals and activities.



A notable component of the GRESCP is the natural production reserves maintained in the Minam and Wenaha rivers. Spring chinook production in these rivers has not been supplemented with hatchery production but have received strays from past programs. These systems may serve as "controls" for comparison with trends in the supplemented streams in the Grande Ronde system but limited data was presented on returns in the Minam or Wenaha rivers. Monitoring of spawning escapements to these systems is included in a LSRCP project (#200109, LSRCP-Oregon Evaluation Studies) but is not included in the GRESCP activities listed above.

The artificial production programs in the Province involve four co-management agencies: Oregon Department of Fish and Wildlife, the Nez Perce Tribe, the Confederated Tribes of the Umatilla Indian Reservation, and U.S. Fish and Wildlife Service (the latter as managers of the LSRCP). Significant resources are apparently required to achieve the

cooperation and coordination to conduct these programs. However, based on the ISRP tour and their proposals, these co-managers seem to have been successful in achieving this.

Review of Specific Proposals

1. Project ID: 198805301

Northeast Oregon Hatchery Master Plan
Sponsor: Nez Perce Tribe
Subbasin: Grande Ronde
Short Description: Plan and develop conservation production facilities in the Imnaha and Grande Ronde rivers necessary to implement salmon recovery programs for native, ESA listed, spring chinook and steelhead, and reintroduction of coho and sockeye salmon.
FY02 Request: $2,714,740
3 YR Estimate: $24,232,740
ISRP Preliminary Review Comments:
Response required. As described NEOH section above, this proposal is a continuation of past planning and design efforts to develop conservation production facilities in the Imnaha and Grande Ronde rivers necessary to implement salmon recovery programs for native, ESA listed, spring chinook and steelhead, and reintroduction of coho and sockeye salmon. The tasks by species are each at different levels of preparedness with the spring chinook plans significantly in advance of the other species (NPPC Step-2 proposal submitted). The proposal contains some very good background information and description of relations to Regional Programs and other projects. Unfortunately, the more technical sections concerning objectives and methods are weaker, and monitoring and evaluation tasks similarly undefined or described (even though a large budget was identified). The ISRP identified similar concern for the objectives in their last review. We recognize though that for spring chinook these concerns for objectives and methods were addressed in the Step-One NEOH Master Plan (Ashe et al. 2000) and accepted following the ISRP review (ISRP 20000-6). ISRP questions concerning monitoring and evaluation have been addressed in the Step-2 Submittal to the NPPC (August 2001) but have not be fully reviewed at this time. We plan to complete our preliminary review in late October. Following our Provincial review though, the ISRP requests response to some general issues for consideration:

1) This proposal addresses four species for eventual restoration either through supplementation (spring chinook and steelhead through development of endemic brood stocks) or re-introduction of extirpated species (coho and sockeye salmon). NPPC authorized development of master plans for coho (November 2001) and steelhead (October 2002). For coho salmon, a feasibility analysis (Cramer and Witty 1998) concluded that “the prospect for successful introduction was good, however, annual supplementation would likely be necessary to sustain the adult return goals, due to limiting factors out of the subbasin”. The ISRP does not wish to comment on the desire of local agencies for these resources but an “implied” priority that concerns us. Do the co-managers intend to proceed with coho before or simultaneously with the steelhead programs? If so, we note that the listing of steelhead requires a higher

priority on this species and, biologically we note a concern for potential competition between these species … particularly when production of natural steelhead is depressed. Coho salmon are extremely opportunistic in their habitat use and may generate an additional impact on steelhead that has not been acknowledged. The co-managers should comment on the timing of these events and/or their understanding of these potential interactions. Our recommendation would be to defer coho re-introduction until steelhead is well established and natural populations more secure. Further, the re-introduction of sockeye salmon to Wallowa Lake should be deferred until studies of the lake ecosystem demonstrate an understanding of why kokanee production is declining. Re-introduction of sockeye will be very unlikely to succeed if the inter-specific competition in the lake is not favorable to kokanee. At this time, resources should be directed to studying this ecosystem instead of planning enhancement facilities.

2) As in the past review, the committee continues to be concerned about the emphasis on hatchery-oriented production to support recovery without some balanced approach to correcting the root problems. Two concerns should be addressed, these include the expectation of harvest on these recovering stocks and the absence of a habitat restoration plan incorporated into the master plan. As expressed previously, are we "treating the symptoms, not solutions"? The implementation of harvest must be conducted carefully to avoid the obvious conflict with allowing these listed species to spawn and recovery … the co-managers should establish precautionary guidelines for when harvest is allowed and at what rates. The habitat issues are large, but must be addressed before our investments in facilities are likely to show sustained benefits for natural production. Many habitat projects were reviewed by the committee, but within the master plan, do the co-managers have a plan to monitor the overall watershed "health" or productivity of the stocks? The sum of the individual habitat projects should be evaluated to assess success and ensure harvest rates are compatible with stock productivities in their current environments.

3) Past ISRP reviews were critical of this proposal for "failing to clearly develop a rationale for their goals and objectives (many of the latter were in fact simply tasks, not biological objectives) which were very broad and general. Most remain vaguely presented and justified. Because alternatives to development of proposed facilities will be addressed in the master plan document, it is impossible to evaluate the scientific merit of the various alternatives until the document is available for review. The Fish and Wildlife Plan does not constitute scientific justification for planning and development for coho and sockeye salmon reintroduction and steelhead supplementation." In the current proposal, objectives 5 and 6 (Section 9f) are not included in the budget summary, and four of the objectives involve monitoring and evaluation but without any clarification of tasks, methods, or intended uses. This panel continues to share the concerns expressed previously. We recognize that this likely results from the scope of activities included in one proposal but given our task of evaluating the scientific basis of the proposals … this format of presentation is unlikely to receive positive reviews without addressing the concerns expressed. Can the co-managers address these concerns or is an alternative format of necessary? For

example, four proposals with the necessary detail maybe required for technical review.

4) While the spawning escapement monitoring in the Minam and Wenaha rivers are not included as an activity in this NEOH Master Plan, the comparability of monitoring programs in these treated streams and those control streams is of concern. For a valid comparison between systems, similar evaluation programs should be conducted in each system. At present, our understanding of the surveys in the Minam and Wenaha rivers is that visual index surveys are conducted; whereas in the Lostine, Catherine, and Grande Ronde rivers more quantitative surveys are now conducted (weirs and mark-recapture). The co-managers should comment on the comparability of these surveys and/or how they could evaluate this concern.

At present, this review panel is unable to support the proposal, and its large budget, due to its uncertain scientific basis. Based on the need for a "sound scientific basis" to the proposals, the committee can not adequately review these proposals due to a lack of biological or quantitative goals, measurable objectives, and methodology. Our experience with the Step-1 process for spring chinook indicated that these can be developed but they are not present in this submission. Our suggestion would be to defer final comment until the Step processes begin but the issue of allowing for substantial budgets (without a strong basis presented) would have to be addressed by the Council.

2. Project ID: 198805305

Northeast Oregon Hatcheries Planning (ODFW)
Sponsor: Oregon Department of Fish and Wildlife
Subbasin: Grande Ronde
FY02 Request: $79,376
3 YR Estimate: $248,187

and

3. Project ID: 199800704

Northeast Oregon Hatcheries Implementation (ODFW)
FY02 Request: $206,048
3 YR Estimate: $633,197
Short Description: Work with co-managers to implement the Grande Ronde Endemic Spring Chinook Supplementation Program (GRESCSP).
ISRP Preliminary Review Comments:
Response required. These proposals provide for ODFW to work with co-managers to implement the Grande Ronde Endemic Spring Chinook Supplementation program. The activities are largely related to operating and maintenance expenses for program coordination, the safe transport of juveniles and brood adults from field sites to the Lookingglass Hatchery, and assistance to the Fish Health Pathologist (USFWS). Minimal funds are requested for M&E but the activities seem more involved than would be provided by the limited M&E budget ($20,973 in FY02). A very strong cost sharing budget is included in this proposal: $3 million per year from the LSRCP for

Lookingglass and Irrigon hatcheries, M&E and fish health inspections, plus $70,000 for the ODFW District Biologist. The activities are well integrated with the associated proposals (#199800702 and #199800703) and captive brood program. A response is requested, however, concerning the activities to be included in M&E (Objective 4, section 9f). What will be undertaken and how are the tasks to be addressed with such a limited budged? Is this proposal only including staff time for participation?

4. Project ID: 199800702

Grande Ronde Supplementation: Lostine River O&M and M&E
Sponsor: Nez Perce Tribe
Subbasin: Grande Ronde
Short Description: Operate adult trapping and juvenile acclimation facilities and conduct monitoring and evaluation in the Lostine River to implement the Lostine component of the Grande Ronde Basin Endemic Spring Chinook Supplementation Program (GRESP).
FY02 Request: $609,302
3 YR Estimate: $1,902,671
ISRP Preliminary Review Comments:
Fundable, without response. This NPT proposal coupled with the matching CTUIR proposal (#199800703) provides the core activities for the GRESCP. The Nez Perce Tribe is responsible for implementation, co-ordination, and facilitation of the Lostine River component of the GRESCP. Tasks included in the proposal include projection co-ordination with the co-managers (ODFW, CTUIR, USFWS), operation and maintenance of the Lostine River acclimation site, operation and maintenance of the adult weir and trapping site, extensive M&E programs, and reporting. The proposal is well written providing good background and relationships to other projects, annual summaries of work since 1997 including past costs, and detailed goals and objectives. Minor comments on the report include that adult population sizes for 1999 and 2000 return years were not included in the result section (section 9e), and that more detailed information on the mark-recapture estimates of population sizes in the river should be provided (Objective 6, sampling surveys, etc.). While the work seems well organized, reference to published reports or records of this work would have strengthened the technical presentation. For future proposals, the authors should report results of the genetic sampling and analyses. The proposal notes this task and contract for analyses but does not provide any insight into results to-date.

The proposal seems to have responded to many of the comments in the past ISRP review. For example, while the objectives continue to simply state tasks that might address biological goals, the goals of the program are stated in the beginning of section 9f. One continued limitation is the limited collection of habitat data (temperature and discharge information) at trap sites. During the tour, concerns were expressed about habitat quality in the lower Lostine River, but the proposal does not include any consideration of this as a limiting factor in smolt survival etc.

Overall, the ISRP wished to acknowledge a well-prepared proposal with a strong M&E component. We look forward to reviewing results and publication of this work.

5. Project ID: 199800703

Facility O&M and Program M&E for Grande Ronde Spring Chinook Salmon and Summer Steelhead
Sponsor: Confederated Tribes of the Umatilla Indian Reservation
Subbasin: Grande Ronde
Short Description: Develop, implement, and evaluate integrated conventional and captive brood hatchery projects to prevent extinction and stabilize populations of threatened spring chinook salmon and summer steelhead populations in the Grande Ronde River.
FY02 Request: $702,010
3 YR Estimate: $2,405,288
ISRP Preliminary Review Comments:
Response required. This CTUIR proposal coupled with the matching NPT proposal (#199800702) provides the core activities for the GRESCP. The CTUIR is responsible for implementation, coordination, and facilitation of the Catherine Creek and upper Grande Ronde component of the GRESCP, plus this proposal involves some steelhead activities. Tasks included in the proposal include projection coordination with the co-managers (ODFW, NPT, USFWS), operation and maintenance of the two acclimation sites, operation and maintenance of the adult weir and trapping sites, extensive M&E programs, and reporting. In general the historical information and relations between projects are well described and informative. Unfortunately, this proposal lacks the detailed information and tasks that were presented in proposal #199800702 even though the proposals essentially for the same program activities. The goals are certainly implied in the proposal but the objectives are stated as operations, not as measurable outcomes and some task merely re-state the objective. Objective 2 requests over $100,000 for meeting and communications with no further details or justification. Objective 5 concerns monitoring success (increasing returns and maintaining genetic diversity) but provides no insight into activities and methods. Further, objective 4 and 5 include statements of assumptions but the assumptions stated are essential aspects of the investigation and must be evaluated, not assumed. The proposal includes a section on Adaptive Management but the paragraph describes how new information will be incorporated into procedures. This is not the intent of adaptive management. Adaptive management involves designed experimental treatments, assessments, and responses that are pre-described … not just responding to a trial and error process. The level of detailed provided concerning M&E does not merit the budget requested.

These comments are unfortunately quite similar to the ISRP comments from the last review. After responses had been received in the last review, the ISRP concluded "Delay funding until the sponsor provides an adequate detailed study design to BPA such as that the sponsors identify as being in their companion project 9801001. The response focused on justifying the program, but that was not the ISRP's primary concern." Following the ISRP tour (Sept. 2001) and discussion with those involved, plus given the quality of the associated proposal (#199800702), it seems apparent to this review panel that a proposal

with appropriate technical standards can be developed, but it has not been received. We suggest the principal investigators use this "response loop" process to address these concerns and complete this proposal.

6. Project ID: 199801001

Grande Ronde Basin Spring Chinook Captive Broodstock Program
Sponsor: Oregon Department of Fish and Wildlife
Subbasin: Grande Ronde
Short Description: Rapidly increase numbers of chinook salmon in the Grande Ronde Basin while protecting genetic diversity, and develop and evaluate methodologies for captive broodstock programs.
FY02 Request: $739,096
3 YR Estimate: $2,329,994
ISRP Preliminary Review Comments:
Fundable. No response required. This is a well-written proposal that focuses on research and evaluation of alternative approaches to supplementation through captive broodstock. The proposal presents a thorough technical background that puts the project in context, articulates conditions project success, and lists the operating assumptions behind the experimental captive broodstock program. The rationale and significance to regional programs is detailed and clear. The project is well integrated with numerous other efforts in the Grande Ronde Subbasin. The project history section includes results to date, with interpretation of those results and publications produced.

The proposal would be structurally improved if the tasks were associated with specific objectives, rather than presenting a list of 8 objectives with tasks listed under "operation and maintenance" and "monitoring and evaluation." The presentation of methods is thorough.

Some minor comments for consideration are:

1) DNA samples are being collected but not processed apparently due to an uncertianty concerning what will be derived from this work. Information could be gained at several levels of detail. Samples of the juveniles collected for grow-out to brood stock could be examined to test whether many sibs were collected in the randomized samples. By sampling the brood adults, these data could be compared with the mature progeny (upon return) to investigate the numbers of parents represented in the population (an important determinant of the genetically effective population size of the natural stock). We would recommend the samples be processed and consultations with a population geneticist.
2) There is limited description of the spawning matrix referred to. A reference for more detail should be provided and more detail on the spawning protocols provided.
3) The reduced fecundity in the captive brood stock will reduce the F_1 progeny produced. The level of reduction is substantial but no response or investigation was proposed? It is not evident in the proposal if the fecundity was reduced due to reduced body size, or is there concern for the nutrition and health of these fish?
4) PIT tags are applied to study survival by family and/or treatment, but no indication was presented about how the number of tags applied was determined. This is an

important project that merits careful evaluation. The principles should ensure that adequate numbers of tags are being applied in order to assess the questions of interest. A statistical assessment of the number of tags applied should be undertaken and reported.

5) This is a unique opportunity to study the genetics of these fish. While the proposal is well prepared, there is an apparently lack of quantitative genetic interest. This aspect of the study may simply be under-stated in the text but if not, then an expert in this field should be consulted to review these procedures and ensure that opportunities re not be lost.

In conclusion, while we endorse this proposal and the need for a captive brood program when it was implemented, it is wise to re-state the advice from the ISRP's last review:

> "Even though the proposal acknowledges that threats to adult survival, particularly habitat and passage, must be solved for the broodstock programs to be successful conservation or mitigation tools, to fund these captive broodstock programs without concomitant emphasis on solving the root problems seems financially foolish and futile."

This comment is not targeted at this particular proposal but is an on-going consideration for the NEOH Master Plan and the need to balance culture activities with efforts to correct the original causes of the problem.

7. Project ID: 199801006

Captive Broodstock Artificial Propagation
Sponsor: Nez Perce Tribe Department of Fisheries Resources Management
Subbasin: Grande Ronde
Short Description: Implement and evaluate the captive broodstock project through the collection of juvenile salmon from the wild and maintaining them in captivity. The founding generation is spawned and the resulting F1 generation is released back to the parental stream.
FY02 Request: $170,177
3 YR Estimate: $526,000
ISRP Preliminary Review Comments:
Response required. This proposal is for monitoring and evaluation of progeny of the captive brood stock collected and reared under project #199801001. The proposal involves co-ordination with state and federal agencies, assistance in the monitoring and evaluation of juveniles and brood adults reared at Bonneville Hatchery and Manchester Marine Laboratory, monitoring and evaluation of the F_1 generation juveniles and returning adults, and reporting. Like proposal #199801001, this is a well-written proposal that focuses on research and evaluation of alternative approaches to supplementation through captive broodstock. The proposal presents a thorough technical background that puts the project in context, the rationale and significance to regional programs is detailed and clear, and project history section includes results to date, with some comparisons between stocks and/or rearing treatments. Objectives are again stated as tasks, and not measurable comparisons or tests, but the intentions in this context are clear.

A response is requested, however, concerning the PIT tagging of the F_1 juveniles. Section 8 of this proposal indicates that 8,000 PIT tags are included (Objective 3.1). It is not evident from the text, however, if this is the total number of PIT tags allocated to all three populations (are other PIT tags provided by other sources, etc.), and how are these tags allocated between stocks, treatments, and families? This concern needs to be clarified in this proposal. A statistical basis to the tagging program would clearly strengthen this proposal.

In a past review, there was a question concerning overlap between this program and M&E associated with the conventional hatchery production activities. Our understanding is that these M&E tasks are discrete. However, there is an important question associated with these marking programs. The comparison of natural, conventional, and captive brood production will obviously be based on the extensive use of PIT tags in many of the proposals reviewed. Have the co-managers considered the adequacy of marking rates to compare these three types of spring chinook production, and if so, what level of difference in performance may be detectable? This latter issue is not only relevant to this one proposal, but other NPT proposals have noted methods for estimating the numbers of PIT tags required for comparisons. The NPT may be able to advise on this question.
