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Preliminary Review

of

Fiscal Year 2003 Proposals

for the

Upper and Middle Snake, Columbia Cascade, and Lower Columbia and Estuary Provinces

ISRP 2002-2
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ISRP Preliminary Review of Fiscal Year 2003 Proposals for the Upper and Middle Snake, Columbia Cascade and Lower Columbia and Estuary Provinces

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ProjectID	Title	Sponsor	Subbasin	FY03 Request	5YR Estimate	Response Needed?	Page
Midde Snake Province							18
32001	Evaluate the Feasibility Artificial Production Facility DVIR	SPT-DVIR	Owyhee	$300,000	$2,823,000	Yes	27
32002	Implement Best Management Practices to improve riparian habitat and upland conditions within the Billingsley Creek watershed.	GSCD	Snake Upper Middle	$114,635	$459,175	Yes	30
32003	White Sturgeon put, grow, and take fishery feasibility assessment, Oxbow/Hells Canyon reservoirs.	NPT	Snake Lower Middle	$356,800	$848,800	Yes	29
32004	Effects of culverts on fish population persistence: tools for prioritizing fish passage restoration projects in the Middle Snake Province	RMRS	Boise	$23,600	$310,340	Yes	30
32005	Burns Paiute Fish and Wildlife Mitigation Coordinator	BPFW	Malheur	$53,978	$220,956	No - Not Applicable	35
32006	Compare the parr-smolt transformation of nonanadromous and anadromous populations of Oncorhynchus mykiss	IDFG	Weiser	$90,530	$286,287	Yes	22
32007	Bull trout habitat restoration/protection program - Bruneau Subbasin	SPT-DVIR	Bruneau	$218,374	$1,658,413	Yes	22
32008	Wildlife Inventory and Habitat Evaluation of Duck Valley Indian Reservation	SPT-DVIR	Owyhee	$127,461	$271,340	Yes	25
32009	Squaw Creek Cooperative Fisheries Restoration Project	RC&D	Payette	$43,750	$790,250	Yes	20
32010	Lookout Mountain Road Decommissioning	BLM	Snake Lower Middle	$49,150	$75,150	Yes	29
32011	Mitigation of marine-derived nutrient loss in the Boise-Payette-Weiser subbasin.	IDFG, WSU, UI, PNW, OSC	Boise	$354,789	$1,072,548	Yes	20

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32012	Implement Best Management Practices to improve riparian habitat and upland conditions within the Clover Creek watershed.	BRSCD	Bruneau	$44,500	$91,999	Yes	23
32013	Fishery Restoration of the Gold Fork River, Idaho	IDFG and IOSC	Payette	$344,500	$2,429,500	Yes	21
32014	Feasibility Study of Transporting Salmonids Through a Translucent Fish Passage System	SPT-DVIR	Owyhee	$102,050	$977,050	No - Not Fundable	28
32015	Deadwood River and Clear Creek Drainages Roads Analysis and Repair	USFS	Payette	$105,800	$1,088,800	Yes	21
32016	Assess the feasibility of the Upper Malheur Watershed to support the reintroduction of anadromous populations above the Beulah & Warmsprings Reservoir	BPT	Malheur	$168,896	$298,896	Yes	34
32017	Suppress Brook Trout Populations in the Upper Malheur Subbasin.	BPT	Malheur	$221,473	$1,068,091	No - Not Fundable	35
32018	Williams Ranch Fish and Wildlife Acquisition Project	BPT	Malheur	$2,259,392	$3,194,992	Yes	33
32019	Logan Valley Fish and Wildlife Project- Stanbro Ranch Acquisition	BPT	Malheur	$1,355,286	$1,965,286	Yes	33
32020	Inventory and Assessment of Stream/Riparian Resources, upper Boise and upper Payette River Subbasins, Idaho	WHA	Boise	$176,000	$176,000	Yes	19
32021	Lower Boise River Wetlands Restoration Project	Pioneer Irrigation District	Boise	$164,500	$3,852,000	Yes	19
198815600	Implement Fishery Stocking Program Consistent With Native Fish Conservation	SPT - DVIR	Owyhee	$211,688	$1,102,688	Yes	26
199405400	Tools for Managing Bull Trout Populations Influenced by Nonnative Brook Trout Invasions	ODFW	Powder	$555,981	$1,697,881	Yes	36
199501500	Lake Billy Shaw Operations and Maintenance and Evaluation (O&M, M&E)	Sho-Pai Tribes DVIR	Owyhee	$293,000	$1,326,000	Yes	26

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199505701	Southern Idaho Wildlife Mitigation - Middle Snake	IDFG & IOSC	Boise	$3,889,703	$21,913,421	Yes	18
199505703	Southern Idaho Wildlife Mitigation - Shoshone-Paiute Tribes	SPT-DVIR	Owyhee	$1,813,746	$7,683,164	Yes	24
199701100	Enhance and Protect Habitat and Riparian Areas on the DVIR	SPT - DVIR	Owyhee	$344,696	$1,879,696	Yes	25
199701900	Evaluate The Life History Of Native Salmonids In The Malheur Basin	BPT	Malheur	$324,401	$991,485	Yes	34
199800200	Snake River Native Salmonid Assessment	IDFG and IOSC	Snake Lower Middle	$346,375	$1,877,375	Yes	28
200000900	Logan Valley Wildlife Mitigation Project/ O&M	BPT	Malheur	$146,842	$555,974	Yes	32
200002700	Malheur River Wildlife Mitigation Project	BPT	Malheur	$694,880	$2,484,180	Yes	31
200007900	Assess Resident Fish Stocks Of The Owyhee/Bruneau Basin, D.V.I.R.	Sho-Pai Tribes - DVIR	Bruneau	$232,000	$1,288,000	Yes	22
Total Request for Middle Snake				**$15,528,776**	**$66,758,737**		
Upper Snake Province							36
33001	Assessment of genetic population structure and risk of introgression and hybridization to native trout in the Mid and Upper Snake River Provinces	IDFG and IOSC	Upper Snake	$228,458	$713,154	Yes	41
33002	Establish Instream Flow and Reservoir Pool Habitat for Native and Other Trout in the Upper Snake River/American Falls Fragment Area	IDFG	Upper Snake	$104,100	$1,055,700	No - Not Fundable	43
33003	Sage Grouse Distribution and Habitat Use in the Upper Snake River Basin, Blackfoot and Willow Creek Drainages.	IDFG	Upper Snake	$211,716	$548,316	No - Not Fundable	46
33004	Survival of adfluvial Yellowstone cutthroat trout in the upper Blackfoot River drainage	IDFG	Upper Snake	$137,500	$374,503	Yes	42
33005	Monitoring Avian Productivity and Survivorship in Sensitive Habitats in the Upper Closed Basin	TREC	Upper Closed Basin	$76,233	$266,099	No - Not Fundable	39

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33006	Monitoring Avian Productivity and Survivorship on Mitigation Lands and Sensitive Habitats in the Upper Snake Headwaters	TREC	Headwaters	$56,789	$204,309	No - Not Fundable	37
33007	Implement Best Management Practices to improve riparian habitat and upland conditions in the Medicine Lodge watershed.	Clark SCD	Upper Closed Basin	$98,902	$564,510	Yes	39
33008	Assessing effects of Columbia River Basin anadromous fish flow management on the aquatic ecology of the Henry's Fork watershed	HFF	Upper Snake	$211,596	$618,280	Yes	43
33009	Improve Yellowstone cutthroat trout recruitment and survival in the South Fork of the Snake River	IDFG	Headwaters	$264,700	$2,254,700	Yes	38
33010	Shoshone-Bannock Tribes Fish Production Program	SBT	Upper Snake	$90,000	$90,000	Yes	45
33011	Implementing land use for resource and community sustainability at the county and regional level.	IDFG, U of I, MSU, OSC	Upper Snake	$243,051	$721,651	Yes	46
33012	Flow Augmentation In The Upper Snake River Sub-Basin To Benefit Anadromous, Resident Fish And Wildlife Species.	USBWU	Upper Snake	$1,117,911	$15,981,384	Yes	44
33013	Evaluation of Pisces Fish Protective Water Intake System	BPI	Upper Snake	$273,500	$273,500	Yes	45
199201000	Habitat Restoration/Enhancement Fort Hall Reservation	SBT	Upper Snake	$175,000	$923,500	Yes	40
199505700	Southern Idaho Wildlife Mitigation Program	SBT	Upper Snake	$3,592,141	$20,675,052	Yes	40
199505702	Southern Idaho Wildlife Mitigation - Upper Snake	IDFG & IOSC	Headwaters	$4,068,153	$22,877,616	Yes	36
Total Request for Upper Snake				**$10,949,750**	**$68,142,274**		

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ProjectID	Title	Subbasin	Sponsor	FY03 Request	5YR Estimate	Response Needed?	Page
29001	Evaluation of 1872 Water Rights to Supplement Flows Between Basins	Okanogan	CCT	$77,000	$315,000	Yes	74
29002	Conjunctive Use and River Enhancement (CURE) for Habitat Improvement in the Upper Methow River	Methow	CBC	$500,000	$5,082,050	Yes	65
29003	Acquire Property for Partial Wildlife mitigation	Okanogan	CTCR	$1,500,000	$7,500,000	Yes	96
29004	Control Okanogan Weeds -Invasive Species Project	Okanogan	CTCR	$299,933	$1,484,025	Yes	95
29005	Validate Occurrence and Assess Abundance of Wildlife Species	Okanogan	CTCR	$194,136	$534,908	Yes	92
29006	Supplement Spring Chinook in Early Winters Creek	Methow	MSRF	$231,000	$251,000	Yes	71
29007	Okanogan Kelt Reconditioning	Okanogan	CCT	$151,387	$662,663	Yes	86
29008	Adult Passage Counting and Trapping at Zosel Dam	Okanogan	CCT	$108,474	$623,474	Yes	85
29009	Acquire Dole-Beebe Property and Associated Water Rights	Columbia Upper Middle	WDFW	$896,500	$929,700	Yes	48
29010	Restore Passage on Private Lands in Beaver Creek Drainage to Benefit Spring Chinook, Steelhead and Bulltrout	Methow	WDFW	$239,774	$1,204,074	Yes	62
29011	Sharp-tailed Grouse and Mule Deer Habitat Restoration and Enhancement on Sinlahekin Wildlife Area	Okanogan	WDFW	$0	$0	Withdrawn	97
29012	Replace Rockview Diversion with Groundwater Withdrawal and Restore Instream Habitat	Methow	WDFW	$141,954	$296,454	Yes	68
29013	Acquire Land Adjacent to Chiliwist Creek and Develop Summer Chinook and Summer Steelhead Acclimation Pond	Okanogan	WDFW	$823,952	$1,179,517	Yes	90
29014	The Effects of Impoundment on Fish and Amphibian Habitat Use in Eastern Washington	Entiat	WDFW	$106,187	$441,665	Yes	53

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29015	Thermal Imaging of the Okanogan and Wenatchee Watersheds	Okanogan	CCT	$196,654	$261,654	No - Fundable	77
29016	Return of Okanagan Sockeye Salmon to their historic range.	Okanogan	CCT/ ONFC	$175,000	$1,509,000	No - Fundable	86
29017	Prepare a Master Plan for Protecting and Restoring Salmon Habitat in Okanagan River	Okanogan	CCT/ ONFC	$59,000	$59,000	Yes	72
29018	Analyze ground-water and surface-water exchanges influencing anadromous salmonid habitat in the Methow River and its major tributaries	Methow	USGS	$188,937	$247,649	Yes	69
29019	Characterize and Assess Wildlife-Habitat Types and Stuctural Conditions for Okanogan sub-basin	Okanogan	NHI, CCT	$27,907	$27,907	No - Fundable	93
29020	Beaver CR Campground Rehabilitation	Methow	OCD	$60,445	$71,095	No - Not Fundable	63
29021	Develop a Physical Processes Method (PPM) to Supplement Habitat Conditions Analysis and Subbasin Planning	Okanogan	Golder Assoc. Inc.	$295,229	$1,238,702	No - Not Fundable	74
29022	Omak Creek Water Temperature Model	Okanogan	CCT	$245,000	$385,000	No - Not Fundable	82
29023	Restoration/Protection of Kartar Creek In-stream, riparian, and Wetland Habitats	Okanogan	CCT	$437,823	$1,591,035	Yes	84
29024	Analysis of multiple land uses and their effects to shrub-steppe habitat and wildlife species, such as roads, patterns of development and agriculture.	Columbia Upper Middle	DCTLS	$320,000	$416,000	No - Not Fundable	49
29025	Columbia Cascade Province Pump Screening	Methow	WDFW, YSS	$218,918	$916,142	Yes	67
29026	Hanan-Detwiler Passage Improvements	Entiat	WDFW, YSS	$85,000	$95,000	Yes	54
29027	Comprehensive Inventory and Prioritization of Fish Passage and Screening Problems in the Wenatchee and Entiat Subbasins	Wenatchee	WDFW, YSS	$361,585	$1,338,952	Yes	60
29028	Fabricate and Install Three New Fish Screens on Wenatchee River Diversions	Wenatchee	WDFW, YSS	$235,000	$291,135	Yes	60

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29029	Perform Range Forage Inventory for Large Ungulates	Okanogan	CTCR	$159,704	$462,252	Yes	94
29030	Early life history and survival of spring chinook salmon and steelhead in the Methow River Basin	Methow	PNNL	$382,939	$1,150,939	Yes	64
29031	Out Year Operations and Maintenance Costs Required to Implement/Carry out MVID Rehabilitation Project	Methow	YIN		$260,000	Yes	70
29032	Okanogan Basin Water Strategy Development and Pilot Projects	Okanogan	CCT	$191,920	$1,260,600	Yes	76
29033	Design and Conduct Monitoring and Evaluation Associated With Reestablishment of Okanogan Basin Natural Production	Okanogan	CCT	$770,152	$2,688,802	Yes	73
29034	Life History Study of Salmonid Rearing In The Upper Methow River	Methow	YIN	$273,710	$788,793	Yes	65
29035	Okanogan River Riparian and Upland Fish and Wildlife Habitat Aquisition	Okanogan	SP	$2,957,000	$6,070,000	Yes	96
29036	Ali Long Rearing Channel Habitat Improvements- Upper Methow River	Methow	YIN	$58,500	$95,500	No - Not Fundable	66
29037	Ecosystem Diagnosis and Treatment in the Columbia Cascade Province	Methow	WDFW, YN, CCT	$925,563	$1,816,938	Yes	63
29038	Supplement Summer Steelhead Eightmile Creek/Chewuch River	Methow	MSRF	$205,000	$225,000	Yes	71
29039	The effects of fine sediment on the hyporheic zone: monitoring and evaluating the influence of hyporheic exchange flows on stream temperature.	Wenatchee	USFS	$102,039	$318,525	Yes	59
29040	OK-11 Develop and Propagate Local Okanogan River Summer/Fall Chinook	Okanogan	CCT	$602,000	$1,496,000	Yes	89
29041	Evaluate Distribution, Abundance, Genetic Structure, and Habitat Use of Bull Trout Populations in the Columbia Cascade Province	Columbia Upper Middle	USFWS	$186,366	$554,142	No - Fundable	50
29042	Selective Fish Collection and Harvesting Gear	Okanogan	CCT	$231,000	$646,000	Yes	81
29043	SSHIAP - Columbia Cascade Province	Columbia Upper Middle	WDFW	$390,000	$540,000	Yes	51

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29044	Protecting Habitat on Private Lands in the Methow Watershed	Methow	N/A	$1,153,100	$3,459,300	Yes	67
29045	Protect and Restore Salmon and Steelhead Habitat at the Similkameen/Okanogan River Confluence	Okanogan	Upper Columbia RFEG	$239,700	$1,338,531	No - Fundable	85
29046	Develop a Coordinated Resource Management Plan for Beaver Creek and plan and implement habitat restoration activities.	Methow	OCD	$51,783	$133,783	Yes	61
29050	Phase I Okanogan River Spring Chinook Production	Okanogan	CCT	$112,000	$1,960,000	Yes	89
29051	Develop Local Okanogan River Steelhead Brood Stock	Okanogan	CCT	$192,000	$1,630,000	Yes	91
29052	Spatial and Temporal Occurrence of Salmonid Pathogens in the Upper Middle Mainstem Subbasin of the Columbia Cascade Province	Columbia Upper Middle	WSU	$220,832	$802,097	No - Fundable	52
29053	Icicle/Wenatchee Habitat Acquisition	Wenatchee	CDLT	$1,547,750	$1,601,750	Yes	61
29054	Stream Gaging Installation and Operations	Okanogan	Ecology	$395,000	$593,000	Yes	78
29055	Columbia Cascade Water Rights Acquisition	Okanogan	Ecology	$554,875	$1,624,625	Yes	79
29056	Establish a Water Cleanup Plan (temperature TMDL) for the Okanogan subbasin	Okanogan	Ecology	$0	$0	NA - Combined with 29015	78
199604000	Evaluate The Feasibility And Risks Of Coho Reintroduction In Mid-Columbia	Wenatchee	YN	$2,412,000	$14,671,200	Yes	56
199604200	Restore and Enhance Anadromous Fish Populations and Habitat in Salmon Creek	Okanogan	CCT	$4,091,366	$11,170,836	No - Not Fundable	80
199609400	Increase sharp-tailed grouse and mule deer populations and enhance shrubsteppe/riparian habitats on the Scotch Creek Wildlife Area.	Okanogan	WDFW	$461,401	$2,083,081	Yes	91
200000100	Improvement of Anadromous Fish Habitat and Passage in Omak Creek	Okanogan	CCT	$122,717	$542,717	Yes	81
200000200	Final Phase of the Chumstick Culvert Replacement and Habitat Restoration Enhancement	Wenatchee	CCCD	$326,750	$488,700	Yes	55
200001300	Evaluate An Experimental Re-introduction of Sockeye Salmon into Skaha Lake	Okanogan	CCT	$18,096	$18,096	No - Fundable	86
Total Request Columbia Cascade				**$27,512,058**	**$89,444,008**		

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ProjectID	Title	Sponsor	Province	Subbasin	FY03 Request	5YR Estimate	Response Needed?	Page
30001	Historic habitat opportunities and food-web linkages of juvenile salmon in the Columbia River estuary: Implications for managing flows and restoration	NWFSC/ NMFS	Columbia Estuary	Columbia Estuary	$597,559	$2,698,559	Yes	110
30002	Optimization of FCRPS Impacts on Juvenile Salmonids: Restoration of Lower-Estuary and Plume Habitats	OHSU	Columbia Estuary	Columbia Estuary	$435,192	$1,206,325	Yes	108
30003	Evaluation of Two Captive Rearing Methods for Assisting with Recovery of Naturally Spawning Populations of Steelhead and Coho Salmon	USFWS	Columbia Estuary	Elochoman	$446,101	$1,939,251	No - Fundable	100
30004	Blind Slough Restoration Project - Brownsmead, Oregon	CREST	Columbia Estuary	Columbia Estuary	$173,550	$193,550	Yes	119
30005	Grays River Watershed and Biological Assessment	LCFRB; PSMFC; PNNL	Columbia Estuary	Grays	$474,734	$1,165,430	Yes	102
30006	Effectiveness monitoring of the Chinook River estuary restoration project.	Sea Resources	Columbia Estuary	Columbia Estuary	$124,804	$444,804	Yes	102
30007	An Acoustic Tracking Array for Studying Ocean Survival and Movements of Columbia River Salmon	Kintama Research Corporation	Columbia Estuary	Columbia Estuary	$2,930,535	$7,345,735	Yes	113
30008	Instream evaluation of populations, migration timing, individual adult return rates, and wild-hatchery interactions of 3 naturally produced salmonids	USFWS	Columbia Estuary	Elochoman	$238,740	$1,296,140	Yes	100
30009	Coastal Cutthroat Movements in the Columbia River Estuary	USFWS	Columbia Estuary	Columbia Estuary	$0	$0	Withdrawn	114
30010	Canada-USA Shelf Salmon Survival Study	DFO	Columbia Estuary	Columbia Estuary	$418,800	$2,094,000	Yes	111

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30011	Preserve and Restore Columbia River Estuary Islands to Enhance Juvenile Salmonid and Columbian White-tailed Deer Habitat.	USFWS & CLT & USGS	Columbia Estuary	Columbia Estuary	$719,437	$1,372,687	Yes	120
30012	Compare Bacterial Fish Pathogen Populations in Hatchery Water and in Adjacent Creek Water and Evaluate Possibile Disease Transfer Between Them.	USFWS	Columbia Estuary	Elochoman	$71,678	$106,165	No - Not Fundable	101
30013	Role of Bacteria as Indicator Organisms for Watershed Assessment and in Determining Fish Pathogen Relationships with Fauna of Abernathy Creek	USFWS	Columbia Estuary	Elochoman	$71,100	$189,690	Yes	101
30014	Map Subtidal Large Woody Debris and Other Habitat Features in Relation to Fish Distribution in the Lower Columbia River Estuary	Battelle Marine Sciences Laboratory	Columbia Estuary	Columbia Estuary	$134,070	$409,688	No - Not Fundable	114
30015	Lower Columbia River and Columbia River Estuary Ecosystem Monitoring and Data Management	LCREP	Columbia Estuary	Columbia Estuary	$472,000	$3,268,000	Yes	116
30016	Implement the Habitat Restoration Program for the Columbia Estuary and Lower Columbia River	LCREP, CREST	Columbia Estuary	Columbia Estuary	$5,236,200	$29,036,200	Yes	116
30017	Columbia River Tidewater Assessment for Recovery Planning	UP	Columbia Estuary	Columbia Estuary	$137,338	$137,338	Yes	110
30018	Salmonid Population and Habitat Monitoring in the Oregon Portion of the Columbia Estuary	ODFW	Columbia Estuary	Columbia Estuary	$528,913	$2,922,578	Yes	114
31001	Artificial production facilities improvements to support Lower Columbia chum salmon reintroduction into the Chinook River	Sea Resources	Lower Columbia	Columbia Estuary	$41,865	$41,865	Yes	103
31002	Wildlife Habitat Protection, Lower McKenzie Watershed (Jaqua)	TNC	Lower Columbia	Willamette	$2,321,025	$3,300,501	Yes	139
31003	Distribution and life history characteristics of lampreys in tributaries of the lower Columbia River Basin	USFWS	Lower Columbia	Columbia Lower	$173,281	$1,626,205	Yes	98
31004	Salmon Carcass Enrichment -- Willamette (Clackamas) & Sandy Subbasins	USFS	Lower Columbia	Willamette	$509,858	$1,607,327	Yes	134

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31005	Incorporating Pit Tag Technology to Evaluate and Monitor the Reintroduction Effort for Anadromous Salmonids in the Upper Cowlitz Watershed	WDFW	Lower Columbia	Cowlitz	$257,130	$971,730	Yes	129
31006	Protect Wood's Landing Chum Spawning Site	City of Vancouver	Lower Columbia	Columbia Lower	$1,352,360	$1,352,360	Yes	104
31007	Distribution and seasonal habitat use of ESA-listed salmonid species in City of Portland tributary streams	COP	Lower Columbia	Willamette	$62,000	$124,000	Yes	140
31010	Re-open Off-channel Habitat for Lower Columbia ESU	ESA Program	Lower Columbia	Willamette	$449,000	$589,000	No - Not Fundable	128
31011	Renaturalize Functional Floodplain Habitat within the Portland Reach of the Lower Willamette River	COP	Lower Columbia	Willamette	$524,500	$865,500	No - Not Fundable	129
31012	Leveraging Conservation Easements for Fish and Wildlife in the Willamette Basin	CPRC&D	Lower Columbia	Willamette	$68,090	$374,660	Yes	135
31013	Investigate Re-establishing Anadromous Fish Populations Above man-made Barriers	ODFW	Lower Columbia	Willamette	$221,977	$1,419,768	Yes	125
31014	Evaluate juvenile salmonid use of restored floodplain wetlands in the Lower Columbia River Estuary	DU	Lower Columbia	Columbia Lower	$150,000	$450,000	Yes	120
31015	Sturgeon Lake/Dairy Creek Restoration	WMSWCD	Lower Columbia	Columbia Lower	$121,000	$256,000	Yes	121
31016	Calapooia River Flow Acquisition and Fish Passage Assessment	ODFW	Lower Columbia	Willamette	$53,500	$110,500	Yes	126
31017	Monitor and evaluate the success of hatchery salmonid reproduction for reintroduction of anadromous salmonids to the upper Cowlitz Basin	WDFW	Lower Columbia	Cowlitz	$183,661	$1,100,161	Yes	130
31018	Willamette Basin Riparian Project	Marion SWCD	Lower Columbia	Willamette	$784,765	$2,341,435	Yes	137
31019	Fish Passage Assessment and Prioritization Program	DLUT	Lower Columbia	Columbia Lower	$72,432	$143,682	Yes	122

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31020	Monitor Coweeman River Salmonid Populations	WDFW	Lower Columbia	Cowlitz	$277,962	$1,009,366	Yes	131
31021	Reduction of gravel road sediment production & interruption of sediment delivery to streams	DLUT	Lower Columbia	Columbia Lower	$238,436	$510,674	No - Not Fundable	123
31022	Establish a Water Cleanup Plan (temperature TMDL) for the East Fork of the Lewis subbasin	Ecology	Lower Columbia	Lewis	$118,000	$168,000	Yes	132
31023	Stream Gaging Installation and Operations in the Lewis, Salmon/Washougal, and Gray/Elochoman Subbasins	Ecology	Lower Columbia	Cowlitz	$395,000	$593,000	Yes	133
31024	Protect, Enhance and Maintain Wetland, Riparian and Upland Habitat on the Shillapoo Wildlife Area	WDFW	Lower Columbia	Columbia Lower	$0	$515,310	Yes	123
31025	Construct Fish Screen and Fish Passage Improvements at Lebanon Diversion Dam on South Santiam River	City of Albany, Oregon	Lower Columbia	Willamette	$420,000	$3,544,000	Yes	136
31027	Movements and Survival of Juvenile and Adult Bull Trout	USFWS	Lower Columbia	Lewis	$207,585	$814,144	Yes	99
31028	Replace Upper and Lower Bennett Dam Fish Ladders in the North Santiam River at Geren Island (Stayton Island)	City of Salem, Oregon, a municipal corporation	Lower Columbia	Willamette	$200,000	$400,000	Yes	136
31029	Clark County ESA Outreach Program	Clark County, Washington	Lower Columbia	Columbia Lower	$205,000	$813,000	No - Not Fundable	132
31030	Santiam Water Control District Fish Screen and Passage Project	SWCD	Lower Columbia	Willamette	$350,000	$350,000	Yes	137
31031	Clatsop County Fisheries Restoration Project	CEDC Fisheries	Lower Columbia	Columbia Lower	$455,250	$817,250	No - Not Fundable	118
31032	Develop a Well Water Supply System for the Hardy Creek Chum Salmon Spawning Channel	USFWS	Lower Columbia	Columbia Lower	$152,500	$172,500	Yes	105

III. Index of Lower Columbia and Estuary Proposals Sorted by Project ID

ProjectID	Title	Sponsor	Province	Subbasin	FY03 Request	5YR Estimate	Response Needed?	Page
31033	Restoration of Columbia River Floodplain Functions to Steigerwald Lake	USFWS	Lower Columbia	Columbia Lower	$373,000	$2,262,000	No - Fundable	124
31034	Salmonid Population and Habitat Monitoring in the Oregon Portion of the Lower Columbia Province	ODFW	Lower Columbia	Columbia Lower	$532,648	$2,943,216	Yes	115
199107800	Burlington Bottoms Wildlife Mitigation Project	ODFW	Lower Columbia	Willamette	$110,000	$772,610	Yes	128
199205900	Amazon Basin/Eugene Wetlands Phase Two	TNC	Lower Columbia	Willamette	$60,650	$1,363,800	Yes	126
199206800	Implement Willamette Basin Mitigation Program	ODFW	Lower Columbia	Willamette	$1,567,500	$5,659,528	Yes	125
199306000	Select Area Fishery Evaluation Project	WDFW, ODFW, CEDC	Lower Columbia	Columbia Lower	$2,290,844	$12,075,011	Yes	117
199405300	Middle Fork Willamette River Bull Trout Re-introduction and Basinwide Monitoring	ODFW	Lower Columbia	Willamette	$159,400	$908,400	Yes	99
199607000	McKenzie River Focus Watershed Program Coordination and Habitat Restoration	MWC	Lower Columbia	Willamette	$325,000	$1,945,000	Yes	138
199801400	Survival and Growth of Juvenile Salmonids in the Columbia River Plume	NMFS	Columbia Estuary	Columbia Estuary	$2,092,855	$10,359,054	Yes	106
199902500	Sandy River Delta Riparian Forest, Wetlands, and Anadromous Estuary Restoration	USFS-CRGNSA	Lower Columbia	Sandy	$162,000	$1,246,000	Yes	124
200001200	Evaluate Factors Limiting the Columbia River Gorge Chum Salmon Populations	USFWS	Lower Columbia	Columbia Lower	$255,212	$1,410,207	No - Fundable	104
200001400	Evaluate habitat use and population dynamics of lampreys in Cedar Creek	USFWS	Lower Columbia	Lewis	$197,742	$1,092,650	Yes	98
200001600	Protect and Enhance Tualatin River National Wildlife Refuge Additions	USFWS/ USGS	Lower Columbia	Lower Columbia	$256,000	$874,100	Yes	127
200105300	Re-introduction of Lower Columbia River Chum Salmon into Duncan Creek	PSMFC, WDFW	Lower Columbia	Columbia Lower	$381,671	$1,632,940	No - Fundable	104
Total Request for Lower Columbia and Estuary Proposals					**$32,341,450**	**$126,752,594**		

ISRP Preliminary Review of Fiscal Year 2003 Proposals for the Upper and Middle Snake, Columbia Cascade, and Lower Columbia and Estuary 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 2003 funding in the Columbia Cascade, Upper and Middle Snake, and Lower Columbia and Estuary 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 June 7, 2002. 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 several 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 site visits and presentations were well organized and informative. The combination of the discussions and oral presentations was invaluable in identifying potential issues and clarifying the nature of the proposed projects.

These site visits were the last for the first round of provincial reviews, which began in August 2000. The only remaining provincial review is for Mainstem and Systemwide projects and will not include site visits. The site visits in the provinces continued to highlight the need to include field visits as a part of the scientific review process. Experiencing the relationship of fish and wildlife habitat across the highly varied geological, hydrological, and agricultural landscapes provided a valuable context that is not possible with a paper review. For example in the Columbia Cascade, the reviewers witnessed the unique dewatering phenomena of the Arrowleaf reach of the Methow River, the highly degraded state of Salmon Creek, and the productive spawning habitat of the Similkameen River.

Specific comments on each proposal, with some general comments on sets of proposals, are provided in three different sections of the report: 1) the Upper and Middle Snake Provinces, 2) the Columbia Cascade Province, and 3) the Lower Columbia and Estuary Provinces. In addition, a programmatic section with identification of general issues that cut across subbasins and provinces is provided. It is included in this report to provide useful reference for proponents as they draft responses to the ISRP and because the basic elements are of value in judging the merits of project proposals.

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 ISRP comments point by point, clearly identifying or repeating each concern/question 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 using the project ID number; e.g. "22022response.doc" and email messages should contain the project ID number 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., March 15, 2002. 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 Gustavo Bisbal at the Northwest Power Planning Council at (503) 222-5161 or 1-800-452-5161, or by email: gbisbal@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 May 17, 2002. 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 June 7, 2002. Thereafter, the Council will make its funding recommendations to Bonneville. It is anticipated that the Council's funding recommendations will be made in August of 2002.

Recommendation Categories: Who Needs to Respond?

Preliminary recommendations and comments are provided for each of the 168 proposals submitted. These recommendations are split into three basic categories: 1) fundable, further ISRP response review is not needed (11 proposals); 2) a response review is needed (134 proposals); and 3) do not fund, a response is not warranted (19 proposals). Four proposals were considered not amenable to scientific review, withdrawn, or combined with other proposals.

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.

In its final report, 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" is not an ISRP endorsement to fund the project or an opinion on the proposal's priority.

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 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. Another 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. 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 projects rated "not fundable" propose needed actions or are an integral part of a watershed effort, but the proposed methods, tasks or 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.

Programmatic Issues

This programmatic section is a work in progress that has been developed iteratively over the course of provincial reviews. The ISRP anticipates that a final report on overarching programmatic issues will be issued in 2002 upon the completion of the Provincial Reviews.

Stock Assessments

A basinwide salmonid stock assessment program is required as the basis for management and research of fish and fisheries in the Columbia Basin. The ISRP notes a lack of consensus over a uniform stock assessment protocol. Salmonid stock inventory is key, in particular, to the management decisions on appropriate tools for recovery.

For anadromous salmonids, key variables required in an assessment include harvest, adult escapement, smolt yield to determine smolts per spawner as a function of spawner density, adults per smolt, and trends in these statistics over time periods that define the productivity and capacity within a climatological and/or ecological regime. A

standardized, uniform index management system is required, where sites are selected to represent a particular geographic location (province), where detailed life stage monitoring may be required, usually at a fish enumeration facility. Other watersheds or reaches selected by a probabilistic sampling plan are tracked to determine relative abundance, via harvest records, spawner surveys, redd counts, fry abundance, or other means that have been calibrated to the index site results. Such a program is rare, if non-existent, in the Columbia Basin, but examples of its use may be found in British Columbia for several different salmonid species, and on the eastern seaboard for Atlantic salmon. A program of stock assessment is briefly described on the Fisheries and Oceans Canada website (www.pac.dfo-mpo.gc.ca/ops/fm/Salmon/stock.htm), including a listing of crucial information needs, and example cases.

From an adequate stock assessment and stock status analysis (e.g., healthy, critical, depressed, or endangered), a list of management tools appropriate to the stock's recruitment level may be selected. These tools include choices within harvest, habitat, and hatchery management. In the recovery projects reviewed in the Columbia Basin Provinces, we rarely encountered a project justification that provided a solid reference to such a stock assessment framework. Projects need to coordinate their efforts towards a solid stock assessment framework, and indicate the linkage of stock assessment and stock status to their proposed work within project applications.

Stock assessment and watershed assessment are consistent with the required elements of a subbasin plan. Careful selection of index sites will be necessary, since these sites will become the standard for comparison, i.e. controls, for randomly selected sites in Tier 2 level monitoring and evaluation, or Tier 3 level research, as described below. Careful coordination of subbasin activities and effectiveness evaluation is thus centered on the stock assessment and index stream system.

Watershed Assessments and Analysis

At least four watershed assessment protocols have been in use in this area:
1. Federal Guide to Watershed Analysis.
www.southernregion.fs.fed.us/gwj/lrmp/plandocs/r8r9_water_assess_attach.htm

2. Washington Department Natural Resource Guide to Watershed Analysis.
www.wa.gov/wdfw/hab/sshiap/

3. Oregon Watershed Assessment Manual, by the Oregon Watershed Enhancement Board (OWEB). www.oweb.state.or.us/

4. The Ecosystem Diagnosis and Treatment (EDT) model is being applied throughout the Columbia River Basin and elsewhere (www.mobrand.com).

Standard protocols for watershed assessment, prescription, rehabilitation and evaluation in the Columbia River Basin are lacking. A thorough, standard watershed assessment and a prescription that arises from the assessment, with a clear set of priorities is required. We would like to point individuals engaged in watershed assessment toward

standard protocols of condition assessment and a database for information storage that can be useful basinwide and beyond.

On forested lands in British Columbia, the Watershed Restoration Program has developed guidelines for condition assessment, starting with overview assessments (Johnston and Moore 1995) which serve to indicate where stable conditions do not warrant further work and where more intensive levels of assessment are required on hill slopes, and in gullies, riparian areas, stream channels, and fish habitat. More information on these manuals may be obtained from the Ministry website:
srmwww.gov.bc.ca/frco/programs/wrp/procedures.html

The next phase that requires a similar science-based approach is in the rehabilitation work. In BC, Slaney and Zaldokas (1997) "Fish Habitat Rehabilitation Procedures" (srmwww.gov.bc.ca/frco/bookshop/tech.html) is frequently referenced. Similar guidelines are in development for Washington State (www.wa.gov/wdfw/hab/ahg/).

After assessment, prescription, rehabilitation, comes the task of monitoring and evaluation. Keeley and Walters (1994) provided recommendations for monitoring, using smolts as the response variable in numerous paired (treated and untreated) watersheds, but the program never evolved towards their recommended level of evaluation. Other frameworks have emerged for tracking project effectiveness (Gaboury and Wong 1999).

As recently implemented by the U.S. Forest Service, watershed analysis is a procedure used to characterize the human, aquatic, riparian and terrestrial features, conditions, processes, and interactions (collectively referred to as "ecosystem elements") within a watershed. It follows the protocol of Ecosystem Analysis at the Watershed Scale (EAWS), to provide a systematic way to understand and organize ecosystem information.

Watershed analysis is an issue-driven stage-setting process that establishes the context for subsequent NEPA and project decision steps. It simplifies and shortens the preparation of project environmental analyses. It enhances the ability to estimate direct, indirect, and cumulative effects of management activities and guide their general type, location, and sequence within a watershed.

The EAWS relies upon the judgment of an interdisciplinary team to:

1) Characterize the watershed highlighting the dominant processes and features;
2) Identify plan objectives and regulatory constraints to resource management;
3) Identify key issues and resource concerns specific to the watershed;
4) Describe current conditions and links with other scales;
5) Describe reference conditions and explain changes in ecological conditions resulting from anthropogenic and natural disturbances;
6) Synthesize and interpret results to explain changes in ecosystem conditions and their probable causes, including implications for watershed management objectives; and
7) Develop recommendations for management activities that are responsive to the issues and key questions.

During the provincial reviews, the ISRP has noted the increasing efforts being expended on EAWS preparation in National Forests, as well as proposals to use the EAWS protocol on non-federal lands. Based upon relatively limited exposure to EAWS, the ISRP offers three observations.

1. EAWS is appropriate to identify and prioritize federal land rehabilitation activities such as culvert replacement and road decommissioning that might be considered for Bonneville funding. In cases where USFS funds are unavailable, EAWS preparation by consultants seems appropriate to accelerate the identification and prioritization process.

2. EAWS prepared by consultants in situations (such as Deer Creek in the Salmon subbasin, proposal #28044) where land is non-federal and of mixed ownership are often hindered by inadequate data on fish and fish habitats. Under data-poor conditions, an effective watershed assessment will be more difficult to produce and funding requests for an assessment should be carefully scrutinized.

3. EAWS will not in itself be adequate to plan and prioritize larger fish-centered projects that are often presented for Bonneville funding. Watershed assessments as the basis of fish restoration objectives must be able to prioritize stream reaches based on actual vs. potential natural fish production. The prioritization will rely on assessments of relative survival by life-stage (such as egg to fry and parr to smolt for anadromous species) for each reach. The ISRP observes that developing such a watershed assessment approach is one of the biggest challenges in the provinces. The ISRP has noted significant progress toward an adequate assessment in some provinces (such as in the Yakima system, using EDT).

The ISRP offers a further general observation about watershed restoration. Many watershed projects are based on a general assumption that the sponsors can conclude from the literature or from their personal experience how to improve conditions for salmonids and achieve some (undefined) concept of watershed health. If watershed restoration projects are to be credible, they should include physical criteria by which the relationship between "watershed health" and fish production will be measured. For example, when a rancher says "show me that if I leave 10% of my water in a stream, and keep my livestock X number of feet from a creek that the fish run will be significantly increased," data need to be available to demonstrate this relationship. Additionally, a systematic monitoring and evaluation approach to watershed restoration will generate knowledge about the success and failures of alternative approaches and the appropriate incentives to achieve effective landowner cooperation.

Restoration Recovery Estimates

Projects proposing to do habitat restoration should attempt to estimate the expected contribution to fish runs and to relate these expectations to the historical and current runs in the subbasin. The expected costs of restoration should be placed in the context of dollars per expected adult return, for purposes of comparing among potential restoration

projects (a relative measure). They should also compare alternative restoration strategies for the site on the same yield and cost basis, again for comparative purposes.

Exotic Species and Stocks

Proposals should identify how the presence of exotic (introduced) species or stocks in the proposal's subbasin or watershed will affect intended habitat restoration projects and the re-establishment of intended species/stocks. Most restoration projects target the historically abundant salmonids, yet other species now co-occur in many locations. Also, native stocks occur with other stocks of the same species that are not native to the waterbody (e.g., those introduced from other locations, often in hatchery programs). Species/stock interactions should be estimated (mere presence of introduced species/stocks is not necessarily bad, and is likely an unchangeable feature of the landscape).

Prioritization of Habitat Protection and Restoration Projects

Productive habitat for fish and wildlife provides complex structural diversity in space and time. The quality of habitat for different life-stages varies across and between watersheds, and from year-to-year, depending on factors such as flood frequency, snow-pack, and fire. Populations persist under these variable conditions because they have a complex structure of sub-populations, some strong and some vulnerable, distributed across a wide array of habitats. Extinction in one area can be compensated, in time, by emigration from an adjacent sub-population that was not decimated. Similarly, low production in one area may be compensated by above average production in adjacent areas.

Scientists can make educated guesses regarding the optimal population structure and habitat patterns for a successful fish or wildlife population. Projects to halt disruption of, or to restore, watershed processes that produce productive natural habitat for fish and wildlife probably are beneficial in most situations, but by themselves, likely to make only minor contributions to restoration of the structure in space and time needed by a successful population of wildlife or fish. Our confidence in the “gardening approach” (piecemeal improvement of the appearance of habitat) to restoring the complexity needed for protecting fish and wildlife populations is low. For these reasons, we recommend that administrators and scientists participating in the Council’s Fish and Wildlife Program focus attention on identifying, as soon as possible, the overall spatial array of watersheds and habitat units needed to protect important populations. The ISRP believes that the best long-term strategies for protecting fish and wildlife habitat and restoring viable populations are to purchase lands, conservation easements, and water rights for instream flow. The greatest scientific confidence for protecting the needs of populations resides in protecting as many areas maintained by natural processes as possible, at least until specific needs are better understood.

In September 2001, the ISRP reviewed the Confederated Salish and Kootenai Tribes’ Habitat Acquisition and Restoration Plan (19910600) to determine whether it provided scientifically sound criteria and protocol to prioritize habitat acquisitions. The ISRP found that document described a good plan for habitat acquisition and restoration of

wildlife habitat in mitigation for lost aquatic and riparian habitat due to the Kerr Project No. 5 located on the Flathead River and could serve as a useful model to other habitat and restoration proposals with some minor revision of the monitoring and evaluation (M&E) component of the plan.

Planning and Implementation

Planning and implementation proposals for some watersheds need to be combined and clearly phased over time. Multiple organizations are sometimes proposing planning exercises for the same watershed. Such duplication is unlikely to be funded. It is to the advantage of watershed planners to join forces to come up with a single, coherent strategy and plan. Most importantly, the Council is about to undertake a subbasin planning effort for the entire Columbia Basin. Planning proposals should clearly describe how their proposed efforts will contribute to and not duplicate the Council's effort.

Supplementation as an Experiment

At the conclusion of the Blue Mountain, Mountain Snake, Upper and Middle Snake, Columbia Cascade, and Lower Columbia and Estuary provincial reviews, the ISRP has an increasing concern that the Columbia Basin's suite of large-scale supplementation projects (Hood River, Yakima, NEOH [Northeast Oregon], NPTH [Nez Perce Tribal Hatchery], ISS [Idaho Supplementation Studies], LSRCP [Lower Snake River Compensation Program] and others) do not add up to a coherent complete test of the major hypotheses associated with supplementation as a rebuilding and recovery tool. Critical uncertainties may remain unresolved indefinitely.

The basin is investing very large amounts of money and resources into supplementation, both as an experimental test of the technique and as a rebuilding tool to achieve the FWP's goals. Chief among the supplementation programs reviewed to date are the Yakima Cle Elum projects, the ISS suite of projects, and the NEOH projects. Numerous other proposals have smaller levels of implicit and explicit supplementation built into the projects, e.g., Proposal #29007 "Okanogan Kelt Reconditioning" and #29006 "Supplement Spring Chinook in Early Winters Creek." The ISRP has provided extensive critical comments on these projects, including many suggestions on how to increase the experimental rigor of these projects toward addressing critical uncertainties about supplementation. The ISRP is concerned that without a larger experimental framework that links all supplementation projects in the basin together specifically to test the major hypotheses and reduce uncertainties, the huge investment presently being made will not resolve the issues to any real degree. If so, the present often-acrimonious debates about supplementation will likely continue unabated.

The ISRP is aware of ongoing efforts of three scientific advisory groups to provide advice to the Council on "supplementation": the Council's Artificial Production Review, the Independent Scientific Advisory Board's (ISAB) pending review of supplementation, and the present and continuing ISRP review of project proposals within Provinces. The ISRP recommends that ongoing review efforts on artificial production and supplementation be more closely linked together to try to reach consensus among the scientific advisory groups on whether the basin's investment in testing supplementation is

likely to be successful at resolving critical uncertainties. If not, then consensus on an overall basin-wide experimental framework and design is needed.

Reintroductions

Numerous projects throughout the basin are focusing on the reintroduction of salmonid species to systems where they have been extirpated. In the Columbia Cascade Province for example, these include Project 199604000 (*Evaluate the Feasibility and Risks of Coho Reintroduction in the mid-Columbia*), Project 200001300 (*Evaluate an Experimental Re-introduction of Sockeye Salmon into Skaha Lake*), and Project 29016 (*Return of Sockeye Salmon to their Historic Range*). Many of these projects appear to offer promising results that, if coupled with strong monitoring and evaluation components, may yield new insights into restoration potentials elsewhere in the basin.

It is important that reintroduction projects not be lumped with supplementation projects, as this has the potential to confound the region's needed assessment of the efficacy of supplementation as a recovery tool. Supplementation and reintroduction projects share many common aspects (use of artificial production facilities and techniques, goal of increasing naturally occurring fish, etc.) and concerns (carrying capacity, impacts on non-target species, different selection pressures for naturally spawning and artificially produced fish, and the potential for conflicting restoration, production, and harvest goals). However, they differ in the constraints under which they operate. Many of the issues that necessarily constrain supplementation activities, such as minimizing genetic and fitness risks to the indigenous depressed stock, are of smaller or little concern in reintroduction programs.

Monitoring, Evaluation, and Reporting of Results

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. We offer the following suggestions for implementation, trend (routine), statistical, 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 are anadromous fishes. For such projects, monitoring can in part be addressed at the level of the subbasin plan and in part with separate larger-scale monitoring projects. These parts need to be coordinated, and the overall plan needs to describe and explain the coordination. Monitoring of ecological conditions and fish stock status in a 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 effects 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 and cumulative impact assessment 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. In the latter case, it will be necessary that the project proposal for the parallel or larger scale monitoring project provide enough detail that the adequacy of the monitoring for purposes of the lower level project can be evaluated. 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.

Proposals must indicate plans for monitoring and evaluation of project effectiveness, and, for ongoing projects, include summaries of monitoring data, figures and tables, even if the monitoring is conducted by another project. Reviewers look for a monitoring and evaluation plan or a project link to a larger monitoring and evaluation program that can help determine whether an action provides biologically measurable results, ultimately in terms of fish or wildlife numbers. The ISRP is not necessarily recommending major research-level data collection for 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.

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 or Methow River Basins? 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).

Implementation Monitoring is added 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 using one of the following levels of monitoring.

Tier 1 (trend or routine) monitoring obtains repeated measurements, usually representing a single spatial unit over a period of time, with a view to quantifying changes over time. Changes must be distinguished from background noise. This is usually a low level of monitoring that falls under the NMFS Tier 1. 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.

Tier 2 (statistical) monitoring provides statistical inferences to larger areas and longer time periods and requires both probabilistic selection of study sites and repeated visits (NMFS Tier 2). A good model is 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 John Day Basin of the Columbia Plateau Province. The Oregon Plan, successfully implemented for estimation of coho distribution and abundance, applied a rigorous design for probabilistic site selection to answer key monitoring questions. Individual proposals can support larger Tier 2 statistical monitoring projects such as the Oregon Plan by using the same field methods and methods to select study sites that contribute information to Tier 2 statistical monitoring. Most large projects should implement sampling designs that allow Tier 2 statistical monitoring or contribute data to statistical monitoring.

Tier 3 (research) monitoring is 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. 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.

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. Use of such data for inferences to larger areas is problematic, and requires additional data obtained from a special design in order to calibrate the relation between the index sites and the larger area as considered from the perspective of Tier 2 statistical monitoring. The proponents of such projects should plan their monitoring programs to allow for valid inductive inferences to the target areas. To maintain consistency of calibration, sites and methods used in the past should be continued along with the new sites (and possibly new methods) in a new Tier 2 statistical monitoring program for at least enough time to obtain an adequate sample for calibration. Depending on the original reasons for selecting the index sites, there may be good reason to continue monitoring at those locations, which would henceforth be treated as a special, defined stratum in the design.

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.

MONITORING FOR SURVIVAL AND SAR USING PIT-TAGS

Much has been learned about survival and return rates of salmonids based on PIT-TAG technology. Undoubtedly, PIT-TAGS will continue to play a central role in design and analysis of individual research programs and scientific observational studies. However, the ISRP believes that a coordinated annual operations and management project is needed for application and detection of PIT-TAGS in support of long term monitoring and evaluation of out-migration survival of juveniles and return rates of adults.

SPECIFIC COMMENTS ON AQUATIC MONITORING AND EVALUATION

The ISRP emphasizes its support of the proponents of projects in the Columbia Cascade, Upper and Middle Snake, and Lower Columbia and Estuary Provinces to work with all Idaho, Oregon, Washington, and Montana Provinces to develop compatible aquatic

monitoring and evaluation procedures with common field procedures and probabilistic site selection for the entire Columbia River Basin.

Principal Investigators of aquatic monitoring projects should interact closely with Project No. 199801600 in the Columbia Plateau (Jim Ruzycki and Richard Carmichael, ODFW, "Monitor Natural Escapement and Productivity of John Day Basin Spring Chinook Salmon"). ODFW revised this proposal to create a comprehensive plan to include all monitoring and evaluation for all anadromous salmonid life-stages and habitats in the John Day portion of the Columbia River Plateau Province. The M&E program in the John Day Basin is apparently developing as a model for the Oregon section of the Columbia Basin and is being carefully reviewed by agencies in Washington.

The ISRP recommends that the Council endorse and support these efforts to develop standard sampling and data collection protocols within the Columbia Basin. It is extremely difficult to change a monitoring plan once it is in place. With the increased emphasis on monitoring and evaluation in ISRP project reviews, this may represent a one-time opportunity to make progress on this difficult task. We also recommend that the proponents of all aquatic habitat monitoring consider using aquatic habitat data collection protocols recommended in Johnson et al. (2001).

SPECIFIC COMMENTS ON TERRESTRIAL MONITORING AND EVALUATION

In response to the ISRP's comments and the Council's recommendations, the Albeni Falls Workgroup prepared a Draft Monitoring and Evaluation Plan for the Albeni Falls Wildlife Mitigation Project, dated August 2001 and submitted it for Council and ISRP review. This draft plan is currently under review by the Council and the ISRP. Although the review is not complete, it seems likely that this plan will be recommended as a model for terrestrial (including riparian) monitoring in the Columbia Basin. We encourage the proponents of terrestrial monitoring projects in all provinces to work closely with the Albeni Falls Workgroup and the Confederated Salish and Kootenai Tribes to develop common site selection procedures and data collection protocols for terrestrial monitoring within the Provinces of the Columbia Basin.

In particular we have suggested that an intensification of the National Resources Inventory (NRI) survey sites and data collection protocols would serve the Columbia Basin well. See the Proposals #200002300 and #200020116, the ISRP reviews in the Columbia Plateau, and the NRI web site www.nhq.nrcs.usda.gov/NRI/. The Council's Fish and Wildlife Program includes objectives for fish and wildlife habitat in subbasins and in fact for the entire Columbia Basin. It is our understanding that subsets of data collected in the NRI could be utilized at the present time to make statistical inferences (to variables currently measured by the NRI) in the Columbia Basin and in some of the larger subbasins. See Oregon and Washington results from the NRI on the sites: www.or.nrcs.usda.gov/nri/index.htm, and www.wa.nrcs.usda.gov/NRI. Monitoring of habitat and other land uses on the scale of subbasins (e.g., the Salmon or Methow subbasins) and the Columbia Basin will require development of a system wide probabilistic sampling plan similar to the NRI or use of the NRI with appropriate variables measured. The ISRP believes that a coordinated "top-down" plan that can be

intensified to make inferences to "small areas" (e.g., the size of projects in the Albeni Falls Dam Wildlife Mitigation Projects) is the best long-term strategy for the Columbia Basin.

HABITAT EVALUATION PROCEDURES AND HABITAT SUITABILITY INDICES

In reviewing the Albeni Falls plan for wildlife monitoring and evaluation and Habitat Evaluation Procedures (HEP), the ISRP noted that the proposal includes provision for long-term HEP evaluations. We suggest that effort put into long-term repetition of HEP analyses may not be very useful and that use of HEP analyses and their associated Habitat Units (HUs) to guide land management may lead to counterproductive management practices. HEP is based on the assumption that habitat suitability for a species can be described by a Habitat Suitability Index (HSI). These indices vary in quality and many are based on limited information. Measures of uncertainty in the form of confidence bounds on HSIs are rarely given, but have been found to be very broad. Management to produce or maintain habitat that is predicted by an index of untested quality to provide good habitat for a particular species is not warranted when better and more direct information on wildlife is available. We urge the program away from continuing emphasis on HEP evaluation as a tool for long-term evaluation or management planning.

We have noted before that the HEP procedure was a reasonable way to assess loss and mitigation initially. The Wildlife Program developed with the expectation that Habitat Units (HUs) could provide a proxy for direct wildlife measures and so an increase in HUs could be expected in a well-managed program and could provide a yardstick for measuring recovery. However, the development of good-quality direct monitoring programs will make this coarse approximation obsolete as an evaluation tool. The Albeni Working Group is prudent in allowing that they expect to at least maintain baseline HUs and they will allow a 20% decrease in this before invoking a management response.

Management Relevance of Scientific Proposals

Proposals with a strong scientific/technical background section often are not well linked to the management strategies for the subbasin and to other projects underway or planned for the subbasin. The ISRP encourages those proponents with primarily academic backgrounds to make concerted efforts to learn about, and to connect with, the fish and wildlife management infrastructure. Inquiries are encouraged from potential proponents of a project to the Council staff, CBFWA staff, or the relevant state or tribal fish and game agencies.

Contractor Identification

Proposals need to explicitly identify intended scientific/technical contractors and provide the same supporting material for them as is supplied for agency capabilities and staff members. These contractors would include any group doing scientific studies, environmental assessments, or architect-engineering work. Often contractors are known in advance of proposal submittal, and in other proposal solicitation venues, it is customary practice for them to participate in preparation of the proposal. This would not

apply to strictly construction contractors, which often are selected in a bidding process after funding and planning has occurred. However, for projects that involve research or projects where the contractor's roles and fees constitute a significant potion of the project ($\geq$25%), it is critical that the contractor participate in preparation of the proposal. At a minimum the proposal should discuss the necessary qualifications for contractors.

References

Monitoring and Evaluation Section

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.

Johnson, D. H., N. Pittman, E. Wilder, J. A. Silver, R. W. Plotnikoff, B. C. Mason, K. K. Jones, P. Roger, T. A. O'Neil, C. Barrett. 2001. Inventory and Monitoring of Salmon Habitat in the Pacific Northwest - Directory and Synthesis of Protocols for Management/Research and Volunteers in Washington, Oregon, Idaho, Montana, and British Columbia. Washington Department of Fish and Wildlife, Olympia, Washington. 211pp.

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

Nicholas, J.W. (Principal Writer). 1997b. Monitoring Program, Addendum to Chapter 15b. The Oregon Plan: Revisions to the steelhead supplement. State of Oregon, Salem, Oregon. (www.oregon-plan.org/)

Nicholas, J.W. (Principal Writer). 1999. Implementation of the monitoring program, Chapter 15b. The Oregon Plan: Draft steelhead supplement. State of Oregon, Salem, Oregon. (www.oregon-plan.org/)

Watershed Assessment Section

Fish Habitat Assessment procedures are now on line at srmwww.gov.bc.ca/frco/programs/wrp/fhap/index.html. This is also the link to these documents on line:

Keeley, E.R. & C.J. Walters. 1994. The BC Watershed Restoration Program: Summary of the Experimental Design, Monitoring and Restoration Techniques Workshop. BC Watershed Restoration Management Report. 34p. 284Kb

Johnston, N.T. & Slaney, P.A. 1996. Fish Habitat Assessment Procedures, BC Watershed Restoration Technical Circular. 97p. 576Kb

Johnston, N.T. & Moore, G.D. 1995. Guidelines for Planning Watershed Restoration Projects. BC Watershed Restoration Technical Circular. 52p. 130Kb

Slaney, P.A., and Zaldokas, D. [Editors]. 1997. Fish Habitat Rehabilitation Procedures. BC Watershed Restoration Technical Circular No. 9. 341p. 7.1Mb

Gaboury, M. & Wong, R. 1999. A Framework for Conducting Effectiveness Evaluations of Watershed Restoration Projects. BC Watershed Restoration Technical Circular. 33p.

Preliminary Recommendations and Comments on Each Proposal

PART I. Upper and Middle Snake Provinces

Middle Snake Province

BOISE/PAYETTE/WEISER RIVER SUBBASINS

ProjectID: 199505701

Southern Idaho Wildlife Mitigation - Middle Snake
Sponsor: IDFG & IOSC
Province: Middle Snake
Subbasin: Boise
FY03 Request: $3,889,703
5YR Estimate: $21,913,421
Short Description: Protect, enhance, restore and maintain wildlife habitats to mitigate for construction losses at Anderson Ranch, Black Canyon and Deadwood dams.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed that describes the prioritization process and a modified M&E section that ensures consistency with recommendations developed by the Albeni Falls Workgroup and review recommendations by the ISRP in addendum to Report ISRP 2001-4 (see www.nwcouncil.org/library/isrp/isrp2001-4.htm).

This is one of four Southern Idaho Wildlife Mitigation proposals (199505700 though 03). All are more or less identical. Project history and some of the text are identical. Apparently the Southern Idaho Wildlife Mitigation (SIWM) project was split into Upper and Middle Snake with the IDFG/IOSC, submitting proposals in both places along with the Shoshone-Bannock and Shoshone-Paiute Tribes. The response should more clearly point out their continuing relationship to each other. The ISRP comments on each are mostly identical (except the plant center under 199505702) and a coordinated response from the sponsors would be appropriate. The program has a good track record for acquisition of fee-title to project lands and should be supported. Council should consider the budgets carefully and evaluate the overall cost of the four projects.

The M&E program is underdeveloped. The proponent mentions that they are a member of the interagency work group supporting Proposal #199206100 "Albeni Falls Wildlife Mitigation," but should have included and more completely developed the plans for monitoring and evaluation that were developed by the Albeni Falls Workgroup and reviewed by the ISRP in the addendum to report ISRP 2001-4 "Review of Draft Albeni Falls M&E Plan." For monitoring and evaluation of aquatic resources, the proponents may wish to work with the sponsors of Project 199405400 from the ODFW for methods of selection of sampling sites for study of aquatic resources. The proponents should ensure that data collected in this project will be comparable to data collected in other Provinces using common sampling procedures for site selection and common data collection procedures. It is not adequate to simply state that a national monitoring program, such as EMAP or NRI sampling, will be used. The specific sample areas, methods, and sampling frequency and intensity (i.e., how many samples of what type where and when) need to be specified. The ISRP review for FY2000 funding commented that: "However the management plan and the monitoring and evaluation component are not well developed. A clear management plan needs to be developed"…."Data supporting the long-term benefits of particular plantings, weed control, etc., should be taken and presented."…" The monitoring and evaluation plans lack detail. What populations will be monitored? Will a survey design be used that could detect value of enhancements or other active management techniques versus passive restoration?" We note that these deficiencies continue to exist and should be addressed in the response.

This proposal suggests using a programmatic approach rather than identifying specific actions and specific land purchases. Given this approach, it is necessary for the sponsors to describe their prioritization protocol in detail. How will the Albeni Falls model be used? Will some or all of the components of the Albeni Falls prioritization process be used? Although the sponsors are familiar with the Albeni Falls plan, they should ensure that this Southern Idaho Wildlife Mitigation proposal is consistent with the habitat acquisition and restoration plans developed by the Albeni Falls Workgroup and reviewed by the ISRP in the addendum to the report ISRP 2001-4 "Review of Confederated Salish and Kootenai Tribes' Habitat Acquisition and Restoration Plan."

ProjectID: 32021

Lower Boise River Wetlands Restoration Project
Sponsor: Pioneer Irrigation District
Province: Middle Snake
Subbasin: Boise
FY03 Request: $164,500
5YR Estimate: $3,852,000
Short Description: Restore wetlands in the Lower Boise River watershed in order to mitigate the inundation of wetland habitats caused by the construction of Anderson Ranch Dam. Improvements in water quality will be an integral part of restoration of the wetlands.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
Response needed. The proposal would create a wetland to eventually be a part of the "dynamic trading of pollutant loading" to the lower Boise River, principally involving phosphorus and sediment. A Technical Memorandum describing a conceptual design prepared for the City of Boise was appended to the proposal.

If mitigation credit would accrue to BPA in terms of Habitat Units gained in wildlife habitat, the sponsors should develop or identify the appropriate HEP methodology. How many units of credit are available from purchase of the property and from development of the wetlands habitat? See project proposals 199505701 and 199505700 for examples.

Is there a watershed assessment that establishes this project as a high priority issue? The proposal needs a fully developed monitoring and evaluation plan for data, both for water quality and fish and wildlife benefits. The proponents are referred to the programmatic section of this report on Monitoring, the specific comments on Aquatic Monitoring and Evaluation, and the specific comments on Terrestrial Monitoring and Evaluation.

ProjectID: 32020

Inventory and Assessment of Stream/Riparian Resources, upper Boise and upper Payette River Subbasins, Idaho
Sponsor: WHA
Province: Middle Snake
Subbasin: Boise
FY03 Request: $176,000
5YR Estimate: $176,000
Short Description: Apply a hierarchical classification to identify complexes of stream/riparian resources with distinctive ecological potential and divide the complexes into more discrete areas based on condition relative to a progression of states. .
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed indicating how this project would integrate with and provide data for other projects including the Council's use of EDT for the upcoming subbasin planning effort. We note that this mapping

effort on riparian habitat may provide information at a finer scale than the Northwest Habitat Institute approach and hence be useful for subbasin planning efforts and long term monitoring.

The proponent should discuss management applications in similar mapping projects and indicate potential applications in the Upper and Middle Snake Province. Need for this work is to some extent justified by the quote "inventory and map the distribution of riparian plant communities" stated in the Boise-Payette-Weiser Subbasin Summary. However, letters of support from management agencies would be helpful in assessing the need for the project.

The proposal needs a more fully developed plan for monitoring and evaluation of the accuracy of the maps and for use of the data in long-term aquatic habitat monitoring efforts. For example, mapped points should be checked with actual field visits with a double-blind sampling scheme. Targets should be set for error rates and the error rates estimated. What error rates have been achieved in previous projects? What magnitude of change can be detected if this mapping effort were to be repeated in, say 20 years?

ProjectID: 32011

Mitigation of marine-derived nutrient loss in the Boise-Payette-Weiser subbasin.
Sponsor: IDFG, WSU, UI, PNW, OSC
Province: Middle Snake
Subbasin: Boise
FY03 Request: $354,789
5YR Estimate: $1,072,548
Short Description: The project replaces marine derived nutrients using salmon analogs and salmon carcasses in the Boise-Payetter-Weiser subbasin. Aquatic and terrestrial effects of nutrient treatments will be monitored using isotope and lipid analysis.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
Response needed. This is a research project: of the first year budget, approximately $306K is for research (4 graduate students from 2 schools) and about $40K is to actually distribute the nutrients. This is a potentially well-designed study, especially in its examination of terrestrial effects, but it might be premature, given the proposals funded by the Council and BPA last year as part of the Innovative Solicitation. The proposal needs to better describe how it might fit with the other ongoing nutrient supplementation studies in the Columbia basin. What does this proposal offer beyond those? Go to www.nwcouncil.org/innovative and see projects 200105500, 200101300. Is there some attribute of this project, some synergy, that makes it very fundable? The "innovative" projects are pilot studies to test the efficacy of nutrient supplementation before proceeding with other studies or implementation, and unless the response convinces otherwise implementation of this project should await findings from those.

ProjectID: 32009

Squaw Creek Cooperative Fisheries Restoration Project
Sponsor: RC&D
Province: Middle Snake
Subbasin: Payette
FY03 Request: $43,750
5YR Estimate: $790,250
Short Description: Assess and ameliorate the significant factors that have resulted in a severely depressed bull trout metapopulation within the major streams of the Squaw Creek drainage.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
Response needed. The proposal would work to bolster bull trout in one of the five key watersheds in the Payette drainage as identified in the Idaho Governor's bull trout recovery. Basic building blocks appear to be in place for a watershed level program, but it seems to be in the initial planning stage.

Please clarify the level of support from the Idaho Department of Fish & Game for the project. From the proposal, there is uncertainty regarding whether there would be adequate participation of qualified fish biologist personnel. Please provide additional information. Also, the M&E for habitat response and long-term population response needs to be more thoroughly described in the response and made consistent with IDFG methods and projects. The proponents are referred to the programmatic section of this report on Monitoring, and the specific comments on Aquatic Monitoring and Evaluation.

ProjectID: 32013

Fishery Restoration of the Gold Fork River, Idaho
Sponsor: IDFG and IOSC
Province: Middle Snake
Subbasin: Payette
FY03 Request: $344,500
5YR Estimate: $2,429,500
Short Description: Fish populations in the Gold Fork River can be recovered by reconnecting the habitat and expanding the range of bull trout and redband trout populations. By creating fish passage in the drainage we will reconnect 44 miles of resident fish habitat.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
Response needed. The proposal would work to bolster bull trout in one of the five key watersheds in the Payette drainage as identified in the Idaho Governor's bull trout recovery. What is the expected ability of Cascade Reservoir to support bull trout given the TMDL and temperature constraints? This topic was covered briefly in the presentation but please elaborate. Also, the M&E for habitat response and long-term population response needs to be more thoroughly described in the response. The proponents are referred to the programmatic section of this report on Monitoring, and the specific comments on Aquatic Monitoring and Evaluation.

ProjectID: 32015

Deadwood River and Clear Creek Drainages Roads Analysis and Repair
Sponsor: USFS
Province: Middle Snake
Subbasin: Payette
FY03 Request: $105,800
5YR Estimate: $1,088,800
Short Description: Inventory, analyze, identify and repair road problems (road segments contributing sediment, culverts blocking fish passage, or culverts at high risk of failure) in the Deadwood River and Clear Creek drainages.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
Response needed that clarifies the priority of this project in the watershed, including benefits to fish. Is there evidence that fine sediment levels in the stream are at or above a threshold that would cause major biological damage? Is this project likely to provide benefits to bull trout without fish passage at Deadwood Dam? Has an Ecosystem Analysis at the Watershed Scale been done? The proponents are referred to the programmatic section of this report.

ProjectID: 32006

Compare the parr-smolt transformation of nonanadromous and anadromous populations of Oncorhynchus mykiss
Sponsor: IDFG
Province: Middle Snake
Subbasin: Weiser
FY03 Request: $90,530
5YR Estimate: $286,287
Short Description: Determine if O. mykiss populations that were historically accessible to the ocean but are now blocked by dams can produce smolts.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. Please address more fully the question of whether the sample size of PIT-tagged fish in tasks a and b is large enough for detection of possible differences. Also, describe the specific hypotheses that would be tested in tasks a-c.

BRUNEAU RIVER SUBBASIN

ProjectID: 32007

Bull trout habitat restoration/protection program - Bruneau Subbasin
Sponsor: SPT-DVIR
Province: Middle Snake
Subbasin: Bruneau
FY03 Request: $218,374
5YR Estimate: $1,658,413
Short Description: Work collaboratively with the USFWS, BLM, NDOW and IDFG to implement habitat enhancement/restoration/protection measures in the Bruneau Subbasin to assist in recovery of threatened bull trout populations in the Jarbidge and Bruneau River systems.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed to describe the watershed assessment, strategies and priorities stemming from the watershed assessment, and a monitoring plan. The proposed team should have set the priorities and proposed actions to address those priorities based on existing information and then adapt those as recovery plans are developed. See the ISRP programmatic comments at the beginning of this report. Nearly three-fourths of the initial year's funding request is for an unidentified subcontractor. Who is the subcontractor and what is their job?

ProjectID: 200007900

Assess Resident Fish Stocks Of The Owyhee/Bruneau Basin, D.V.I.R.
Sponsor: Sho-Pai Tribes - DVIR
Province: Middle Snake
Subbasin: Bruneau
FY03 Request: $232,000
5YR Estimate: $1,288,000
Short Description: Conduct a systematic resident fish species inventory & stock assessment in the Owyhee/Bruneau River Basin, DVIR component. Using established protocol to evaluate the genetic composition / introgression of native trout populations on the DVIR.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. The response should describe a scientifically sound plan as recommended in the ISRP's FY00 review. Project performance to date appears to be minimal, and the response should address this. Sponsors should consider accelerating this work, as justification for much of their other proposed

work, such as the feasibility of artificial production in DVIR (#32001), seems contingent upon results from this project.

The proponents should justify the level of effort during the last two years and indicate how the current proposal and proposed budget will remedy the situation. The authors should explain the relationship to similar ongoing projects, which overlap the DVIR. In particular, this project should be coordinated with Project 199800200 "Snake River Native Salmonid Assessment" to ensure that the same random site selection procedures are used and in so far as possible, the same data collection procedures are used. It is not adequate to simply state that the same methods will be used.

The ISRP's FY00 review and recommendation of this and other DVIR proposals was to provide baseline funding for development of detailed plans to inventory and assess fish and wildlife populations on the DVIR with the expectation that such detailed plans would be presented and reviewed in the forthcoming provincial review process (i.e., this review). Consequently, the response needs to identify specific sample areas, data collection methods, and sampling frequency and intensity (i.e., how many samples of what type where and when). A map of sampling sites and schedule for accomplishing the work should be given in the response.

Aquatic habitat data collection procedures should be consistent with recommendations in Johnson et al. (2001; Johnson, D. H., N. Pittman, E. Wilder, J. A. Silver, R. W. Plotnikoff, B. C. Mason, K. K. Jones, P. Roger, T. A. O'Neil, C. Barrett. 2001. Inventory and Monitoring of Salmon Habitat in the Pacific Northwest - Directory and Synthesis of Protocols for Management/Research and Volunteers in Washington, Oregon, Idaho, Montana, and British Columbia. Washington Department of Fish and Wildlife, Olympia, Washington. 211pp.).

ProjectID: 32012

Implement Best Management Practices to improve riparian habitat and upland conditions within the Clover Creek watershed.
Sponsor: BRSCD
Province: Middle Snake
Subbasin: Bruneau
FY03 Request: $44,500
5YR Estimate: $91,999
Short Description: Enhance riparian and upland habitat and reduce nonpoint source pollution within the Clover Creek watershed through the development of a Coordinated Resource Management Plan on private, state, and federal land, focusing on private land improvements.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. The proposal and presentation dwell on this as a collaborative effort but are light on potential biological benefits. More specific involvement of fisheries biologists, such as at IDFG, needs to be better demonstrated. More detail needs to be provided on monitoring or links to other monitoring efforts that would provide information on native fish response. Details need to be given on prioritization of sites for restoration. See the programmatic section of this report. Is there a watershed assessment completed that specifies needed actions? Are there potential benefits of using the CRP in this area?

OWYHEE RIVER SUBBASIN

ProjectID: 199505703

Southern Idaho Wildlife Mitigation - Shoshone-Paiute Tribes
Sponsor: SPT-DVIR
Province: Middle Snake
Subbasin: Owyhee
FY03 Request: $1,813,746
5YR Estimate: $7,683,164
Short Description: Acquire, enhance and protect wildlife habitat to mitigate for the construction of Anderson Ranch, Deadwood, and Black Canyon hydroelectric facilities.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed that describes the prioritization process and a modified M&E section that ensures consistency with recommendations developed by the Albeni Falls Workgroup and review recommendations by the ISRP in addendum to Report ISRP 2001-4 (see www.nwcouncil.org/library/isrp/isrp2001-4.htm).

This is one of four Southern Idaho Wildlife Mitigation proposals (199505700 though 03). All are more or less identical. Project history and some of the text are identical. Apparently the Southern Idaho Wildlife Mitigation (SIWM) project was split into Upper and Middle Snake with the IDFG/IOSC, submitting proposals in both places along with the Shoshone-Bannock and Shoshone-Paiute Tribes. The response should more clearly point out their continuing relationship to each other. The ISRP comments on each are mostly identical (except on the plant center under #199505702) and a coordinated response from the sponsors would be appropriate. The program has a good track record for acquisition of fee-title to project lands and should be supported. Council should consider the budgets carefully and evaluate the overall cost of the four projects.

The M&E program is underdeveloped. The proponent mentions that they are a member of the interagency work group supporting Proposal #199206100 "Albeni Falls Wildlife Mitigation," but should have included and more completely developed the plans for monitoring and evaluation that were developed by the Albeni Falls Workgroup and reviewed by the ISRP in the addendum to report ISRP 2001-4 "Review of Draft Albeni Falls M&E Plan." For monitoring and evaluation of aquatic resources, the proponents may wish to work with the sponsors of Project 199405400 from the ODFW for methods of selection of sampling sites for study of aquatic resources. The proponents should ensure that data collected in this project will be comparable to data collected in other Provinces using common sampling procedures for site selection and common data collection procedures. It is not adequate to simply state that a national monitoring program, such as EMAP or NRI sampling, will be used. The specific sample areas, methods, and sampling frequency and intensity (i.e., how many samples of what type where and when) need to be specified. The ISRP review for FY2000 funding commented that: "However the management plan and the monitoring and evaluation component are not well developed. A clear management plan needs to be developed"…."Data supporting the long-term benefits of particular plantings, weed control, etc., should be taken and presented."…" The monitoring and evaluation plans lack detail. What populations will be monitored? Will a survey design be used that could detect value of enhancements or other active management techniques versus passive restoration?" We note that these deficiencies continue to exist and should be addressed in the response.

This proposal suggests using a programmatic approach rather than identifying specific actions and specific land purchases. Given this approach, it is necessary for the sponsors to describe their prioritization protocol in detail. How will the Albeni Falls model be used? Will some or all of the components of the Albeni Falls prioritization process be used? Although the sponsors are familiar with the Albeni Falls plan, they should ensure that this Southern Idaho Wildlife Mitigation proposal is consistent with the habitat acquisition and restoration plans developed by the Albeni Falls Workgroup and reviewed by the ISRP in the addendum to the report ISRP 2001-4 "Review of Confederated Salish and Kootenai Tribes' Habitat Acquisition and Restoration Plan."

ProjectID: 32008

Wildlife Inventory and Habitat Evaluation of Duck Valley Indian Reservation
Sponsor: SPT-DVIR
Province: Middle Snake
Subbasin: Owyhee
FY03 Request: $127,461
5YR Estimate: $271,340
Short Description: Conduct wildlife surveys to determine species composition and relative abundance on the Duck Valley Indian Reservation. HEP analyses will be conducted to determine habitat suitability index for target wildlife species.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. The ISRP is very much in favor of the type of objectives described, but the proposal is not amendable to scientific review. A detailed wildlife inventory, monitoring, and habitat evaluation plan should be developed and included in the response, perhaps in cooperation with the subcontractor.

The proponents may wish to work with the interagency work group supporting Proposal #1992-06100 "Albeni Falls Wildlife Mitigation," to help develop the plans for monitoring and evaluation. These plans were reviewed by the ISRP in the addendum to report ISRP 2001-4 "Review of Draft Albeni Falls M&E Plan."

ProjectID: 199701100

Enhance and Protect Habitat and Riparian Areas on the DVIR
Sponsor: SPT - DVIR
Province: Middle Snake
Subbasin: Owyhee
FY03 Request: $344,696
5YR Estimate: $1,879,696
Short Description: This project increases critical riparian areas of the Owyhee River and its tributaries as well as preserves the numerous natural springs located on the Duck Valley Indian Reservation. Provides a clean pure source of water for the fish and wildlife.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
Response needed. Based on the proposal and presentation, the reviewers saw no evidence the project warrants continued funding and a strong response would be needed to modify that position. The ISRP FY00 comments recommended "fund for one year to allow the project sponsors to better refine their project. Future long-term funding contingent on addressing deficiencies. The authors need to develop quantifiable biologically measurable objectives, without which one cannot evaluate whether the work achieves its goals. More detail is needed on how sites will be evaluated and the standards for success." The current proposal and recent presentation show no indication that these and other items previously identified by the ISRP have been addressed or adopted. Apparently this project did not complete a watershed assessment as proposed in FY00. The tasks completed to date (springhead fencing) do not appear to be providing significant, cost-effective benefits to fish and wildlife.

ProjectID: 198815600

Implement Fishery Stocking Program Consistent With Native Fish Conservation
Sponsor: SPT - DVIR
Province: Middle Snake
Subbasin: Owyhee
FY03 Request: $211,688
5YR Estimate: $1,102,688
Short Description: To enhance fisheries on the DVIR we will stock three reservoirs (closed systems) with rainbow trout. This project will support a sustainable (put-and-take) harvest by Shoshone-Paiute tribal members and non-Indian anglers without impacting native trout.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. The stocking effort is fundable, but if the creel survey is to be implemented as proposed, the response needs to describe the specific methods to be used, including a description of how the percentage of stocked fish that are caught will be determined.

Additional questions raised by the proposal:
1. The CPUEs for Mountain View and Sheep Creek reservoirs increased dramatically in 2000, as compared to the 1998-1999 data. Why?
2. The proposal alludes numerous times to the idea that stocking of the three reservoirs will decrease fishing pressure on native populations in river and stream systems on the DVIR. What kinds and amounts of pressures occur on DVIR rivers and streams? What evidence from the DVIR or the fisheries literature can be used to support this assertion?
3. What level of harvest do the reservoir systems provide for tribal and non-tribal fisheries?

ProjectID: 199501500

Lake Billy Shaw Operations and Maintenance and Evaluation (O&M, M&E)
Sponsor: Sho-Pai Tribes DVIR
Province: Middle Snake
Subbasin: Owyhee
FY03 Request: $293,000
5YR Estimate: $1,326,000
Short Description: The purpose of this Operation and Maintenance (O&M) project is to enhance and develop the Billy Shaw fishery area as a premier fishery in the Northwest U.S. Stocking with native fish (or suitable species) shoreline and water quality enhancement/monitoring.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. Lake Billy Shaw has been fenced under BPA funds with riparian plantings done, but apparently cattle are being allowed in the protected enclosure. The response needs to describe enforcement procedures that are adequate for protecting past investments. Project sponsors need to provide assurance that lake levels will be maintained at elevation levels needed to support their plantings.

ProjectID: 32001

Evaluate the Feasibility Artificial Production Facility DVIR
Sponsor: SPT-DVIR
Province: Middle Snake
Subbasin: Owyhee
FY03 Request: $300,000
5YR Estimate: $2,823,000
Short Description: To provide a sustenance fishery for the Tribal of the Duck Valley Indian Reservation (DVIR). This will be accomplished through the Feasibility, Construction, and Operation of an Artificial Production Facility.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. This proposal is for the feasibility, design, construction, and implementation of an artificial production facility in the DVIR to produce rainbow trout, or possibly native redband trout, for stocking into three DVIR put-grow-and-take fisheries. The proposal arises in part out of the termination of the SBT-SPT Joint Culture Facility, which did not pass the 3-Step Review process due largely to concerns about the effects of stocking non-native fish onto native trout populations, inadequate background assessments of native fish abundance and distributions, and inadequate monitoring and evaluation plans.

The proposal justifies the project on the grounds of measures in the 1994 Fish and Wildlife Program, stocking needs for the three DVIR reservoirs, and a perceived need to relieve fishing pressure on native stream-dwelling redband trout in the DVIR streams. The status of redband trout (i.e., distribution and abundance) on the DVIR is not presently known. Indeed, the presence of redband trout on the DVIR has yet to be demonstrated; it is in fact the purpose behind Project 200007900. That project plans to inventory trout in DVIR streams, and to collect tissue samples from observed trout specimens to determine if redband trout populations exist on the DVIR that are not hybridized with rainbow trout as a result of the widespread indiscriminate stocking of rainbow trout through much of the west during the 20th century.

If Project 200007900 identifies redband trout as present on the DVIR in numbers sufficient for brood stock collection, this project proposes to construct a state-of-the-art artificial production facility that could serve as a model for other similar facilities used in native fish programs. The difficulties of bringing native wild trout into medium- to large-scale aquaculture are enormous and technically challenging, as the rearing conditions and diets developed for semi-domesticated stocks of rainbow trout are often not adequate for wild redband or cutthroat trout. The proposal does not adequately address these potential difficulties. If redband trout are not present on the DVIR, then the facility would be devoted to growing rainbow trout for stocking into the three DVIR reservoirs, and presumably would not need to be as state-of-the-art.

As noted in the ISRP Final 3-Step review of the now-terminated Joint Culture Facility, it is premature to consider an artificial production facility for the DVIR until the results of the stock and genetic inventory project are known (Project 200007900). These results would provide direction about the scale and sophistication of the production facility, as well as insights as to whether the facility is needed at all. As noted above, a more modest facility may meet the proposal objectives if production focuses on rainbow trout, rather than redband trout.

A cost-benefit analysis should be employed to shed additional insight into the need and justification for the facility and proposed program. Program needs may be met as economically through annual purchase of needed fish. Current annual expenses to produce rainbow trout for stocking two DVIR reservoirs are cited at $130K; with the stocking of Lake Billy Shaw, the third reservoir, those costs would likely approach $200K annually. Construction costs (estimated at roughly $2 million) and projected annual operations and maintenance costs (projected at $200K/yr) should be weighed against the estimated costs of purchasing rainbow trout for stocking over some timeframe (10, 20, 30 years). Numerous commercial aquaculture operations exist along the Snake River near Hagerman, Idaho, from which rainbow trout could likely be obtained.

Finally, most of the implementation steps outlined in the proposal call for RFPs rather than for direct involvement by DVIR staff. How will oversight be provided to ensure quality control and appropriate designs? What criteria will be used to evaluate potential subcontractors and to evaluate their proposals? After construction, will the facility and staff also be run by subcontractors or by DVIR staff?

ProjectID: 32014

Feasibility Study of Transporting Salmonids Through a Translucent Fish Passage System
Sponsor: SPT-DVIR
Province: Middle Snake
Subbasin: Owyhee
FY03 Request: $102,050
5YR Estimate: $977,050
Short Description: Test the biological response of fingerlings/smolt to transportation in a translucent fish passage system
Response Needed? No - Not Fundable
ISRP Preliminary Recommendation and Comments:
Not fundable. ISRP FY00 comments described the idea presented as not scientifically well justified, and that position is unchanged in the current review. The proposal does not provide a reasonable plan to test this concept. Convincing evidence was not presented that this approach provides a feasible alternative to in-river fish passage.

LOWER MIDDLE SNAKE RIVER SUBBASIN

ProjectID: 199800200

Snake River Native Salmonid Assessment
Sponsor: IDFG and IOSC
Province: Middle Snake
Subbasin: Snake Lower Middle
FY03 Request: $346,375
5YR Estimate: $1,877,375
Short Description: Investigate population status and trends, life histories, habitat needs, limiting factors, and threats to persistence of native salmonids in the Snake River and tributaries upstream of Hell's Canyon Dam in Idaho, and implement recovery/protection plans.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. This is an excellent proposal in virtually all respects. It is well written; provides excellent and compelling links to the FWP, including an emphasis on assessing and restoring native fish populations in native habitats; and substantial review of results to-date. The section on presentation of results for ongoing projects is truly exemplary and could serve as a useful model for other ongoing proposals. The track record for a project that is only three years old is impressive and has resulted in numerous reports and publications even at this early stage of the project.

While this is an excellent proposal with demonstrated results, the ISRP would like to see assurances that data generated from it will be compatible with other efforts in the region. Aquatic habitat data collection procedures should be consistent with recommendations in Johnson et al. (2001; Johnson, D. H., N. Pittman, E. Wilder, J. A. Silver, R. W. Plotnikoff, B. C. Mason, K. K. Jones, P. Roger, T. A. O'Neil, C. Barrett. 2001. Inventory and Monitoring of Salmon Habitat in the Pacific Northwest - Directory and Synthesis of Protocols for Management/Research and Volunteers in Washington, Oregon, Idaho, Montana, and British Columbia. Washington Department of Fish and Wildlife, Olympia, Washington. 211pp.).

Finally, the last phrase of the short description under Section 1, says to "implement protection/recovery plans". Objectives 1-4 (Section 5, and Section 9f, pp. 14-21) provide a logical sequence of data collection and analysis that unfortunately stops short of identifying specific criteria and steps that will be used to

designate conservation management units, something that seems necessary to do before it would be possible to implement protection or recovery plans. In conjunction with Proposal #33001, project sponsors should describe how the anticipated data (genetic, abundance, life history, and habitat) will be used to identify conservation management units and provide some idea of how these units could be linked together into a protection and recovery plan for Yellowstone cutthroat trout or redband trout in the upper Snake River system. Would the data be used to identify core or source populations from which recovery actions could be expanded or would sets of populations be protected in refuge-type units such as subbasin level watersheds that might be managed under special or restrictive regulations?

Reviewers were impressed with the scientific and technical rigor (and performance) of this project, but need to see how the thorough data collection efforts will link strongly back to native fish management issues of concern to the region generally and the FWP specifically.

ProjectID: 32003

White Sturgeon put, grow, and take fishery feasibility assessment, Oxbow/Hells Canyon reservoirs.
Sponsor: NPT
Province: Middle Snake
Subbasin: Snake Lower Middle
FY03 Request: $356,800
5YR Estimate: $848,800
Short Description: The goal of this proposed project is to determine the feasibility of a put, grow, and take white sturgeon fishery in Oxbow and Hells Canyon reservoirs.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. The project appears sound and is intended to gather data needed for Council's 3-Step process. Surveys of sturgeon in these reaches show only a handful of fish with no spawning activity (See ISRP 2000-7).

Why is BPA funding being sought rather than having the project supported by Idaho Power, as the problems being addressed were caused by its facilities. How is this plan related to and how could it be integrated with the white sturgeon component of the forthcoming Idaho Power FERC relicensing Conservation Plan?

ProjectID: 32010

Lookout Mountain Road Decommissioning
Sponsor: BLM
Province: Middle Snake
Subbasin: Snake Lower Middle
FY03 Request: $49,150
5YR Estimate: $75,150
Short Description: Decommission a portion of the Sisley Creek and Fox Creek roads totaling approximately two and a half miles, resulting in a reduction of sedimentation, enhancement of riparian vegetation, and reducing the number of stream and spring crossings in the area.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed that clarifies and justifies the priority of this project in the watershed, including providing a better portrayal of benefits to fish. The proposal and presentation appeared to refer only to the Lookout Mountain EIS and best professional judgment as the basis for this being is a priority area for restoration.

UPPER MIDDLE SNAKE RIVER SUBBASIN

ProjectID: 32002

Implement Best Management Practices to improve riparian habitat and upland conditions within the Billingsley Creek watershed.
Sponsor: GSCD
Province: Middle Snake
Subbasin: Snake Upper Middle
FY03 Request: $114,635
5YR Estimate: $459,175
Short Description: Enhance riparian habitat and reduce nonpoint source pollution within the Billingsley Creek watershed through the development and implementation of conservation plans on private lands, coordinated with state owned and managed lands within the watershed.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. Ties to fisheries biologists such as at IDFG need to be more strongly specified. More detail needs to be provided on monitoring or links to other monitoring efforts that would provide information on fish response. See the programmatic section at the beginning of this report. Details need to be given on prioritization of sites for restoration. Is there a watershed assessment that specifies needed actions? Are there potential benefits of using additional CRP enrollment in this project area?

ProjectID: 32004

Effects of culverts on fish population persistence: tools for prioritizing fish passage restoration projects in the Middle Snake Province
Sponsor: RMRS
Province: Middle Snake
Subbasin: Boise
FY03 Request: $23,600
5YR Estimate: $310,340
Short Description: This project seeks to develop quantitative tools to evaluate risks that stream culverts pose to fish populations. Products from the research would be used in prioritizing fish passage restoration projects to provide maximum benefits to fish populations.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
Response needed. Is there demand for this by managers in the Middle Snake Province? Need for this assumes that there is currently no effective protocol to prioritize culvert replacement. Is that correct in Idaho and Oregon? Would this proposed approach provide additional valuable information beyond the Washington (WDFW) approach with its elaborate protocol manual *Fish Passage Barrier and Surface Water Diversion Screening Assessment and Prioritization Manual (August 2000)*? The response needs to show the actual model (the formula) and should illustrate examples of the model's potential use. The ISRP suggests that sponsors also consider incorporating an experimental design to enable testing this model against predictions resulting from best professional judgment.

MALHEUR RIVER SUBBASIN

ProjectID: 200002700

Malheur River Wildlife Mitigation Project
Sponsor: BPT
Province: Middle Snake
Subbasin: Malheur
FY03 Request: $694,880
5YR Estimate: $2,484,180
Short Description: Restore and enhance critical fish and wildlife habitat, maintain BLM allotments, enhance historic home range and wintering habitat for resident and migratory species, control weeds, and improve water quality along the Malheur River.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. The management plan, with methods, needs to be described in more detail in the proposal's objective, tasks and methods section, particularly for weed control, native and introduced plantings and seeding, and grazing plans. Brief resumes for the BPT wildlife staff are needed.
This proposal also contains a large M&E component to study mule deer and elk migration patterns, habitat preference and forage utilization, interaction with livestock, changes in forage consumption relative to habitat improvements, and herd population trends. The objectives go beyond basic M&E and include a large-scale research effort involving radio-tagged deer and elk. The ISRP supports the basic M&E in Objective 5 for tracking population trends of target species if the specific sample areas, methods, and sampling frequency and intensity (i.e., how many samples of what type where and when) and data collection protocols are specified in more detail. The sponsors might also consider the expanded use of aerial and ground counts of target species to meet the other M&E objectives, admittedly with less precision than with the use of radio-tagged individuals. However, the need for a research program to study interaction of deer, elk and livestock management in a desert environment is not clear. We suggest that a comprehensive literature review on this issue including work conducted by the ODFW in LaGrange, Oregon, be included in the response. The sponsors should clearly indicate data gaps that are limiting their ability to create an effective operations and management plan for this property.

The proponents should work with the interagency work group supporting Proposal #1992-06100 “Albeni Falls Wildlife Mitigation,” to develop the plans for terrestrial monitoring and evaluation. These plans were reviewed by the ISRP in the addendum to report ISRP 2001-4 “Review of Draft Albeni Falls M&E Plan.”

For monitoring and evaluation of aquatic resources, the proponents may wish to work with the sponsors of Project 199405400 from the ODFW for methods of selection of sampling sites for study of aquatic resources. Please refer to Johnson et al. (2001) for data collection protocols on aquatic habitat.

> Johnson, D. H., N. Pittman, E. Wilder, J. A. Silver, R. W. Plotnikoff, B. C. Mason, K. K. Jones, P. Roger, T. A. O’Neil, C. Barrett. 2001. Inventory and Monitoring of Salmon Habitat in the Pacific Northwest - Directory and Synthesis of Protocols for Management/Research and Volunteers in Washington, Oregon, Idaho, Montana, and British Columbia. Washington Department of Fish and Wildlife, Olympia, Washington. 211pp.

A few additional comments and questions should be addressed in the response. Plans for management and/or improvement of fish resources in the seven miles of river should be emphasized in the overall O&M plan. What water rights are associated with this property and how would they be used? What are the possibilities for augmenting stream flow through this section? Could sponsors purchase and retire the grazing allotment?

ProjectID: 200000900

Logan Valley Wildlife Mitigation Project/ O&M
Sponsor: BPT
Province: Middle Snake
Subbasin: Malheur
FY03 Request: $146,842
5YR Estimate: $555,974
Short Description: Restore and enhance critical fish and wildlife habitat, enhance historic home range and seasonal habitat for resident and migratory species, control weeds, and improve water quality for headwaters of the Malheur River Basin.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. The operations and management plan, with methods, needs to be described in detail in the "Proposal objectives, tasks and methods" section, particularly for weed control, restoration of native vegetation, and grazing plans. Brief resumes for the staff are needed. The water use plan should be described in more detail, specifically on the balance between wildlife benefits and associated cooling of instream water versus leaving the water instream for possibly significant fish needs.

The response must include detailed monitoring and evaluation plans in the "Objectives, tasks, and methods" section for both aquatic and terrestrial resources. We note that this is not a new requirement. The FY2000 review by ISRP included the statement that "Subsequent funding for monitoring and evaluation contingent on development of a clear plan for monitoring and evaluation with criteria to evaluate efforts." The specific areas, methods, and sampling frequency and intensity (i.e., how many samples of what type where and when) and data collection protocols need to be specified for both aquatic and terrestrial resources. The proponents should work with the interagency work group supporting Proposal #1992-06100 "Albeni Falls Wildlife Mitigation," to develop the plans for terrestrial monitoring and evaluation. These plans were reviewed by the ISRP in the addendum to report ISRP 2001-4 "Review of Draft Albeni Falls M&E Plan."

For monitoring and evaluation of aquatic resources, the proponents may wish to work with the sponsors of Project 199405400 from the ODFW for methods of selection of sampling sites for study of aquatic resources. Please refer to Johnson et al. (2001) for data collection protocols on aquatic habitat.

Johnson, D. H., N. Pittman, E. Wilder, J. A. Silver, R. W. Plotnikoff, B. C. Mason, K. K. Jones, P. Roger, T. A. O'Neil, C. Barrett. 2001. Inventory and Monitoring of Salmon Habitat in the Pacific Northwest - Directory and Synthesis of Protocols for Management/Research and Volunteers in Washington, Oregon, Idaho, Montana, and British Columbia. Washington Department of Fish and Wildlife, Olympia, Washington. 211pp.

ProjectID: 32019

Logan Valley Fish and Wildlife Project- Stanbro Ranch Acquisition
Sponsor: BPT
Province: Middle Snake
Subbasin: Malheur
FY03 Request: $1,355,286
5YR Estimate: $1,965,286
Short Description: Acquisition will expand, restore, and enhance habitat for the purpose of fish and wildlife management and will replace critically important habitat for the persistence of T&E, sensitive, and culturally important fish, wildlife, and plant species.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response needed. This project appears fundable as an acquisition. This purchase is adjacent to other tribal land and US Forest Service land, it is the last private land in the Strawberry Mountain Wilderness Management Area. This area will likely recover with passive restoration.

The response should provide detailed monitoring and evaluation plans for the "Objectives, tasks and methods" section. We note that this is not a new requirement. The FY200 review included the following ISRP statement "Subsequent funding for monitoring and evaluation contingent on development of a clear plan for monitoring and evaluation with criteria to evaluate efforts." The review comments concerning M&E in Proposal #200000900 apply. See the programmatic section of this report.

The sponsors should also discuss the possibility that the O&M plan asked for in a response to proposal #200000900 will be sufficient for this property.

Resumes of the principal investigators should be given.

ProjectID: 32018

Williams Ranch Fish and Wildlife Acquisition Project
Sponsor: BPT
Province: Middle Snake
Subbasin: Malheur
FY03 Request: $2,259,392
5YR Estimate: $3,194,992
Short Description: Acquisition will expand, restore and enhance habitat for the purpose of fish and wildlife management and will replace critically important habitat for the persistence of T&E, sensitive and culturally important fish, wildlife and plant species.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. This project appears fundable as an acquisition. This is valuable wildlife habitat that borders the Warm Springs reservoir and 16.6 miles of South Fork Malheur River. It would link up with ODFW held lands on the Malheur River, protect bighorn sheep habitat, and allow for better grazing enforcement on fenced property in the area for the benefit of fish and wildllife habitat. There must be detailed monitoring and evaluation plans in the "Objectives, tasks and methods" section. We note that this is not a new requirement. The FY200 review of acquisition proposals included the following ISRP statement "Subsequent funding for monitoring and evaluation contingent on development of a clear plan for monitoring and evaluation with criteria to evaluate efforts."

The review comments concerning M&E in Proposal #200000900 apply.

The area contains an unregulated section of the South Fork of the Malheur, which is planted with hatchery rainbow trout and often supports a viable recreational fishery, in spite of occasional dewatering in low

water years. What are the plans for the use of the water rights associated with property? Can they provide instream flow for the portion of the South Fork of the Malheur that is occasionally dewatered and through the Jones Property to the Snake River Reservoirs? The sponsors should also investigate Oregon water law to determine if instream flow rights from the Logan Valley Project can be extended below Warm Springs Reservoir.

Resumes of the principal investigators should be provided.

ProjectID: 199701900

Evaluate The Life History Of Native Salmonids In The Malheur Basin
Sponsor: BPT
Province: Middle Snake
Subbasin: Malheur
FY03 Request: $324,401
5YR Estimate: $991,485
Short Description: Evaluate and determine the life history, distribution, and critical habitats pertinent to populations of bull trout and other salmonids within the Malheur subbasin.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. The management application of data previously generated by this project looks strong. The focus of this project is solely on bull trout; has work on redband trout been completed? Is the information already gathered by this project, augmented by literature, sufficient to develop a bull trout recovery plan?

Although discussed following the presentation, the proposed focus on sub-adult fish needs better justification. Other than the knowledge gap, why focus on this life-stage? Has work on adult fish been completed?

The proposal does well at describing methods but does not attempt to frame testable hypotheses. Asking "what do fish do" in the face of poor summer environmental conditions is a good start but should be followed by some hypotheses that can be tested by the data to be gathered. This should be done for objectives 1, 2, 5, and 7 and some objectives will require multiple hypotheses. The proposal largely ignores bull trout work done elsewhere. Those results should be used to help develop quality hypotheses. Adult bull trout information already acquired by this project should also be used in sub-adult hypothesis generation for the response. Why were there no even-numbered objectives in the proposal except for #2?

ProjectID: 32016

Assess the feasibility of the Upper Malheur Watershed to support the reintroduction of anadromous populations above the Beulah & Warmsprings Reservoir
Sponsor: BPT
Province: Middle Snake
Subbasin: Malheur
FY03 Request: $168,896
5YR Estimate: $298,896
Short Description: The project is broke into two phases, the first being a feasibility study on the reintroduction of anadromous fish in the Malheur Subbasin. The second phase is the development of a reintroduction plan for the Subbasin.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A similar proposal (for FY 00) was previously reviewed by the ISRP. That proposal was justified by its sponsors in part by a window of opportunity provided by the FERC relicensing of the Hells Canyon Dam complex. The current proposal does not refer to such a window of opportunity. Does it still exist?

A response is needed to better describe the project's proposed methods for assessing the salmonid habitat in the Malheur Subbasin (Task 1.3) and for assessing the risks that anadromous fish reintroduction might pose for native fishes (Task 1.7). Nearly all the requested funding is for a subcontractor. The subcontractor should be identified. Additionally, please specifically address how the project is appropriate for BPA funding.

ProjectID: 32017

Suppress Brook Trout Populations in the Upper Malheur Subbasin.
Sponsor: BPT
Province: Middle Snake
Subbasin: Malheur
FY03 Request: $221,473
5YR Estimate: $1,068,091
Short Description: Determine the magnitude or level of hybridization of brook and bull trout within the Upper Malheur Basin, document physical features of F1/F2 hybrids, and determine effective way to suppress or eliminate brook trout from the Malheur basin.
Response Needed? No - Not Fundable
ISRP Preliminary Recommendation and Comments:
Do not fund. Reviewers viewed this as the worst possible ecological situation for effective brook trout suppression, with a headwater lake stronghold of brook trout. The likelihood of project efforts being successful in suppressing brook trout were felt to be minimal. The approach of using pheromone-emitting "bait" brook trout is a promising but largely unproven concept, and this is not an appropriate setting for its testing.

ProjectID: 32005

Burns Paiute Fish and Wildlife Mitigation Coordinator
Sponsor: BPFW
Province: Middle Snake
Subbasin: Malheur
FY03 Request: $53,978
5YR Estimate: $220,956
Short Description: Develop wildlife mitigation strategies consisting of selection, scientific analysis, implementation (acquisition, enhancement, etc.), O&M, and evaluation of wildlife mitigation projects for the Burns Paiute Tribe.
Response Needed? No - Not Applicable
ISRP Preliminary Recommendation and Comments:
The employment of a coordinator-planner for the Burns Paiute Tribe is probably justified; however, the proposal is not amenable to scientific review.

POWDER RIVER SUBBASIN

ProjectID: 199405400

Tools for Managing Bull Trout Populations Influenced by Nonnative Brook Trout Invasions
Sponsor: ODFW
Province: Middle Snake
Subbasin: Powder
FY03 Request: $555,981
5YR Estimate: $1,697,881
Short Description: Develop models of ecological and genetic effects of nonnative brook trout on bull trout; monitor population abundance and habitat
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. Like the Blue Mountain proposal and response for this project, methods for the EMAP component are not described in enough detail. The response should describe whether the sample sites are for long-term monitoring or to meet the specific needs of this research. The summary of results to date was helpful.

The management application is of the proposed work is vague. The reviewers were not confident that this would provide information that would significantly move bull trout recovery forward. The proposed research does not appear to be drawn from past efforts. This is an ongoing project with new objectives. Projects should have definite objectives and tasks with timelines for completion with deliverables.

Upper Snake Province

HEADWATERS SUBBASIN

ProjectID: 199505702

Southern Idaho Wildlife Mitigation - Upper Snake
Sponsor: IDFG & IOSC
Province: Upper Snake
Subbasin: Headwaters
FY03 Request: $4,068,153
5YR Estimate: $22,877,616
Short Description: Protect, enhance, restore and maintain wildlife habitats to mitigate for construction losses at Palisades and Minidoka dams.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed that describes the prioritization process and a modified M&E section that ensures consistency with recommendations developed by the Albeni Falls Workgroup and review recommendations by the ISRP in addendum to Report ISRP 2001-4 (see www.nwcouncil.org/library/isrp/isrp2001-4.htm).

This is one of four Southern Idaho Wildlife Mitigation proposals (199505700 though 03). All are more or less identical. Project history and some of the text are identical. Apparently the Southern Idaho Wildlife Mitigation (SIWM) project was split into Upper and Middle Snake with the IDFG/IOSC, submitting proposals in both places along with the Shoshone-Bannock and Shoshone-Paiute Tribes. The response should more clearly point out their continuing relationship to each other. The ISRP comments on each are mostly identical (except the proposal for a plant center under this proposal #199505700) and a coordinated response from the sponsors would be appropriate. The program has a good track record for acquisition of fee-title to project lands and should be supported. Council should consider the budgets carefully and evaluate the overall cost of the four projects.

The M&E program is underdeveloped. The proponent mentions that they are a member of the interagency work group supporting Proposal #199206100 "Albeni Falls Wildlife Mitigation," but should have included and more completely developed the plans for monitoring and evaluation that were developed by the Albeni Falls Workgroup and reviewed by the ISRP in the addendum to report ISRP 2001-4 "Review of Draft Albeni Falls M&E Plan." For monitoring and evaluation of aquatic resources, the proponents may wish to work with the sponsors of Project 199405400 from the ODFW for methods of selection of sampling sites for study of aquatic resources. The proponents should ensure that data collected in this project will be comparable to data collected in other Provinces using common sampling procedures for site selection and common data collection procedures. It is not adequate to simply state that a national monitoring program, such as EMAP or NRI sampling, will be used. The specific sample areas, methods, and sampling frequency and intensity (i.e., how many samples of what type where and when) need to be specified. The ISRP review for FY2000 funding commented that: "However the management plan and the monitoring and evaluation component are not well developed. A clear management plan needs to be developed"…."Data supporting the long-term benefits of particular plantings, weed control, etc., should be taken and presented."…" The monitoring and evaluation plans lack detail. What populations will be monitored? Will a survey design be used that could detect value of enhancements or other active management techniques versus passive restoration?" We note that these deficiencies continue to exist and should be addressed in the response.

This proposal suggests using a programmatic approach rather than identifying specific actions and specific land purchases. Given this approach, it is necessary for the sponsors to describe their prioritization protocol in detail. How will the Albeni Falls model be used? Will some or all of the components of the Albeni Falls prioritization process be used? Although the sponsors are familiar with the Albeni Falls plan, they should ensure that this Southern Idaho Wildlife Mitigation proposal is consistent with the habitat acquisition and restoration plans developed by the Albeni Falls Workgroup and reviewed by the ISRP in the addendum to the report ISRP 2001-4 "Review of Confederated Salish and Kootenai Tribes' Habitat Acquisition and Restoration Plan."

Objective 3 is to develop a plant materials center to provide a predictable and reliable supply of site adapted native plants and seed for habitat restoration and rehabilitation projects. This objective seems to opportunistic given availability of land and irrigation facilities at the Deer Parks Wildlife Mitigation Unit. The response should give specific evidence of the non-availability of native plant material, explain why the private growers (or other suppliers) in Idaho and the region cannot or will not contract to provide plant material, and evaluate the loss of wildlife habitat if this land remains in agricultural production.

ProjectID: 33006

Monitoring Avian Productivity and Survivorship on Mitigation Lands and Sensitive Habitats in the Upper Snake Headwaters
Sponsor: TREC
Province: Upper Snake
Subbasin: Headwaters
FY03 Request: $56,789
5YR Estimate: $204,309
Short Description: implement an intensive capture and banding program to use birds as a measure of habitat quality and change
Response Needed? No - Not Fundable
ISRP Preliminary Recommendation and Comments:
Not fundable, a response is not needed. The methods and tasks are not appropriate to meet the objectives stated. The purpose of project is to set up a long-term monitoring program to assess long-term health of the habitats in the Upper Snake River subbasins using abundance, diversity, productivity, and survivorship measures of breeding bird populations as the monitoring index. The proposal does not effectively make the case that the proposed bird-monitoring program will effectively monitor long-term environmental conditions or that the bird-monitoring program is the best method (among unstated alternative methods) for

achieving the stated purpose of providing a long-term program with consistent and comparable methods for monitoring the environmental health (?) of the subbasin habitats.

The proposal is not linked to the Upper Snake Subbasins Summary or to the Council's FWP. The proposal is quite deficient in details of methods, analysis, and inference to habitat conditions and long-term habitat assessment. Proposed study sites might be the best sites for monitoring bird populations in the Closed and Snake subbasins, but there is a serious concern about how representative those study sites are and how that might limit (or skew) inferences from the project relative to its stated goals.

The MAPS protocol appears to provide a consistent protocol so that data collected here would fit into a larger regional or national database, which is a plus for the project.

ProjectID: 33009

Improve Yellowstone cutthroat trout recruitment and survival in the South Fork of the Snake River
Sponsor: IDFG
Province: Upper Snake
Subbasin: Headwaters
FY03 Request: $264,700
5YR Estimate: $2,254,700
Short Description: Increase juvenile cutthroat trout recruitment and survival in the South Fork of the Snake River by minimizing entrainment losses and side channel stranding mortality, and by restoring tributary habitat.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
Excellent presentation. A response is needed that better describes the proposed screening inventory activities, prioritization protocol, etc. Objective 3 (examining juvenile flow survival relationships) seems to be a reasonable approach to try, but reviewers were somewhat skeptical of whether it would meet the project's goal. Should the project focus on tributaries as cutthroat spawning refuges?

All would agree that the Great Feeder (Objective 4) is a major problem, but to what extent would the hard data that would result from this objective provide better justification regarding what actions are warranted? The approach to solving that problem (a tracking study) seems a very oblique way of initiating change. The proposal should lay out in some detail possible management options for reducing impacts of the Feeder.

It would be helpful if the project sponsors could clarify an apparent contradiction between a statement from IDFG from email and a meeting last year: "To date we have not found a significant relationship between winter flows and following year juvenile densities or total trout densities. …over a wide range of flows during the past 15 years, the South Fork fishery has maintained a remarkable degree of stability and angling quality." This statement does not mesh with statements in the proposal about the likely effects of winter flow levels.

Some effort should also be directed at getting local landowners to use cutthroat or sterile rainbow when stocking rainbows in their private waters. IDFG could (and probably should) play an active role in this area, as continued stocking of non-native rainbows in adjacent and occasionally connected waters will continue to exacerbate the hybridization issue in the South Fork Snake. Project sponsors should address these concerns in their response.

UPPER CLOSED BASIN SUBBASIN

ProjectID: 33005

Monitoring Avian Productivity and Survivorship in Sensitive Habitats in the Upper Closed Basin
Sponsor: TREC
Province: Upper Snake
Subbasin: Upper Closed Basin
FY03 Request: $76,233
5YR Estimate: $266,099
Short Description: implement an intensive capture and banding program to use birds as a measure of habitat quality and change
Response Needed? No - Not Fundable
ISRP Preliminary Recommendation and Comments:
Not fundable, a response is not needed. The methods and tasks are not appropriate to meet the objectives stated. The purpose of project is to set up a long-term monitoring program to assess long-term health of the habitats in the Upper Snake River subbasins using abundance, diversity, productivity, and survivorship measures of breeding bird populations as the monitoring index. The proposal does not effectively make the case that the proposed bird-monitoring program will effectively monitor long-term environmental conditions or that the bird-monitoring program is the best method (among unstated alternative methods) for achieving the stated purpose of providing a long-term program with consistent and comparable methods for monitoring the environmental health (?) of the subbasin habitats.

The proposal is not linked to the Upper Snake Subbasins Summary or to the Council's FWP. The proposal is quite deficient in details of methods, analysis, and inference to habitat conditions and long-term habitat assessment. Proposed study sites may be the best sites for monitoring bird populations in the Closed and Snake subbasins, but there is a serious concern about how representative those study sites are and how that might limit (or skew) inferences from the project relative to its stated goals.

The MAPS protocol appears to provide a consistent protocol so that data collected here would fit into a larger regional or national database, which is a plus for the project.

ProjectID: 33007

Implement Best Management Practices to improve riparian habitat and upland conditions in the Medicine Lodge watershed.
Sponsor: Clark SCD
Province: Upper Snake
Subbasin: Upper Closed Basin
FY03 Request: $98,902
5YR Estimate: $564,510
Short Description: Enhance riparian habitat and reduce nonpoint source pollution within the Medicine Lodge watershed through the development and implementation of conservation plans on private lands, coordinated with local, state, and federal land managers.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. The proposal and presentation dwell on this as a collaborative effort but are minimal regarding potential biological benefits. More specific involvement of fisheries biologists, such as at IDFG, needs to be demonstrated. More detail needs to be provided on monitoring or links to other monitoring efforts that would provide information on native fish response. Details need to be given on prioritization of sites for restoration. Is there a watershed assessment completed that specifies needed actions? What is the likelihood and what are the potential benefits of using the CRP in this area?

UPPER SNAKE RIVER SUBBASIN

ProjectID: 199201000

Habitat Restoration/Enhancement Fort Hall Reservation
Sponsor: SBT
Province: Upper Snake
Subbasin: Upper Snake
FY03 Request: $175,000
5YR Estimate: $923,500
Short Description: Provide conditions to maintain a self-perpetuating Tribal subsistence and trophy trout fishery through implementation of habitat restoration, enhancement and protection activities on the Fort Hall Indian Reservation.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. Despite our previous positive comments on the project for FY00, this proposal does not seem strong – past results were summarized, but not clearly. Why have deep pools in Clear Creek recently filled with sediment?

Is there a watershed assessment that shows where actions are needed and what prescriptions are needed for individual stream reaches? If not, the response should address those items and provide a three-year implementation work plan that describes what project staff are going to do, where, and why the sites were selected. The proposal was not detailed enough. See the programmatic section of this report. When will this project be completed?

From Table 2 of the proposal and from the presentation it seems that most of the rehabilitation work has occurred on Bottoms streams instead of in other reservation streams where more native fishes are found. Why?

ProjectID: 199505700

Southern Idaho Wildlife Mitigation Program
Sponsor: SBT
Province: Upper Snake
Subbasin: Upper Snake
FY03 Request: $3,592,141
5YR Estimate: $20,675,052
Short Description: Protect, enhance, restore and maintain wildlife habitats to mitigate for construction losses at Palisades and Minidoka dams.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed that describes the prioritization process and a modified M&E section that ensures consistency with recommendations developed by the Albeni Falls Workgroup and review recommendations by the ISRP in addendum to Report ISRP 2001-4 (see www.nwcouncil.org/library/isrp/isrp2001-4.htm).

This is one of four Southern Idaho Wildlife Mitigation proposals (199505700 though 03). All are more or less identical. Project history and some of the text are identical. Apparently the Southern Idaho Wildlife Mitigation (SIWM) project was split into Upper and Middle Snake with the IDFG/IOSC, submitting proposals in both places along with the Shoshone-Bannock and Shoshone-Paiute Tribes. The response should more clearly point out their continuing relationship to each other. The ISRP comments on each are mostly identical (except the plant center under 199505702) and a coordinated response from the sponsors would be appropriate. The program has a good track record for acquisition of fee-title to project lands and should be supported. Council should consider the budgets carefully and evaluate the overall cost of the four projects.

The M&E program is underdeveloped. The proponent mentions that they are a member of the interagency work group supporting Proposal #199206100 "Albeni Falls Wildlife Mitigation," but should have included and more completely developed the plans for monitoring and evaluation that were developed by the Albeni Falls Workgroup and reviewed by the ISRP in the addendum to report ISRP 2001-4 "Review of Draft Albeni Falls M&E Plan." For monitoring and evaluation of aquatic resources, the proponents may wish to work with the sponsors of Project 199405400 from the ODFW for methods of selection of sampling sites for study of aquatic resources. The proponents should ensure that data collected in this project will be comparable to data collected in other Provinces using common sampling procedures for site selection and common data collection procedures. It is not adequate to simply state that a national monitoring program, such as EMAP or NRI sampling, will be used. The specific sample areas, methods, and sampling frequency and intensity (i.e., how many samples of what type where and when) need to be specified. The ISRP review for FY2000 funding commented that: "However the management plan and the monitoring and evaluation component are not well developed. A clear management plan needs to be developed"…."Data supporting the long-term benefits of particular plantings, weed control, etc., should be taken and presented."…" The monitoring and evaluation plans lack detail. What populations will be monitored? Will a survey design be used that could detect value of enhancements or other active management techniques versus passive restoration?" We note that these deficiencies continue to exist and should be addressed in the response.

This proposal suggests using a programmatic approach rather than identifying specific actions and specific land purchases. Given this approach, it is necessary for the sponsors to describe their prioritization protocol in detail. How will the Albeni Falls model be used? Will some or all of the components of the Albeni Falls prioritization process be used? Although the sponsors are familiar with the Albeni Falls plan, they should ensure that this Southern Idaho Wildlife Mitigation proposal is consistent with the habitat acquisition and restoration plans developed by the Albeni Falls Workgroup and reviewed by the ISRP in the addendum to the report ISRP 2001-4 "Review of Confederated Salish and Kootenai Tribes' Habitat Acquisition and Restoration Plan."

ProjectID: 33001

Assessment of genetic population structure and risk of introgression and hybridization to native trout in the Mid and Upper Snake River Provinces
Sponsor: IDFG and IOSC
Province: Upper Snake
Subbasin: Upper Snake
FY03 Request: $228,458
5YR Estimate: $713,154
Short Description: Detect and quantify levels of hatchery produced O. mykiss introgression within, and assess genetic diversity and genetic population structure of native Yellowstone cutthroat trout and redband trout in the Middle and Upper Snake River Provinces.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. This proposal would subsume and expand the genetic analysis task of the ongoing proposal 199800200. This proposal is scientifically sound but a response is needed on management applicability and plans. Reviewers' major concern for the project (and for 199800200) centers on how the data will be used to define conservation management units. The proposal primarily describes management at the population level, rather than aggregates of populations that would embrace watersheds or metapopulations.

The project proposes to examine redband and Yellowstone cutthroat trout (YCT) throughout the Upper and Middle Snake provinces, yet sampling and collections appear to be confined to Idaho only (admittedly, the bulk of the geography in the two provinces). The project will be stronger with respect to the provinces and the FWP if it is expanded to cover the entire Upper and Middle Snake provinces. The response should describe the extent to which analysis of trout collected from states adjoining Idaho will be included. If this

project were funded and completed, it would generate a valuable geographical-based genetic dataset for redband and YCT populations.

The response (perhaps in collaboration with project 199800200) should provide more detail on how conservation units will be designated (describe criteria and process) and how they might be managed. Project sponsors should describe how the anticipated genetic, abundance, life history, and habitat data will be used to identify conservation management units and provide some idea of how these units could be linked together into a protection and recovery plan for Yellowstone cutthroat trout or redband trout in the upper Snake River system. Would the data be used to identify core or source populations from which recovery actions could be expanded or would sets of populations be protected in refuge-type units such as subbasin level watersheds that might be managed under special or restrictive regulations?

As long as inland trout management continues to focus on population level management, state and federal resource management agencies will remain vulnerable to an endless series of listing petition for inland trout species. Only by defining and subsequently managing conservation units at ecological scales above the population level (e.g., watershed, subwatershed, or metapopulation), will management agencies have any protection against future listing petitions, and any real chance of rebuilding and restoring redband and Yellowstone cutthroat trout populations.

Budget summaries do not show any cost sharing. Why is there no cost-sharing?

ProjectID: 33004

Survival of adfluvial Yellowstone cutthroat trout in the upper Blackfoot River drainage
Sponsor: IDFG
Province: Upper Snake
Subbasin: Upper Snake
FY03 Request: $137,500
5YR Estimate: $374,503
Short Description: This proposed project will identify which life stage survival is most limiting the population growth of Yellowstone cutthroat trout in the upper Blackfoot River drainage.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed with respect to the potential control of rainbow trout hybridization in the Blackfoot system even if it is not part of this specific proposal.

Due to a recent population decline of indigenous Yellowstone cutthroat trout, the upper Blackfoot has been closed to harvest, thus providing good protection for the fish. The population seems to have responded favorably. Now IDFG wishes to gain information that they hope would justify future harvest.

This project builds logically on previous work by IDFG, however the proposal shows little indication that its authors have any understanding of the Blackfoot cutthroat. To state (p 7) that important spawning and rearing locations have not been identified misleads reviewers and is an insult to the efforts of previous research! The Upper Blackfoot River YCT population has been identified by IDFG for some time as a priority YCT population for management and restoration. Substantial work has occurred on this population and watershed.

Reviewers suggest that the project be refocused on control of rainbow trout and hybridization in the Blackfoot system, rather than on the life history work that is proposed. The Blackfoot River system has supported a well-known fishery in the past, noted for its large-sized indigenous Yellowstone cutthroat trout. With proper management it could become a regional trophy cutthroat fishery and depending on the genetic status of the populations in the Upper Blackfoot River (Projects 199800200 and 33001), YCT populations in this area may serve as an important conservation management unit.

It seems curious that such large-scale and expensive efforts are being expended to reduce the effects of introgressive hybridization on YCT in the South Fork of the Snake, a large system where controlling hybridization will be difficult and uncertain, when the efficacy of a similar effort might be much more effective in a system the size and scale of the Blackfoot. Perhaps this work is happening in the Blackfoot River through other IDFG efforts and was not adequately represented in the proposal or the presentation?

ProjectID: 33008

Assessing effects of Columbia River Basin anadromous fish flow management on the aquatic ecology of the Henry's Fork watershed
Sponsor: HFF
Province: Upper Snake
Subbasin: Upper Snake
FY03 Request: $211,596
5YR Estimate: $618,280
Short Description: This multi-partner project will assess the effects of the Columbia River Basin hydroelectric operations on aquatic ecology of the Upper Snake River Subbasin, specifically the Henry's Fork watershed.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
Response needed. The proposal and presentation dwelled on a description of how "low" flow in both winter and summer may be impacting fish resources but did not adequately convey basic hydrologic information. How does the current hydrograph differ from the historic? Virtually no detail is provided on the anadromous fish flow "loss" of water (its relative magnitude, timing, etc.) and that information, the apparent keystone of the project, is needed. What kind of management recommendations might result from this project and how might they then be implemented?

ProjectID: 33002

Establish Instream Flow and Reservoir Pool Habitat for Native and Other Trout in the Upper Snake River/American Falls Fragment Area
Sponsor: IDFG
Province: Upper Snake
Subbasin: Upper Snake
FY03 Request: $104,100
5YR Estimate: $1,055,700
Short Description: Assess instream flows and American Falls Reservoir fishery pool shortfall for sustainable Yellowstone cutthroat trout and other game fish species. Identify options and long-term strategies for improving water quantities where necessary.
Response Needed? No - Not Fundable
ISRP Preliminary Recommendation and Comments:
Not fundable because the benefits to fish and wildlife are minimal. There is clear evidence of a long-standing biological problem in low flow years stemming from over appropriation of river flows. However, neither proposal nor presentation offered avenues that seemed sufficiently strong or novel to achieve solutions. There was no evidence of active collaboration with the Shoshone–Bannock Tribes. The claim of native fish benefits is tenuous, with 97% of the American Falls Reservoir catch being nonnative species.

ProjectID: 33012

Flow Augmentation In The Upper Snake River Sub-Basin To Benefit Anadromous, Resident Fish And Wildlife Species.
Sponsor: USBWU
Province: Upper Snake
Subbasin: Upper Snake
FY03 Request: $1,117,911
5YR Estimate: $15,981,384
Short Description: Address restrictions & concerns that arise from the lease of irrigation water. Lease water from Upper Snake River water users to release & protect from the Snake River headwaters to below Hells Canyon Complex for the benefit of fish & wildlife.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. This proposal has the potential to be effective and provide benefits to Snake River fish and wildlife. The sponsors appear well positioned to make progress toward meeting their objectives.

This proposal is to lease water in the upper Snake to increase flow to assist spring out-migration of juveniles. Under this proposal, individual water rights holders would lease unused portions of their water. Under present practice, water leases are managed by the Water Bank under operating rules that give preference priority to agriculture over other uses. Giving up water for lease puts a farmer at the bottom of the priority list for water in subsequent years, a disincentive for the release of unused water.

The Water Bank is the mechanism by which the state of Idaho has allowed stored water from USBR projects to be rented for flow augmentation for Snake River outmigration to meet USBRs obligation under the 1995 NMFS Biological Opinion.

The provision of more water for out-migrating juvenile salmonids has clear relevance and significance to regional programs. Good technical background to the problem is provided. The nature of the problem is that existing operating rules of the Water Bank provide a disincentive for water users to lease water for flow augmentation through the bank. These disincentives are well documented.

This proposal describes a need for alternative approaches to augment stream flow in the upper Snake. Although the need to augment flow is well documented, the proposal does not indicate why water bank decisions to lease water for this use are not possible in the same manner as previous augmentation to meet requirements of the BiOp.

It is also a large budget proposal without adequate detail to justify the budget. The budget for attorneys, appraisal and remote sensing is about equal to the budget for leasing. It has a very large construction and implementation budget without adequate justification. Details in the tasks and methods are sparse. The budget combines legal research, appraisal and remote sensing into one category. Budgets for these component parts should be broken out by task.

More details should be provided under Planning and Design Objectives 1, 2, and 3: what will be researched in the legislation and policies? What are the questions to be answered and the methods that will be used to answer those questions? Is enough known already to establish the constraints to leasing water through the Bank and to identify and document the needed changes?

How will “fair market price” be determined? The proposal does not provide details beyond “draft terms of water rental contracts” and “establish terms of contracts”

What is the biological basis of the 3000-acre feet goal for water augmentation?

Under Operation and Maintenance, Objective 1 needs much more detail and specifics, particularly under methods.

Under Monitoring and Evaluation: the focus is only on contract compliance. Is it really necessary to use remote sensing to monitor compliance with a leasing contract? How is compliance done under existing water lease contracts? This project should be tied to related projects that will monitor and evaluate the effectiveness of this level of flow augmentation for fish migration.

Clarification is needed on key personnel that would be involved. Those personnel initially listed appeared well qualified but apparently have conflict of interests.

ProjectID: 33010

Shoshone-Bannock Tribes Fish Production Program
Sponsor: SBT
Province: Upper Snake
Subbasin: Upper Snake
FY03 Request: $90,000
5YR Estimate: $90,000
Short Description: Assess history, current status and future fish production needs of the Shoshone-Bannock Tribes in the Upper Snake Subbasin.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed for a number of reasons. This is the follow-up proposal to the now-terminated Joint Culture Facility project.

The proposal is inadequate for technical review in its current state. It is primarily a plan for a plan, rather than a detailed proposal. While it describes in some detail the history of the Joint Culture project that led to this new proposal, it fails to provide any meaningful details on the specific tasks proposed for the Scientific Oversight Team's consideration, a timeline for the project, and criteria for membership on the Scientific Oversight Team. Responses provided during the project presentation indicated that these criteria had not yet been developed, nor had any steps been taken to establish a Technical Oversight Committee that would likely be charged to develop the criteria, tasks, and timeline for the Scientific Oversight Team. Similar information on the tasks, timeline, and criteria for membership on the Technical Oversight Committee is also lacking and needs to be provided.

ProjectID: 33013

Evaluation of Pisces Fish Protective Water Intake System
Sponsor: BPI
Province: Upper Snake
Subbasin: Upper Snake
FY03 Request: $273,500
5YR Estimate: $273,500
Short Description: Complete development and testing of the Pisces Unit in a controlled location to evaluate fish reaction and fish passage efficiency.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. Project proponents need to identify guidance problems that can be overcome by using this equipment. A convincing argument needs to be made that this equipment has benefits to fish that are not available with other technology. Both this proposal and a prior presentation (in the Mountain Snake Province) focused nearly exclusively on the technology rather than the application. What sort of use is visualized?

ProjectID: 33003

Sage Grouse Distribution and Habitat Use in the Upper Snake River Basin, Blackfoot and Willow Creek Drainages.
Sponsor: IDFG
Province: Upper Snake
Subbasin: Upper Snake
FY03 Request: $211,716
5YR Estimate: $548,316
Short Description: Document sage grouse trends, movements, habitat use and survival to develop recovery plan.
Response Needed? No - Not Fundable
ISRP Preliminary Recommendation and Comments:
Not fundable. Although the presentation was informative, the proposal was inadequate to justify further response. The tasks and methods for the planned research in objectives 1, 2, and 3 are too brief to allow a through scientific review. The specific sample areas, methods, sampling frequency and intensity (i.e., how many samples of what type where and when), and data collection procedures need to be specified in detail. In addition, the ISRP believes that sufficient information may be available in the literature to develop a recovery plan for sage grouse in these areas. We suggest that a comprehensive assessment of sage grouse habitat be made by the working groups across southern Idaho, including a working group for this area, and that a proposal be prepared for protection and rehabilitation of wildlife habitat that would benefit not only sage grouse but multiple species as in proposals 199505700 and 199505701.

ProjectID: 33011

Implementing land use for resource and community sustainability at the county and regional level.
Sponsor: IDFG, U of I, MSU, OSC
Province: Upper Snake
Subbasin: Upper Snake
FY03 Request: $243,051
5YR Estimate: $721,651
Short Description: Resource and community information will be assembled into a GIS decision support system to be used by county commissioners and planners in implementing land use.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. In regard to objective 3, an illustration of the type of mathematical formula that would be developed needs to be provided with illustration of predictor and response variables. Additionally the response should include a discussion of how the model would be verified or ground-truthed. How will this information be transferred to other watersheds? What is the tie to the Fish and Wildlife Program and the upcoming Council's subbasin planning effort?

In theory this may be a good idea, but will this project be a positive fit with the local planning efforts? Letters of endorsement from local entities are requested, such as from the Henry's Fork Foundation and the Henrys Fork Watershed Council.

Why should BPA fund a project that seeks to affect local planning?

PART II. Columbia Cascade Province

The proposals are arranged by subbasin and in close to the same order they were presented during the ISRP site visit workshop.

GENERAL COMMENTS

In the course of the review, two salmon related proposals rose above the other salmon proposals because of their potential to add significantly to the numbers of adult salmon returning to the Columbia River. These two are straightforward efforts to restore salmon to areas from which they have been extirpated, and have a very high likelihood of success. These are Project ID #199604000 Evaluate the Feasibility and Risks of Coho Reintroduction in the mid-Columbia, and Project ID #200001300 Evaluate an Experimental Re-introduction of Sockeye Salmon into Skaha Lake, in conjunction with Project ID #29016 Return of Sockeye Salmon to their Historic Range.

Coho were formerly present in the mid-Columbia and it is only reasonable and proper that they be re-introduced. Efforts by this project to date have resulted in returning adults that have spawned successfully in the wild, and provided a brood stock for future propagation. We recommend that this project be given high priority for funding, but at levels commensurate with the specific comments we provide later in the text. While we are in agreement with the goals of this project, there are details that we believe amount to over engineering a process that is quite likely to proceed naturally as long as fishing rates in the lower river are kept at tolerable levels. In particular, the need for a complex of hatcheries and acclimation ponds is questionable.

Sockeye formerly were present and abundant throughout the system of lakes in the Okanogan basin in the U. S. and Canada, prior to their being blocked by irrigation dams in both countries. If concerns are alleviated about the potential for returning sockeye and other salmon and steelhead to transmit diseases to fishes now present in the Canadian portion of the basin, it appears that the Canadian entities will agree to allow their reintroduction. One proposal Project ID ##200001300 Evaluate an Experimental Re-introduction of Sockeye Salmon into Skaha Lake is designed to determine what the likelihood of disease transmission might be. If the results are favorable, as anticipated, sockeye may be allowed to pass into Skaha Lake. The associated study, Project ID #29016 Return of Sockeye Salmon to their Historic Range, is proposed to investigate the feasibility of providing passage from Skaha Lake into Okanogan Lake by either removing or altering the irrigation dam between them. It is estimated that an additional 18,000 adult sockeye might return to spawn in the area thus opened. Other salmon and steelhead would also benefit.

At the other extreme, we found the Salmon Creek proposal, Project ID #199604200 Restore and Enhance Anadromous Fish Populations and Habitat in Salmon Creek, to be unjustified on the basis of small numbers of fish expected to be produced (in the low hundreds of returning adults based on the oral presentation, but not discussed in the proposal) when compared to the vast amount of effort and resources ($17 to $20 million, plus $500,000 annual operation and maintenance costs) required to restore the highly degraded habitat (dewatered for the lowest four miles, etc.) and the uncertainty of intended results.

UPPER COLUMBIA RIVER SUBBASIN

ProjectID: 29009

Acquire Dole-Beebe Property and Associated Water Rights
Sponsor: WDFW
Subbasin: Columbia Upper Middle
FY03 Request: $896,500
5YR Estimate: $929,700
Short Description: Protect and enhance rare Columbia River frontage habitat through acquisition of Dole Northwest, Inc. Beebe orchard property and associated water right.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. The "Objectives, tasks and methods section" is too brief and has no M&E component. The Dole-Beebe property is located adjacent to the Chelan Falls Hatchery, which is funded by Chelan County P.U. D. and operated by WDFW. The ISRP viewed the property during our October site visit. The site possesses many desirable features, including a spring fed rivulet, where newly reintroduced coho salmon were recently observed. The 227-acre property has 6,000 feet of relatively undisturbed Columbia River mainstem riparian habitat. A decision on the project is urgent, because it faces extreme pressure for development. Has the property been recently sold to a developer?

The author needs to work with the game division of the WDFW to include a HEP analysis for value to wildlife, and identification of mitigation credit to BPA. Also, see the other proposals for acquisition or protection of wildlife habitat. The technical background, relationship to other projects, etc. is well written and includes much detail. The author should fill in the detail for methods to establish baseline data and long-term monitoring and evaluation (M&E).

The proponents are referred to the ISRP Review of the Confederated Salish and Kootenai Tribes' Habitat Acquisition and Restoration Plan (19910600) (www.nwcouncil.org/library/isrp/isrp2001-4addendum.htm). The project was reviewed in the Mountain Columbia Province to determine whether it provided scientifically sound criteria and protocol to prioritize habitat acquisitions. The ISRP found that document described a good plan for habitat acquisition and restoration of wildlife habitat in mitigation for lost aquatic and riparian habitat due to the Kerr Project No. 5 located on the Flathead River and could serve as a useful model to other habitat and restoration proposals with some minor revision of the monitoring and evaluation (M&E) component of the plan. The M&E component has subsequently been reviewed and approved subject to minor modifications in ISRP report (www.nwcouncil.org/library/isrp/isrp2001-4AlbeniFalls.pdf). The proponents are also referred to the programmatic section of this report on Monitoring, the specific comments on Aquatic Monitoring and Evaluation, and the specific comments on Terrestrial Monitoring and Evaluation.

The response should describe the plans and methods for their planned stream restoration work. The property has potential for benefits to fish and wildlife but some restoration work is warranted.

ProjectID: 29024

Analysis of multiple land uses and their effects to shrub-steppe habitat and wildlife species, such as roads, patterns of development and agriculture.
Sponsor: DCTLS
Subbasin: Columbia Upper Middle
FY03 Request: $320,000
5YR Estimate: $416,000
Short Description: Document wildlife species and habitat use with varying types and intensities of land use practices, such as urban development, agricultural, rural, development patterns and transportation effects, and regulation in shrub-steppe landscapes.
Response Needed? No - Not Fundable
ISRP Preliminary Recommendation and Comments:
Do not fund. No response is needed. The proposal was inadequate. The proposal is to use existing data to evaluate wildlife habitat and potential risks to populations from roads, development patterns, and agricultural uses. The proposal refers to two previous efforts along this line, both of which used mapping units that were too large to be of use in the proposed context. Existing data on wildlife will be incorporated into the maps. CBFWA managers should contrast usefulness, feasibility, and cost of this proposal with proposal #29019.

Conflicting statements are made concerning the basic source of data. In one place it is stated that existing data will be augmented by use of 1 meter, or better, resolution satellite imagery for baseline vegetation mapping of Douglas County. In another, it is stated that "…large-scale digital aerial photography or satellite imagery…" will be used. Source of and cost of basic data should be verified.

One-meter resolution requires very large data storage and computing capability. A letter of support from Douglas County computer services verifying that the facilities and budget are adequate would have been helpful. Also, apparently plans include sub-contracting some of the work to the WDFW. A letter of support would also have been helpful from WDFW indicating that the proposal is feasible, the budget is adequate, and the department is welling to subcontract for the required work.

The proposal should have included a discussion of use and availability of digital data from the Council's mapping project completed by the Northwest Habitat Institute. Also, see proposal #27003, "Characterize and Assess Wildlife-Habitat Types and Structural Conditions for Subbasins within the Blue Mountain Province" and the ISRP review of proposal #27003 in the Blue Mt. and Mt. Snake Provinces

The proposal left unanswered several questions and issues. Provisions should be included to ensure that meta-data for each of the data layers mapped are made readily available to users. There is no monitoring and evaluation (QA/QC) section. What is an error and what are acceptable error rates for tasks identified in Objectives 2, 3, and 4? How will one monitor and evaluate this project to know that a good job was done? The proposal would be stronger with a detailed "ground-truth" component, perhaps in cooperation with WDFW to confirm the accuracy and precision of estimates of wildlife habitat use and abundance. Complete detail should be given concerning a double-blind sampling and evaluation procedure. The specific sample areas, methods, and sampling frequency and intensity (i.e., how many samples of what type where and when) would need to be specified. Methods are incomplete for Objectives 4 and 5.

ProjectID: 29041

Evaluate Distribution, Abundance, Genetic Structure, and Habitat Use of Bull Trout Populations in the Columbia Cascade Province
Sponsor: USFWS
Subbasin: Columbia Upper Middle
FY03 Request: $186,366
5YR Estimate: $554,142
Short Description: Evaluate distribution, abundance, genetic structure and habitat use of bull trout in the Wenatchee, Entiat, and Methow Rivers. Identify habitat limiting factors for bull trout.
Response Needed? No - Fundable
ISRP Preliminary Recommendation and Comments:
Fundable. No response is needed. This is a high-quality project with a finely tuned cost-effective budget. The proposal is well written, informative, provides appropriate detail on methods and background; links to other work throughout the Columbia Basin; and cites current and appropriate references. The proposal describes linkages to larger regional bull trout database and evaluation efforts spearheaded by Dunham and Riemen out of the Boise USFS Rocky Mountain Experimental Station. Much background work has already been done on bull trout in the Wenatchee River by the FWS and its collaborators, which was funded by others. The proposal relates the work to the BiOps, (NMFS and FWS), Subbasin summary, Washington watershed plans, Forest Service watershed assessments, and the listings by FWS. Oddly, the study is fully laid out in the background section (including methods), which makes the later sections redundant. The proposed work is nicely related to FWS recovery plan development and to several other pertinent studies, mostly not BPA funded.

The project will gather genetic data by sampling 30 fish from each of 40 tributaries to the Wenatchee, Entiat and Methow rivers (what about the Okanogan?). Radiotelemetry will be used to track bull trout migrations. The objective is to determine whether differences exist within and among bull trout from the subbasins. The proponents should include some probabilistic sampling of sites in addition to the traditional index sites and sites selected by radio-tracking. References are needed on dolly varden, bull trout, hybrid.

The contractor for the genetics work is well qualified, and the regional genetics data banking is excellent. There are many literature references. There are good resumes of well-qualified staff, including a likely contractor for the genetics work. The study will certainly yield information about bull trout that will be important for its conservation (as the prior work by the proposer has already done). The information is needed for effective management of this species.

The budget for this proposal is noteworthy; indeed, it is modest (half or less) in comparison to many other similar bull trout proposals we have reviewed in earlier provincial reviews. It is targeted very specifically and the very helpful budget information is tightly linked to the objectives and tasks identified for the project. Good job!

ProjectID: 29043

SSHIAP - Columbia Cascade Province
Sponsor: WDFW
Subbasin: Columbia Upper Middle
FY03 Request: $390,000
5YR Estimate: $540,000
Short Description: Project will provide routed & segmented hydrolayer, and collate and synthesize data on 19 aquatic habitat variables over an estimated 22,500 mi of streams in the subbasins of the Columbia Cascade Province.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. The two page "Objectives, tasks and methods section" is too brief to allow review. Detailed methods should be given.

The proposal is to extend the data collection and management system developed under SSHIAP for western Washington to include the Columbia Cascade Province. It would provide a central source for data available on 10,000 miles of streams, and present these data at a 1:24000 scale. Members of the review team have used the information on fish distribution from the SSHIAP and found it to be extremely helpful. Parts of the proposal are complete, clearly presented, and reference pertinent basic literature on the subject. The staff appears highly qualified for and experienced in the work involved.

The sponsor should incorporate elements of their response from the Blue Mountain Province. See www.cbfwa.org/files/province/blue/projects/27009.htm#reviews.

The proponents should discuss the quality of existing data and whether they are adequate to support the proposed work. Methods for providing meta-data for each of the data sources should be described.

There should be a monitoring and evaluation section in the 'Objectives, tasks and methods' section that is more than the usual QA/QC work in mapping projects. How are errors quantified and what are acceptable error rates for each of the data layers? For example, what is the error rate for "known fish distribution?" For habitat types? For Fish Passage Barriers? How will one know that a good job was done? Or, that the project was a success in quantitative terms? The CBFWA review remarks for the proposal 27009 in the Blue Mt. Province were "The reviewers question whether the 75-80% accuracy rate is acceptable and whether the work would be performed at the correct scale." The ISRP saw no discussion of accuracy rate in the objectives, tasks, and methods section.

The proposal would be stronger with a "ground-truth" component in the tasks, perhaps in cooperation with other WDFW departments to confirm the accuracy and precision of mapped components. Complete detail should be given concerning a double-blind sampling and evaluation procedures. The specific sample areas, methods, and sampling frequency and intensity (i.e., how many samples of what type where and when) would need to be specified.

To assist in formulating a sound basinwide monitoring program, the proponents are referred to the programmatic section of this report on Monitoring, the specific comments on Aquatic Monitoring and Evaluation, and the specific comments on Terrestrial Monitoring and Evaluation.

ProjectID: 29052

Spatial and Temporal Occurrence of Salmonid Pathogens in the Upper Middle Mainstem Subbasin of the Columbia Cascade Province
Sponsor: WSU
Subbasin: Columbia Upper Middle
FY03 Request: $220,832
5YR Estimate: $802,097
Short Description: Monitor the occurrence of salmonid pathogens and assess sources, fate, and transport throughout the subbasin.
Response Needed? No - Fundable
ISRP Preliminary Recommendation and Comments:
Fundable. No response is needed. This would be useful for such pathogen testing efforts as those proposed in the Skaha Lake sockeye reintroduction program. This proposal would use innovative DNA-based detection techniques to assay the waters of the upper middle Columbia River basin for presence and relative abundance of several fish pathogens. Synoptic information on the occurrence of pathogens in broad regions has been hampered by lack of rapid detection techniques (reliance on standard culture approaches). This project would develop for fish pathogens a recently developed DNA-based detection system that has already been demonstrated successfully for human pathogens. The technique would then be applied to detection of pathogens in water samples collected from representative sites throughout the upper middle basin. The analyses would be quantitative. They can process great amounts of water and have fine scale detection rate -- 0.002 organisms per liter. They would work with collaborators to quantify the significance of the presence of pathogens in the environment to actual infection of fish. A dose-response relationship would be evaluated to suggest whether the quantities of pathogens per unit of water are sufficient to be an infectious problem for fish.

This excellent proposal describes the new technique in appropriate detail to be persuasive that it is something worth pursuing for both its technique development and for the pathogen characterization it would provide. The idea is so new, however, that it is difficult for the ISRP to evaluate its potential importance to fish or its practical implementation until results are seen. It is certainly innovative. The proposal goes through a rationale for regional relevance discussing the FWP (briefly), Subbasin Summaries (briefly), general BPA objectives, the Governor's plan, and specific sections and actions of the BiOp. There is a good attempt to integrate the proposed work with other pathogen projects (few) and other regional assessments. The proposal might have been improved by referencing the several BPA-funded fish-pathogen studies of the 1980s. There are good hypotheses, objectives, tasks, and a good timeline. The presentation noted that initial samples will be taken from hatchery outfalls where pathogens could be expected to be most easily detected. Methods are detailed. Expected benefits overall, and benefits to fish are explicitly described. Facilities appear to be excellent and suitable (since the sort of work has already been done for human pathogens). There is an excellent set of resumes for well-qualified staff. The project meets ISRP evaluation criteria.

This proposal would be acceptable for the innovative solicitation (cost limit is $200,000) as well as the province solicitation.

ENTIAT RIVER SUBBASIN

ProjectID: 29014

The Effects of Impoundment on Fish and Amphibian Habitat Use in Eastern Washington
Sponsor: WDFW
Subbasin: Entiat
FY03 Request: $106,187
5YR Estimate: $441,665
Short Description: Identify hydrological effects of impoundments on fish and amphibian habitat and habitat use by comparing free-flowing and impounded systems. Off-channel habitat focus. Enables identification of feasibility of remediation by hydrologic manipulation.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed with more information on fish and sampling methods and relationships to the FWP and BiOp. This is a proposal to compare off-channel habitats and the fish and amphibians in them in rivers that are impounded and those that are not. Although the effects of impoundments on both the impounded reach and downstream channels have been recognized and studied, the alterations of ecologically rich off-channel habitats by changed river hydrology have not received much attention. This is particularly true for amphibians, which have not been studied much at all yet use such habitats extensively. The Entiat, Cle Elum and Tieton rivers are to be compared (the latter two in the Yakima basin; the Entiat is the only fully non-impounded river). Similar alluvial and constrained reaches will be selected for comparisons. If impoundment-altered hydrology results in reduction of habitat quality and quantity, then alternatives for remediation can be identified.

This is a good scientific proposal, with excellent background and justification, but it is weak in justification from the management perspective (Council's Fish and Wildlife Program, NMFS's BiOp, etc.), in its treatment of fish, and in description of sampling methods. The technical/scientific background presents abundant literature references to document past research on dams and their impoundment effects and on off-channel habitats and the need to study them. A statistical design is proposed that includes spatial controls (multiple reaches in the three rivers) and temporal controls (using historical aerial photographs). The proposal relies on the Entiat Subbasin Summary and the shared stakeholder goals, objectives and strategies for the three river basins for much of its justification relative to regional programs. The Forest Service's watershed assessment is also used as justification. The text describes in detail how the research will contribute to objectives and strategies of stakeholders and the fish and wildlife needs identified in the Subbasin Summary. Other than listing applicable RPA's in Part I, the proposal does not refer to the Council's FWP or the NMFS's BiOp, however. Relationships to other projects are given for several ecological studies (I-90 Corridor Species Distribution Study, USGS Amphibian Research and Monitoring Initiative, WDFW's ecoregional planning process) but BPA-funded work is only referenced collectively. The proposal states the overall objective (to quantify differences in fish and amphibian habitat and habitat utilization patterns between impounded and unimpounded streams) and follows with well laid out objectives, tasks, and general methods. A very brief statement of facilities notes that much is available from the proposer's organization (WDFW). There is a long reference list accompanying the many citations in the narrative. A listing of a well-qualified staff is followed by well-prepared resumes. Cost sharing is planned with BLM, USFS, WDNR, and other parts of WDFW.

Although the proposers are well versed in the relevant science and appear to be well connected to related science projects (especially for amphibians), they appear to be poorly connected to other BPA-funded projects (other than the Subbasin Summaries) and the institutional systems that drive them (FWP, BiOp). The proposal has high merit from a scientific standpoint but it would be even better if the authors were more versed in the environmental management context of their work. Nonetheless, the proposal directs its work toward making management decisions regarding river hydrology. Some errors or missing phrases make it difficult to understand the sampling scheme described in the objectives, tasks, and methods section. The sampling plans need to be clarified.

Overall, this is would seem to be an excellent project that could meet the ISRP review criteria if augmented by further information on fish, sampling methods, and relationships to the BPA/Council Fish and Wildlife Program and the BiOp.

In their response, the proponents should indicate if it is possible to use data collection protocols for aquatic habitat contained in the recent publication by Johnson et al. (2001):

Johnson, D. H., N. Pittman, E. Wilder, J. A. Silver, R. W. Plotnikoff, B. C. Mason, K. K. Jones, P. Roger, T. A. O'Neil, C. Barrett. 2001. Inventory and Monitoring of Salmon Habitat in the Pacific Northwest - Directory and Synthesis of Protocols for Management/Research and Volunteers in Washington, Oregon, Idaho, Montana, and British Columbia. Washington Department of Fish and Wildlife, Olympia, Washington. 211pp.

On page 12 a description is given of a proposed sampling design. It appears from the description that there will not be replication, i.e. two samples from a particular stratum at a particular time. The power of the comparison would be greatly increased by providing such replication. The emphasis in identifying OCH's appears to be by comparing maps and aerial photographs. The problem with these sources is that they are "snapshots", which probably will not include an important feature of OCH's, particularly in impounded streams, namely their transitory nature. Some may exist only during a limited irrigation schedule. We suggest a third source of information should be consulted, local knowledgeable biologists or residents. Local observations on the ground may have already identified features of the hydrograph due to impoundment that would narrow the scope of the study. The list of expected fish species on page 14 should probably include the mountain and bridgelip suckers.

ProjectID: 29026

Hanan-Detwiler Passage Improvements
Sponsor: WDFW, YSS
Subbasin: Entiat
FY03 Request: $85,000
5YR Estimate: $95,000
Short Description: The Washington Department of Fish and Wildlife (WDFW), Yakima Screen Shop (YSS) proposes to complete passage improvements within a side channel of the Entiat River. The side channel is associated with the Hanan-Detwiler irrigation diversion.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. The Objectives, tasks and methods section is too brief to allow scientific review. More detail is required in the M&E section even if the monitoring may be conducted as part of another project. They should be able to provide before and after fish presence data. Requirements of the consultant and methods to be used should be provided in detail.

WENATCHEE RIVER SUBBASIN

ProjectID: 200000200

Final Phase of the Chumstick Culvert Replacement and Habitat Restoration Enhancement
Sponsor: CCCD
Subbasin: Wenatchee
FY03 Request: $326,750
5YR Estimate: $488,700
Short Description: Restore salmon and steelhead passage in Chumstick Creek.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. It is commendable that the Chelan County Conservation District has taken the lead among a number of entities, particularly the Chumstick Community Watershed Alliance, Trout Unlimited and several governmental agencies, involved in this attempt to rehabilitate a degraded stream and its surroundings. The drainage area of Chumstick Creek is said to be 78 square miles. Flows in August and September are about 2 cfs, according to the proposal. The proposal focuses on 23 culverts that block upstream migration of salmon and steelhead. The 2 cfs of flow is apparently measured at RM 0.3 where the first of the culverts is present. That culvert has been replaced, as the ISRP saw during our site visit in October. Seven other culverts were replaced during phase 1 of the project, which was funded by BPA to the extent of $176,000 (page 14 of the proposal). As a result, 2.7 miles of Chumstick Creek were opened up to salmon and steelhead. The proposal identifies an additional 12 barriers to be removed in the next phase.

The low numbers of fish likely to benefit from this project make its priority low. More details should be provided on the specific benefits to fish that might be expected from removal of these culverts. How far upstream might chinook migrate, for example? The stream flow in Chumstick Creek certainly becomes inadequate for salmon at some point upstream. How far upstream is that with respect to the culverts that might be removed? What are the ecosystem effects of removing these blocks? The proposal should include a description of a plan for monitoring and evaluating the effects of culvert replacement – at least to the extent of outlining a plan for determining whether fish successfully pass, and what species do pass

The proposal lists some anadromous fish species that supposedly will benefit. However, no source of the information is provided. While, the species do occur in the Wenatchee River and supposedly would benefit to some degree, the proposal should discuss the extent to which each species might benefit. See proposal 29010 as an example, wherein estimates of additional spawning area and rearing area are provided.

Natural questions are: Where are these culverts located? Is there sufficient flow to support salmonids at the uppermost culvert?

The response should address the option to not to replace culverts upstream of the point where stream flow is no longer sufficient to support reasonable numbers of anadromous salmonids. (1 cfs?).

ProjectID: 199604000

Evaluate The Feasibility And Risks Of Coho Reintroduction In Mid-Columbia
Sponsor: YN
Subbasin: Wenatchee
FY03 Request: $2,412,000
5YR Estimate: $14,671,200
Short Description: Determine the feasibility of re-establishing a naturally spawning coho population within the mid-Columbia tributaries, while keeping adverse ecological impacts on other salmonid species of concern within acceptable limits.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. Feasibility of reintroduction appears to have been demonstrated with the returns the past few years. The need to build new facilities is not justified. They have been successful to date using existing facilities. The sampling methods need to be described in greater detail. Genetic monitoring is not adequately justified, since it is a reintroduced stock. This proposal is over done for a reintroduction effort. The low-tech reintroduction effort to date appears successful and they could continue monitoring to verify whether the populations are self-sustaining or habitat limited.

This is a project to lay the groundwork for re-introduction of coho into the Mid-Columbia watersheds of the Wenatchee, Entiat, and Okanogan rivers. Coho have been functionally extinct in the wild in these basins for many years, despite the species being raised and released from area hatcheries (particularly Leavenworth National Fish Hatchery in the Wenatchee basin). The project has been funded since 1996, with experimental work beginning in 1998. It is a feasibility study, with detailed planning, test introductions, monitoring of return rates, and special studies of interactions of the newly introduced coho smolts with existing populations of steelhead and chinook salmon, some of which are ESA listed.

The proposal (with attachments) was well done. The evaluation of re-introduction has been well planned and generally well thought out. An environmental assessment under NEPA was carried out, with a finding of no significant impact (the document was provided with the proposal). Because hatcheries will be used extensively to raise smolts for test releases and potentially for continuing the reintroduction efforts, a Hatchery and Genetics Management Plan was prepared and approved by the ISRP after thorough review (also included with the proposal). The 1999 annual report was appended to give example results. Many of the concerns of ISRP in previous years' reviews were largely addressed during the Step 2 Process and in the proposal.

The proposal generally meets the ISRP review criteria. There would be a definite benefit to fish and wildlife from re-introduction of coho, which once were abundant. The proposal lists valuable results, both in the proposal and in attachments. There is a good background section with references to the Subbasin Summary (although not specifically to the FWP or BiOp). The work has a well-stated vision, with well-defined objectives and strategies. There is an excellent breakdown of objectives, tasks, rationales, and methods (described in a level of detail appropriate for the length of the proposal). Monitoring is built in as an integral part of the feasibility study. Many references are provided (some attached) to document both background and results. Resumes are excellent. There are good maps in the attachments.

Some questions remain. There is quite a bit of subcontracting, but the proposal does not always indicate who the subcontractors are or provide documentation that they are suitable. The costs escalated above the 2002 estimates for 2003, primarily because of additional adult studies. The technical justification for such adult studies seems good, but this cost escalation from 2002 planning might be questioned fiscally. There is no cost sharing; in fact, this proposal funds participation by other agencies that have their own reasons for wanting this work done (and might cost share). These points do not materially affect the ISRP's technical recommendation but may need attention by the BPA COTR.

On a broader scale, the feasibility of reintroduction appears to have been demonstrated with the returns the past few years. Why must the feasibility study continue rather than moving now to a formal

reintroduction? The response in the presentation that the risks of interactions with ESA-listed species need further study should be justified in a response. The need to build new facilities is not justified in the proposal, considering that the project has been successful to date using existing facilities. The response in the presentation that better smolt quality and production efficiency would be obtained needs to be documented and justified in the written response, given that the goal is a self-sustaining naturally spawning population (the feasibility of which is being tested). The sampling methods need to be described in greater detail. Genetic monitoring is not adequately justified in the proposal, since it is a reintroduced stock from known parentage. This proposal seems to be over done for a reintroduction feasibility effort. The low-tech reintroduction effort to date appears successful. A response should explain why a simpler program of monitoring would not be better to verify whether the populations already introduced are self-sustaining or habitat limited.

Further explanation of the ISRP conclusions are provided here. It should be emphasized at the outset that the ISRP is in favor of restoring coho to the mid-Columbia tributaries. Many potential limiting factors are present, however, principal among them being the high fishing rate, formerly about 90% before they reach the mid-Columbia, according to information given in the proposal, and presently about 50%, as a result of tightened regulations. These limiting factors can be overcome if the region decides to take action, and if so, the restoration of coho is probably a certainty.

So what is the problem with the proposal? The primary problem is whether this feasibility study actually constitutes the eventual reintroduction. This is more than semantics, and involves defining what constitutes success. It is the same as the question raised by Washington Trout in commenting upon the draft Environmental Assessment prepared by BPA (attached to the proposal). At page 4 of the EA (p. 62 of the proposal), Bonneville asserts that "Contrary to the assertions of some, this project does not constitute a decision to reintroduce coho to mid-Columbia tributaries. BPA is unwilling to commit substantial resources to such an effort without some indication of its potential for success, as reintroduction of an extirpated fish population is not a well researched action." Despite BPA's conservative approach, it should be recognized that there is a strong possibility that the feasibility project conducted so far will actually result in reestablishment of coho in the mid-Columbia.

From one perspective, the actions (tasks) described in this proposal closely resemble actions that would be taken to establish or reestablish a fish population anywhere. While in the first sentence the EA asserts funding of this work does not constitute a decision to reintroduce coho into the mid-Columbia tributaries, the work includes planting of coho juveniles in substantial numbers in the Wenatchee and Methow rivers, and a related project involves planting in the Yakima River. The numbers planted in the "feasibility study" need to be large enough to be able to follow their survival, with the result that the numbers are also large enough that many impartial observers might consider them to be adequate for reintroduction. In fact, sufficient numbers of returning adults have been observed to date that the proposal includes discussion of counts of coho redds in the wild and the use of captured adults as brood stock. Furthermore, coho have been observed in mid-Columbia waters where they were not planted (the proposal mentions observations in the spring of a run at Chelan Falls). This might be considered a successful reintroduction. In the abstract of the proposal it is stated, "Project success will be defined in terms of the development of a localized brood stock, and increasing natural production with limited adverse impacts on listed and sensitive species." It appears that success is at hand. Natural spawning has been observed (it is not difficult to assign this to the reintroduction work, since there was no coho population prior to the project's inception). Returning adults are being intercepted and used as brood stock; other species seem to be persisting in the presence of the introduced coho.

This "feasibility study" has been underway for some time (since 1996; p. 6). The proposal states that experimental work began in 1998 but there were releases of coho smolts into the Methow River beginning in 1995 (Table 2 of the proposal) and continuing to the present, using Lower Columbia River stock. This Lower Columbia River stock has performed quite well in the Wenatchee River, but not in the Methow. A total number of adults estimated as 1,113 to 2,014 returned from the Leavenworth Hatchery and Nason Creek releases made in 1999 (from Table 2). The proposal notes that during October and November 2000, there were 74 coho redds counted in the Icicle River and 3 counted in Nason Creek. Counts in 2001 were not complete at the time the proposal was prepared. Beginning in 1999 sufficient numbers of adults

returned to the hatchery to provide a brood stock that had survived from plants of lower river stock in the mid-Columbia. These fish returned as adults to the Winthrop National Fish Hatchery in sufficient numbers (numbers not specified) in 1999 that they were spawned at the hatchery and produced 142,291 smolts that were released into Nason Creek in the Wenatchee Subbasin in 2001. The proposal refers to this as the first release of "mid-Columbia brood" (p. 7). The first adult returns from this release are expected to return and spawn naturally in Nason Creek in 2002.

All indications are that the project is ready to move out of Phase 1, the feasibility study, and into Phase 2, the reintroduction per se. The ISRP, in its Step 2 Review, identified the need for a statement in the proposal of specific goals that would determine when feasibility might be established. The response referred to the "Hatchery and Genetics Management Plan Mid-Columbia Coho Reintroduction Program (HGMP)", wherein some expected adult return numbers for the Wenatchee River in the years 2000 through 2005 are given, and for the Methow River for the years 1999 through 2005 (Table 1 HGMP). Also provided were the expected numbers of returning adults that would be used as brood stock and numbers that were expected to spawn naturally. These numbers are so important to the present proposal that the table should be incorporated into the proposal narrative intact. The text in the proposal should then discuss progress toward these objectives. They may be met already. Since the preparation of an EIS will probably require considerable time, it would be well to begin soon.

The proposal could have done a better job with a literature review of reintroduction efforts, generally. There are numerous research studies documenting the restoration of salmon populations that were formerly eliminated. Salo and Stober (date??) summarized the experience up to the time of their report. Their conclusion was that efforts at restoration were more often successful than not, and they were more successful than attempts to introduce salmon anew. Many examples of restoration of salmon have been reported since that time. Particularly important is a review of criteria used to define success.

Much of the ISRP's concern relates to defining the criteria for success of reintroduction, which should be addressed in a response. The proposal says that, "The long-term vision for this program is to reestablish naturally reproducing coho salmon populations in mid-Columbia river basins with numbers at or near carrying capacity." [= reintroduction of coho] The proposal is for continuation of the feasibility studies. We read in the Abstract, paragraph 1, "The feasibility phase has two primary goals: 1) to determine whether a localized broodstock can be developed from Lower Columbia River coho stocks, whose progeny can survive in increasing numbers to return as adults to the mid-Columbia region, and 2) to initiate natural production in areas of low risk to listed species." What if reintroduction can now considered to be feasible, i.e., Phase 1 is accomplished? What will change in the proposal? Will hatchery plants continue? Why, and under what conditions? What if Phase 1 studies indicate the long-term vision is unfeasible (by what criteria)? How many years would it take to decide that? How would the coho then be removed? Would adults be captured and removed from ladders at mainstem dams, or tributary dams or both. Would the chances be good of removing coho entirely?

ProjectID: 29039

The effects of fine sediment on the hyporheic zone: monitoring and evaluating the influence of hyporheic exchange flows on stream temperature.
Sponsor: USFS
Subbasin: Wenatchee
FY03 Request: $102,039
5YR Estimate: $318,525
Short Description: Implement sediment and temperature monitoring; research to evaluate the influence of hyporheic exchange flows on stream temperature and thermal refugia; research to evaluate the influence of fine sediment on the hyporheic zone.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed to better describe the methods and relevance to management actions. This project would likely provide important information on prioritizing habitat restoration projects, but the relevance to stream management should be better demonstrated.

This project would conduct research to evaluate the influence of hyporheic exchange flows on stream temperature and thermal refugia for fish, particularly the influence of fine sediments on hyporheic water exchange (often increased by human activities) and resulting stream temperatures. High summer temperatures are an important limiting factor for salmonids in the Province and hyporheic flow is important for control of temperature. The research would monitor fine sediment in selected reaches of the Wenatchee River and its tributaries, measure hyporheic flow rates, and evaluate these flow rates on stream temperatures as microhabitats, and at channel unit and reach scales using extensive temperature monitoring.

The proposal is very strong as a scientific proposal justifying research on a topic that has yet to make its way into regional planning. There is an excellent background section with abundant and persuasive scientific documentation. The proposal states that hyporheic flow and its implications for stream temperature have not been explicitly made part of regional programs. Nonetheless, the proposers take great pains to justify why it should be included and discusses relevance to the subbasin summary, FWP, and All-H paper. The proposal relates the work to Forest Service projects that monitor sediment and temperature, but not to BPA-funded ones. Objectives are well prepared, although only objective 1 is broken down into tasks in an outline form (a narrative indicates work to be done, mixed with methods). The main points are clear, even though the structure for presenting objectives, tasks, and methods is not as good as expected. The objectives, tasks, and methods section is too brief to allow scientific review. Sample sizes and sampling methods are not adequately described or referenced in the published literature. The specific sample areas, methods, and sampling frequency and intensity (i.e., how many samples of what type where and when) need to be specified. Appropriate statistical analysis procedures should be given. This information should be provided in a response. The one resume is excellent and the proposer seems well qualified to do the work.

There may be adequate information available already on the general effects of silt in the hyporheic zone, but what is lacking is on-the-ground measurements of sediment and changes in rates and locations of deposition that are ongoing. This proposal would fill that gap with additional temperature and sediment monitoring sites in the Little Wenatchee River, White River, Chiwawa River, and Nason Creek. It would complement existing USFS monitoring. No mention is made of sampling composition of soils adjacent to the stream.

There would be clear long-term benefit for fish from this research. In the ISRP's perception, more effort on the hyporheic zone is probably one of the main hopes for restoring stream temperatures to regimes that are suitable for salmon. One question that might have been addressed by the proposal (and should be addressed in a response) is what could be done to restore streams where fine sediments are so abundant that hyporheic flow is obstructed. Does this study end by simply documenting good and bad conditions or could it provide guides for stream rehabilitation. Simplification of stream flows caused by channelization, confinement or reductions in pool/riffle ratios, or accelerated erosion can affect the hyporheic exchange flows, resulting in

increases in stream temperatures. The study potentially could lead to recommendations for measures to address problems of elevated stream temperature by means of manipulations in the hyporheic zone. In the presentation, the proposer indicated that he is thinking of restoration in terms of flood pulses to restore the clean gravel. He thinks physical removal of fine sediments would be too destructive. This project could be used to prioritize potential restoration sites (focusing on sites with functioning hyporheic systems). Amplification in a response would be helpful.

ProjectID: 29027

Comprehensive Inventory and Prioritization of Fish Passage and Screening Problems in the Wenatchee and Entiat Subbasins
Sponsor: WDFW, YSS
Subbasin: Wenatchee
FY03 Request: $361,585
5YR Estimate: $1,338,952
Short Description: Locate and evaluate all culverts, dams, fishways, water diversions, and other human-made features in the Wenatchee and Entiat subbasins, conduct habitat assessments, and prioritize all barriers and unscreened or inadequately screened water diversions.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. The need for more inventory work is given persuasively, suggesting that only about 40% of the stream area has been surveyed. Other survey efforts are summarized. The big difference seems to be that this inventory would be fully stream based, not road based (i.e. cover all stream length where fish would be expected if there were not barriers). Justification by SS, limiting factors analysis, etc. is good. The relationship to other projects is well described both in that section and in the background. Objectives are clear, as are the tasks. The methods rely on standard procedures for both surveys and prioritization developed by the WDFW.

What is needed in the response is provision of a monitoring and evaluation component. How will one know that the project was a success and that results are accurate? (e.g. compare road and stream surveys - what value is added, or conduct independent spot checking of the stream walker's findings.) Some sampling for fish should be included in the proposal to demonstrate project effectiveness. That is, demonstrate whether fish are present below the culverts and barriers but do or do not pass. These observations could be compared to project evaluations based on the criteria in the manual or other instructions given to the stream walkers.

ProjectID: 29028

Fabricate and Install Three New Fish Screens on Wenatchee River Diversions
Sponsor: WDFW, YSS
Subbasin: Wenatchee
FY03 Request: $235,000
5YR Estimate: $291,135
Short Description: WDFW, YSS proposes to fabricate and install 2 new fish screening facilities, and rehabilitate one existing screening facility, on 3 irrigation diversions on the Wenatchee River and tributaries. The facilities will be in compliance with current criteria.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. O&M plans and M&E plans for effectiveness monitoring should be given in detail. Monitoring and evaluation for overall biological effects should be included. The ISRP assumes that overall M&E is the responsibility of other projects, but this project should include pre-construction data from those projects and assure that data will be available post-construction to evaluate the cumulative effects of this and other projects.

ProjectID: 29053

Icicle/Wenatchee Habitat Acquisition
Sponsor: CDLT
Subbasin: Wenatchee
FY03 Request: $1,547,750
5YR Estimate: $1,601,750
Short Description: Acquire and protect a critical 50-acre area of salmonid spawning and rearing habitat at the confluence of the Icicle and Wenatchee Rivers.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
Fundable if an adequate response is provided. The two page objectives, tasks and methods section is too brief for scientific review. Supporting documentation and detailed methods should be given for each of the tasks. In particular a detailed monitoring and evaluation section should be given with reference to actual methods to be used to select study sites and collect data. The specific sample areas, methods, and sampling frequency and intensity (i.e., how many samples of what type where and when) need to be specified. Perhaps the consultants and cooperators can provide this information. The proponents are referred to the programmatic section of this report on Monitoring, the specific comments on Aquatic Monitoring and Evaluation, and the specific comments on Terrestrial Monitoring and Evaluation.

This property seems to include important complex channel-off-channel, wetland, etc. habitat. The side channel adjacent to the property is apparently connected to the main channel during high spring flows. The proponents should further discuss the possibility of reconnecting this side channel for year round flow. The adjacent WDFW land and the Audubon center make it particularly appealing, however the proponents should clarify how much of the property (say, in feet) is adjacent to the Icicle and Wenatchee Rivers. In comparison, how much of the WDFW adjacent 22-acre site is adjacent to the Icicle and Wenatchee Rivers. A map of the area would be helpful.

There is an abundance of important species to protect. It is especially valuable to have been supplied the numbers of redds for various species in the WDFW index site. The Icicle is a key watershed designated by the Forest Service. The organization seems to be quite reputable with in-kind cost shares.

The proponents need to work with the game division of the WDFW to include a HEP analysis for value to wildlife, and identification of mitigation credit to BPA for loss of wildlife habitat. See the other proposals for examples of computing the amount of credit for wildlife in land acquisition or protection projects.

METHOW RIVER SUBBASIN

ProjectID: 29046

Develop a Coordinated Resource Management Plan for Beaver Creek and plan and implement habitat restoration activities.
Sponsor: OCD
Subbasin: Methow
FY03 Request: $51,783
5YR Estimate: $133,783
Short Description: Develop a Coordinated Resource Management Plan for the Beaver Creek drainage; restore habitat complexity; protect and restore riparian habitat; and research alternatives for ensuring perennial flow in lower Beaver Creek.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. This project appears to offer potential benefits to steelhead and spring chinook, if other planned activities in the drainage are completed. Steelhead spawn and rear in the drainage at the present time. The proponents should provide one response that also addresses proposal #29010

The "Proposal objectives, tasks and methods section" is too brief for scientific review. Details are needed on methods for each specific task proposed including need for, location and construction of gaging stations, monitoring of flow, fencing, monitoring and evaluation. The specific sample areas, methods, and sampling frequency and intensity (i.e., how many samples of what type where and when) need to be specified.

There is significant cost share by BOR and CCT and smaller amounts by other agencies. With respect to in-stream flow the primary objective appears to be to help BOR identify options for restoring year around flow to lower Beaver Creek. Options include increased storage, upgrading irrigation systems, improved on-farm water management, conversion to wells, and pump exchange from the Methow River. The proposal notes that the lower 1.25 miles of Beaver Creek go dry in most years. Our notes from the presentation suggest that in five to seven years out of ten the creek has water. The response should provide a table of data clarifying the extent of the problem. Proposal #2018 includes a map showing that location of the Methow River – probably including the mouth of Beaver Creek - is a losing reach. Measures designed to increase in-stream flow may be problematic, considering the nature of the landscape. The proponents should address whether any such efforts should await completion of #29018, when it should be possible to better develop the feasibility of maintaining flows in Beaver Creek.

The proposers have already done a lot in the watershed to identify and address problems. WDFW has screened all diversions. The Conservation District is already working on passage at the first 5 dams. The DOT has provided passage via a new culvert under the highway close to the mouth of the Beaver Creek. Project links to three other proposals are good and logical (whether or not they are funded), as are links to existing BPA projects and collaborations with other agencies. Work in the Beaver drainage is among the best cooperative efforts the ISRP has reviewed. What is the relationship of the CRMP to other watershed assessment methods?

ProjectID: 29010

Restore Passage on Private Lands in Beaver Creek Drainage to Benefit Spring Chinook, Steelhead and Bull trout
Sponsor: WDFW
Subbasin: Methow
FY03 Request: $239,774
5YR Estimate: $1,204,074
Short Description: This project will further long-term, ongoing efforts to fully restore anadromous fish passage on private lands within the Beaver Creek drainage.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. This project appears to offer potential benefits to steelhead and spring chinook, if other planned activities in the drainage are completed. Steelhead spawn and rear in the drainage at the present time. The proponents should provide one response that also addresses proposal #29046. In particular, the proponents should explain why this project should be funded before the CRMP proposed in #29046 is completed.

This proposal appears to have higher priority than some of the other similar projects in this Province, e.g., there is a similar proposal for work on Chumstick Creek, a much smaller stream with correspondingly less potential benefit to anadromous fish.

The proponents should provide better estimates of the expected increased production of steelhead and potential production of spring chinook if this and other projects in the Beaver drainage are completed.

A detailed M&E plan is needed in the "Proposal objectives, tasks, and methods" section, particularly for the baseline, pre-project monitoring but also post-project monitoring. The specific sample areas, methods, and sampling frequency and intensity (i.e., how many samples of what type where and when) need to be specified. Baseline data should be given if monitoring is already in place.

Most of the money goes to actual construction work at dams and culverts. There is good in-kind cost sharing, but some of this appears to be from other current proposals. There are appropriate supporting quotes from the FWP, BiOp, and Salmon Recovery Plan, but the proponents should indicate how Beaver Creek stacks up against other watersheds for potential production of anadromous fish. The lack of water in late summer seems to suggest a real problem with restoration and potential to obtain late season flows should be more completely addressed in the response.

ProjectID: 29020

Beaver CR Campground Rehabilitation
Sponsor: OCD
Subbasin: Methow
FY03 Request: $60,445
5YR Estimate: $71,095
Short Description: Restore riparian area of Beaver CR campground by building 1300 feet of fencing to keep users away from stream bank. Plant as needed riparian species within the fenced area to speed restoration of riparian zone. Build hitching rails.
Response Needed? No - Not Fundable
ISRP Preliminary Recommendation and Comments:
Not fundable. No response is needed. The proposal does not demonstrate a significant benefit to fish and wildlife because of the size of the riparian area to be protected and the unlikely change in the use. The project might be funded later under #29046 if it ranks out high in priority in the CRMP. It is unclear if this project has been identified as a high priority project in a watershed assessment of the subbasin.

This proposal lacks much in detail and content (e.g., no resumes) and no monitoring and evaluation (M&E) plan to see if the riparian fencing and replanting works. The proposal is good in that there is good community support with volunteer materials and labor. The section on relationships to other projects could have better identified the other Beaver Creek work and proposals presented in the WDFW proposal (29010) and placed this work in that context (how important is the riparian problem at the campground relative to barriers, for example). It is unclear what permits and NEPA work are needed for this project.

ProjectID: 29037

Ecosystem Diagnosis and Treatment in the Columbia Cascade Province
Sponsor: WDFW, YN, CCT
Subbasin: Methow
FY03 Request: $925,563
5YR Estimate: $1,816,938
Short Description: Provide an analytic foundation, including refinement of the coarse screen EDT, needed for the aquatic assessment and management components of subbasin plans in the Columbia Cascade Province.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. To be fundable this proposal should have a letter of support from the Council that it is needed as part of the subbasin planning effort.

The proposal should be reviewed in the context of the subbasin planning effort rather than the provincial review. Would this proposal add significant value to the EDT analysis already envisioned and potentially funded through that effort. The proponents should indicate what scale of information is needed for the subbasin planning? A review of the scientific soundness of EDT and this further refinement needs to be done at a more in depth level than can provided as part of the Columbia Cascade Provincial Review. Perhaps this project and related EDT activities should be reviewed by the Council's and NMFS' Independent Scientific Advisory Board (ISAB) in the broader context of subbasin planning and recovery of anadromous fish in the entire Columbia Basin.

The response should report current results from the use of EDT in the Entiat subbasin, and other subbasins starting with the Grand Ronde subbasin in 1992 and illustrate the role of EDT in selection of specific management actions for these subbasins. The response should identify specific management actions that have or will be carried out as a direct result of the use of EDT. Please give names and contact information of individuals responsible for these management actions. Include letters of support from individuals who have used EDT to reach consensus on management actions.

Is the following quote from proposal #29021 correct? "Habitat models such as the Ecosystem Diagnosis and Treatment model provide an adequately clear picture for relative conditions across a well-defined set of environmental attributes but stop short of assisting planners and decision-makers with identifying specific actions (e.g., realign a segment of stream, mobilize and store sediments, normalize a hydrograph, stabilize a bank, remove a road, modify a dike structure) that will result in changes in the condition of habitat attributes, or the ability to assess the effects of specific actions." If correct, explain why this project should be funded. If incorrect, provide some counter examples. Proposal #29021 also has the critical question "Which alternative project strategy exhibits the 'best' expected performance or outcome?" Is this an output of an EDT analysis? Give real illustrations.

What exactly is the expected outcome of the proposed EDT analysis for a given subbasin? In the relationship to other projects the phrases "EDT could be used to….." or "EDT may be useful in ……" are given. Where are the demonstrated important uses and results?

The response should describe in detail a monitoring and evaluation component for this project. What real data will be collected and how will the project be evaluated (ground truthed)? How and when will one know that the project was a success or a failure? Apparently, the Regional Analytical Advisory Committee will provide some ground-truthing and review of EDT for use in subbasin planning, but these efforts are just underway and should be described in detail. What is the work plan and method developed by the RAAC for the EDT validation project? The copy of the proposal may have been cut off short. References and resumes should be given. The response should contain references to and perhaps copies of critical documents (technical appendices) that give the actual mathematical formulas and methods behind EDT.

ProjectID: 29030

Early life history and survival of spring chinook salmon and steelhead in the Methow River Basin
Sponsor: PNNL
Subbasin: Methow
FY03 Request: $382,939
5YR Estimate: $1,150,939
Short Description: Investigate differential survival, behavior and habitat selection of juvenile spring chinook salmon and steelhead in relation to associated with warm groundwater presence, river ice, and other habitat parameters.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. Habitat selection by hatchery fish is likely not representative of habitat use of wild fish. The proposal focuses on survival overwinter, when major mortalities of juveniles are thought to occur. The objective is to identify features of the habitat that might be enhanced to improve survival. It is questionable whether they will be able to locate 500 wild juvenile spring chinook for tagging during the winter in the Methow River, as proposed on page 4. To find that many in different habitat types may be stretching it too far. As suggested on page 7, observed abundance may be related to habitat where warm groundwater infuses into the stream. This may not be indicative of true relative abundance because it has been observed that salmon juveniles may burrow into the substrate during the winter, where they would be difficult to sample. How will the above problems be overcome?

The proponents need to give more consideration to the overall sampling plan for selection of "study sites" and "sub-sampling for fish or habitat points" to observe. Is the "sample size" that will allow statistical

inferences to the entire area the number of study sites, or the number of fish? Will sites be selected by a probabilistic method allowing statistical inferences to entire stream reaches, or is the plan to use more of a controlled "study" where sites are subjectively selected to represent different environmental conditions. Also, more consideration should be given to the required "sub-sample sizes" for the number of fish to observe in each task.

ProjectID: 29034

Life History Study of Salmonid Rearing In The Upper Methow River
Sponsor: YIN
Subbasin: Methow
FY03 Request: $273,710
5YR Estimate: $788,793
Short Description: This research proposal is design to address the need to understand salmonid temporal and spatial life history patterns and productivity in the upper Methow River, with the focus in the intermittent portion of this reach.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. This should be a compare and contrast study with the other areas that stay watered above and below the losing reach. This needs to be described in better detail. What are the potential management applications, the benefits to fish? Will the tagging (marking) have an effect on recapture rates in the same or lower trap? It seems that the marking methods should have been researched and described in the proposal. Have the sponsors thought about the possibility that some migration might occur subsurface in this extremely permeable substrate, where fish would not be susceptible to the rotary traps?

Methods in Objective 3 and 4 should include a description of sampling procedures for selection of the "20% of each reach" or "pools" during the dry period. Will the sampling be probabilistic to allow statistical inferences to the entire study area? Will the same sites be snorkeled each time, or will new 'random' sites be selected? Also, objectives 3 and 4 should include a comparison of habitat availability vs. habitat used using appropriate sampling methods and analysis techniques described in, for example, Manly (1993, 1998) and Alldredge (1998).

ProjectID: 29002

Conjunctive Use and River Enhancement (CURE) for Habitat Improvement in the Upper Methow River
Sponsor: CBC
Subbasin: Methow
FY03 Request: $500,000
5YR Estimate: $5,082,050
Short Description: Enhance late summer streamflows in the Upper Methow river through direct streamflow augmentation using groundwater from the prolific Methow Aquifer. Groundwater pumping rates of up to 25 cfs for periods of up to 90 days (4,600 AF storage equivalent).
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. The potential benefits or harm to fish at one of the most important spawning areas in the Methow, in the gaining reach downstream of the Boesel fault, are not adequately described. The assumption is that only benefits exist, but the proponents should address the potential of decreased cool water upwelling in this reach.

The potential long-term benefits to fish would seem to be increased flow in the lower Chewuch. The proponents should provide evidence that the water will stay in the Chewuch and provide estimates of increased production of anadromous fish in Chewuch River.

The proponents should provide evidence that this project has high priority in a watershed assessment of the Chewuch River in comparison to other potential means to provide increased flows for the benefit of fish and wildlife such as purchase or donation of water rights for instream flow, improved irrigation methods with water savings, etc. One question that arose after the presentation was "Could they leave water in the Chewuch and then pump it from the Chewuch back into the irrigation ditch at the confluence with the Methow." This project needs to be considered in the context of coordinated water management in the entire Upper Methow and a watershed assessment.

This is an interesting proposal for rerouting flows in the coupled hyporheic and surface water flows. The proponents believe that there is enough delay in the hyporheic (groundwater) movement that they can pump 1000 feet from the stream channel and not decrease stream flows at that point in time and space. Thus, the wells could increase streamflow and the water extracted would be recharged from the stream in the spring. There is pump testing and modeling to support this view. There is good cost share (250K for 500K project), but high out-year costs (over 3 million in 2007) that should be considered by Council. Council should consider relative costs of alternatives for providing long term increased flow in the Chewuch and Methow. Regardless of the priority of this project in a watershed assessment, the ISRP would not be in favor of committing support beyond the initial modeling and pilot tests.

Monitoring and evaluation plans should be given in detail for fish and aquatic resources, including baseline pre-project monitoring in the Chewuch and Methow. The specific sample areas, methods, and sampling frequency and intensity (i.e., how many samples of what type where and when) need to be specified.

ProjectID: 29036

Ali Long Rearing Channel Habitat Improvements- Upper Methow River
Sponsor: YIN
Subbasin: Methow
FY03 Request: $58,500
5YR Estimate: $95,500
Short Description: Reconnect a historic side channel in the upper Methow River, and addition of inchannel structure as needed to increase channel complexity.
Response Needed? No - Not Fundable
ISRP Preliminary Recommendation and Comments:
Not Fundable. No response is needed. The proposal is to reconnect a side channel of the Methow River at RM 69 to the main stream. The intent is to open up the channel as rearing habitat for salmonids. However, it is acknowledged that it is difficult to describe the importance this area might have because it is located within that portion of the Methow River that is frequently dewatered in the fall and winter. We note that proposal #29018 provides a map of the Methow River showing this reach as a "losing reach", where there is a net loss of water. Under the circumstances it would seem to be unwise to proceed with the current proposal to enlarge the area of the stream, when there is the possibility that it might lead to higher losses of water. The action proposed should probably better wait for the results of #29018 before proceeding with this idea.

Do not fund until the hydrology of the Methow Basin is better understood, so that predictions of effects of such actions on net stream flow might be possible. Rather than increasing habitat for rearing of juvenile salmonids, the project might result in increasing the number of juveniles that are stranded when the area dewaters.

ProjectID: 29044

Protecting Habitat on Private Lands in the Methow Watershed
Sponsor: N/A
Subbasin: Methow
FY03 Request: $1,153,100
5YR Estimate: $3,459,300
Short Description: Protect and provide long-term stewardship of habitat on private lands in the Methow Watershed through the use of perpetual conservation easements.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
Fundable if an adequate response is provided. This project demonstrated benefit to fish and wildlife with good local support with non-BPA funding.

The proponents need to also consider the value of protection of terrestrial resources to BPA's mitigation for loss of wildlife habitat. Indication of wildlife habitat units (determined by the HEP procedures) protected would strengthen the proposal.

Monitoring for biological resources is weak. Effectiveness monitoring is planned, but the proponents need to assure that the overall benefits of the cumulative effects of this project and others are being monitored. The response should describe their methods for establishing selection and prioritization of acquisitions. The proponents are referred to the ISRP Review of the Confederated Salish and Kootenai Tribes' Habitat Acquisition and Restoration Plan (19910600) (www.nwcouncil.org/library/isrp/isrp2001-4addendum.htm). The project was reviewed in the Mountain Columbia Province to determine whether it provided scientifically sound criteria and protocol to prioritize habitat acquisitions. The ISRP found that document described a good plan for habitat acquisition and restoration of wildlife habitat in mitigation for lost aquatic and riparian habitat due to the Kerr Project No. 5 located on the Flathead River and could serve as a useful model to other habitat and restoration proposals with some minor revision of the monitoring and evaluation (M&E) component of the plan. The M&E component has subsequently been reviewed and approved subject to minor modifications in ISRP report (www.nwcouncil.org/library/isrp/isrp2001-4AlbeniFalls.pdf). The proponents are also referred to the programmatic section of this report on Monitoring, the specific comments on Aquatic Monitoring and Evaluation, and the specific comments on Terrestrial Monitoring and Evaluation.

What are the long-term O&M requirements of this project? Will easements eventually be "owned" by a government agency? What is the relationship of this project to the The Nature Conservancy, if any?

ProjectID: 29025

Columbia Cascade Province Pump Screening
Sponsor: WDFW, YSS
Subbasin: Methow
FY03 Request: $218,918
5YR Estimate: $916,142
Short Description: Comprehensive re-assessment, re-inventory, and mitigation of previously inventoried pump screen sites in these three subbasins.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. The response should contrast the cost and benefits of their approach versus using infiltration galleries. Clarify sources of funding for other screening work, why is BPA funding needed. Describe monitoring of cumulative effects.

This project would revisit the screens on pumped water diversions in the Methow, Entiat, and Wenatchee basins in order to bring all of them up to current federal and state screening standards. All pump intakes

would be inventoried using existing databases. An assessment and correction protocol would be modeled after the Voluntary Cooperative Compliance Program, currently being used in the Walla Walla subbasin funded by BPA. The protocol would include diversion owner agreements (water rights and O&M responsibilities), cost-share agreements (15% by owner), permitting, and coordination with local vendors for making corrective measures to the intakes. Local venders would do the installations. This project would identify appropriate screens for the site and irrigators needs. A four-year project would move progressively from basin to basin. The project would be undertaken by the Washington DFW's Yakima Screen Shop, which has a long track record of screen design and installation. Plans for funding through the state have not materialized because of budget shortfalls, the work was shifted to the salmon recovery program (for which WDFW is not eligible), and BPA is being asked to fund the work.

The proposal was straightforward and well written, generally meeting the ISRP evaluation criteria. There was a good background section, which cited the subbasin summaries and the Habitat Limiting Factors Analysis. The status of inventories and of the screening criteria were provided and the need was adequately justified. The proposers expect clear and immediate benefits to fish from the improvements in screens. The work was well related to regional needs with specific discussions of the HLFA, each subbasin's Subbasin Summary, the NMFS BiOp (with specific RPA cited), the Upper Columbia Salmon Recovery Board's technical team recommendations, and the Council's Fish and Wildlife Program. A general text on relationship to other projects was adequate even though it did not cite specific projects. There are logical and explicit objectives and tasks for 3 years. The Yakima Screen Shop has excellent staff and facilities and a long track record of accomplishing such work.

Some questions remain that should be answered in a response. The objectives, tasks and methods section is too brief to allow scientific review for benefit to fish and wildlife. It is not clear how long-term, cumulative effects of these improvements will be monitored. How will any improvement in local runs that might be attributed to these screenings be documented? Is there a regional monitoring program that will be used to measure success? From an engineering perspective, how would these screen designs perform compared to infiltration galleries that are being used elsewhere? The shift in funding sources suggests that the state may see this effort as a low priority; is this true? One wonders why the Methow was chosen for first action and the Wenatchee for last in the sequence. The relationship of this screening project to other screening projects proposed by the screen shop (including priorities) could be better explained.

ProjectID: 29012

Replace Rockview Diversion with Groundwater Withdrawal and Restore Instream Habitat
Sponsor: WDFW
Subbasin: Methow
FY03 Request: $141,954
5YR Estimate: $296,454
Short Description: Remove Rockview diversion, transfer surface water withdrawal to groundwater withdrawal, and enhance associated stream channel and riparian habitat
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
Response needed. Fundable if an adequate response is given that describes their restoration methods and monitoring and evaluation plan in greater detail and includes HEP wildlife credits.

This project is to remove an existing water diversion and screen on the Methow River at the Big Valley Ranch Unit (WDFW's Methow Wildlife Area) and restore the stream channel and associated side channel. It will take 3 years. The current screen and bypass do not meet established fish-protection criteria. The project is located in the "gaining" reach of the Methow River downstream of the zone that becomes dewatered in the fall. WDFW has acquired the Big Valley Ranch, whose water source is the Rockview Diversion Dam. WDFW proposes to remove the dam and provide water for irrigating the wildlife area by sinking wells, which are funded separately. The irrigation ditch would be abandoned. The removal of structures (with offsite disposal) and restoration of the diversion/screen/bypass site to a functioning side channel will benefit several fish species that are endangered, threatened, or of concern (as listed in the

proposal). There would be monitoring and evaluation of fish distribution/abundance, growth and survival before and after the work.

This is a concise, well-written proposal, which generally meets the ISRP review criteria. The project is well justified by a thorough background discussion and specific references to the Subbasin Summary, FWP, BiOp, Upper Columbia Regional Technical Team and Upper Columbia Salmon Recovery Board. There would likely be benefits to fish, principally in the form of unrestricted movement and availability of side-channel habitat for rearing and over wintering. There should also be benefits to wildlife, although these were not mentioned. The proposal discusses 21 related projects. The objectives and tasks are listed (however, no methods are presented other than standard words about standard environmental engineering). Existing support structure of WDFW will be used (general statements are given about what that consists of). Relevant references are given. Staff resumes are minimal, but acceptable. The proposal is persuasive that the work is valuable and timely.

Several questions remain that need to be answered in a response. The objectives, tasks, and methods section does not contain any methods for review. The response should describe the restoration methods in greater detail. The proposal provides a skeleton of an adequate monitoring and evaluation plan but the response should fill in the details on sampling methods, planned data analysis, etc. The response needs to include a HEP analysis for increased value of the site to wildlife, and identification of mitigation credit to BPA from the restoration (see proposal #199609400 for an example of an ongoing project).

ProjectID: 29018

Analyze ground-water and surface-water exchanges influencing anadromous salmonid habitat in the Methow River and its major tributaries
Sponsor: USGS
Subbasin: Methow
FY03 Request: $188,937
5YR Estimate: $247,649
Short Description: Identify the locations of ground-water and surface-water exchanges in the Methow, Twisp, and Chewuch Rivers, quantify the exchange rates and their seasonal patterns, and assess the influence of these exchanges on spring chinook habitat.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. This is a project to identify the locations of ground-water and surface-water exchanges in the Methow, Twisp, and Chewuch Rivers, to quantify the exchange rates and their seasonal patterns, and to assess the influence of these exchanges on fish habitat, especially for spring chinook salmon. Numerous other listed species also occur in the area. The study area is hydraulically complex, with reaches that alternately lose water to the ground and gain it again as the water traverses the river reaches. In some reaches the surface flows go dry in the fall and winter, thus affecting fish habitats and connectivity. The proposers are already doing similar research in the general vicinity (mainstem Methow and Twisp rivers), although that hydraulic work is not specifically tied to assessment of fish habitat. The proposal does not dwell on it, but the water flows in the Methow valley are intensely controversial, with irrigation withdrawals (both surface and groundwater) under high levels of scrutiny and current regulatory action. The main product would be maps of upwelling and downwelling, perennial flow, water temperatures in summer and winter (because these are dominated by the groundwater-surface water interchanges), and a preliminary assessment of potential sources of recharge for the shallow groundwater. These patterns of water exchange would be analyzed in the context of the seasonal life-history requirements of spring chinook salmon and other species.

The proposal lays out an excellent scientific study, focused on primary data collection. No groundwater model is proposed. The study is well justified in terms of the technical aspects of surface-ground water exchanges and the objectives for fish and habitat laid out in the Methow Subbasin Summary. The relevant RPAs in the BiOp are cited. The proposal notes the similar ongoing USGS study and the network of stream gaging stations operated by USGS (some funded by BPA). Other fish protection work in the basin is cited

collectively. Clear objectives are laid out, with defined tasks and discussion of methods. Facilities and equipment are available. Some appropriate scientific references are given, and good resumes are provided for key staff. The project is, of itself, of a monitoring nature and no follow-up is planned as part of this study. Understanding the complex hydraulics of this area will provide a good basis of understanding for taking actions to benefit fish. The proposal meets most of the ISRP evaluation criteria. **The work is of high priority for resolving immediate disputes in the area.** The project offers to provide information (thus approach to management for salmon) on the effects of irrigation on stream flow in the Methow Basin.

However, some questions remain that should be answered in a response. The proponents need to describe the procedures used for selection of study sites. Probabilistic sampling procedures would allow statistical inferences to be made to the study areas. Subjective ad-hoc procedures such as indicated in the following quotes from the proposal are not amendable to scientific review: "The hydraulic gradient will be measured at selected locations in the rivers using in-stream piezometers (pipes driven into the river bed) (Geist and others, 1998)", "During each seepage run, discharge measurements will be made approximately every 2 to 10 km….", "Water temperature will be measured continuously at selected points in the Methow, Twisp, and Chewuch Rivers, with an emphasis on gaining reaches or other areas with strong thermal gradients…" A formal design that samples the whole area would seem to give a better characterization of the water exchanges than focus on subjectively selected sites. Specific references to methods should be given. It is not sufficient to say that "Discharge measurements will be made according to USGS protocol, which includes quality assurance/quality control procedures,…" The criteria to be used for salmon habitat suitability need to be clarified. The presentation clarified some of these points but they need to be elaborated upon in a response. Specifically, stream gages they need are being operated but they will also use their own gages and other sources of data. Sampling for sites is not probabilistic but stratified. The flow gradient determines where temperature gages go. Diversions and recharge is not very substantial relative to the total flow in the Methow (this needs to be explained seasonally). Salmon need downwelling for spawning (then why are they spawning in an upwelling reach?). Is this apparent inconsistency a matter of scale?

ProjectID: 29031

Out Year Operations and Maintenance Costs Required to Implement/Carry out MVID Rehabilitation Project
Sponsor: YIN
Subbasin: Methow
FY03 Request:
5YR Estimate: $260,000
Short Description: Proposal requests O & M support for MVID Rehabilitation Project (MVID_RP). Assured long-term funding for O&M costs is essential for MVID_RP completion and realization of its water conservation, in-stream flow and habitat benefits.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. This project is a logical extension of the existing project (199603491), rather than a new project. It is unclear whether the ongoing project will be implemented. The proposal is for out year costs, not FY 2003. It is anticipated that the pumping station will be constructed by 2004 as a product of the NWPPC mandated facilitation process with the Methow Valley Irrigation District and WDOE, BPA, the Yakama Nation, NMFS, WDFW, and the Colville Tribe. Pumping would replace a push-up dam in the Twisp River and reduce use of Methow River water as a result of a new distribution system. The present proposal is tied to installation and construction of the pumping station and distribution system in that the MVID will only agree to the change in their withdrawal system if the operating and maintenance costs are covered. Approval of this proposal would provide the guarantee that the MVID seeks for covering the O&M costs.

Procedures for implementation monitoring need to be described in detail as part of the O&M project. Objectives 2 and 3 include long-term monitoring and evaluation methods that are not adequately described. The specific sample areas, methods, and sampling frequency and intensity (i.e., how many samples of what

type where and when) need to be specified to ensure that statistical inferences can be drawn to the study areas. For example, it is not sufficient to say that the "The Hankin and Reeves (1988) methodology will be used to measure and record data."

What are the potential fish benefits from this project?

ProjectID: 29038

Supplement Summer Steelhead Eightmile Creek/Chewuch River
Sponsor: MSRF
Subbasin: Methow
FY03 Request: $205,000
5YR Estimate: $225,000
Short Description: Develop a "natural" acclimation/rearing site on Eightmile Creek to supplement native fish stocks.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. This is a well-done proposal under the premise that supplementation is a good idea. Good background section. This proposal and project 29006 could provide some insight into the data supporting acclimation benefits versus direct release.

The proposal is to enlarge and otherwise improve the acclimation ponds on the Mason property on Eightmile Creek to provide for summer steelhead acclimation. The source of fish would be the Wells Dam Hatchery. However, as the current practice of direct release from the trucks appears effective, and the benefits of the project are speculative, the reviewers would like assurance in terms of discussion and appropriate literature citations, that the anticipated benefits are likely to be achieved and the associated expenditures are justified. The proposal lacked supporting data or references for this assertion.

The existing site offers opportunities not available if the land had to be purchased. It is justified under FWP by its naturalizing approach and also justified by Subbasin Summary objectives and strategies. This facility would provide a location for the recommended studies. The project advances NMFS's natural rearing approaches to hatchery reform (BiOp). Twisp River acclimation ponds are being developed in the same manner (on a schedule ahead of this one). The staff appear to be well-qualified.

The proposal anticipates sunsetting (termination) after natural production has risen to expected levels, but how realistic is this? Would wild fish actually use the site? Would the fisheries managers let go of it? The reviewers would like assurance that the project would "sunset" and would like to review the criteria for determining how and when to terminate the program.

ProjectID: 29006

Supplement Spring Chinook in Early Winters Creek
Sponsor: MSRF
Subbasin: Methow
FY03 Request: $231,000
5YR Estimate: $251,000
Short Description: Develop a "natural" acclimation/rearing site on Early Winters Creek to supplement native fish stocks.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed to justify the need of an acclimation pond compared to trucking and dumping the fish by reviewing the current literature. This proposal and 29038 should provide some insight into the data supporting acclimation benefits versus direct release. See also review comments for project 29038. This is a good proposal that is a close analog to 29039 (ponds on the Chewuch) except that the focus here is on

spring Chinook on Early Winters Creek. New ponds would be built on the same "natural" model. Reviewers have the same general concerns in this project about actually sunsetting as were described for 29038.

The proposal anticipates sunsetting (termination) after natural production has risen to expected levels, but how realistic is this? Would wild fish actually use the site? Would the fisheries managers let go of it? The reviewers would like assurance that the project would 'sunset' and would like to review the criteria for it.

Where will the fish for acclimation come from? Is acclimation necessary or desirable? Kenaston, Lindsay, and Schroeder found no difference in homing ability or survival of acclimated steelhead compared to steelhead directly trucked and released into the stream. The same may apply to spring chinook salmon.

The response needs to provide a critical analysis from the literature on the subject of supposed benefits of acclimation. See the following references for useful discussion points in the response.

Kenaston, K. R., R. B. Lindsay, and R. K. Schroeder 2001. Effect of acclimation on the homing and survival of hatchery winter steelhead North Amer. Journal of Fish. Mgmt. 21:765-773:

Savitz, J., L. G. Bardygula, and G. Funk 1993, Returns of non-cage-released chinook and coho salmon to Illinois harbors of Lake Michigan. North Amer. Journal of Fish. Mgmt. 13:550-557.

OKANOGAN RIVER SUBBASIN

ProjectID: 29017

Prepare a Master Plan for Protecting and Restoring Salmon Habitat in Okanagan River
Sponsor: CCT/ONFC
Subbasin: Okanogan
FY03 Request: $59,000
5YR Estimate: $59,000
Short Description: Prepare a Master Plan to guide the protection and restoration of sockeye salmon habitat in the Canadian portion of Okanagan River.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. The proposal is to develop a plan for restoring portions of the Okanogan River that have been channelized or otherwise disturbed by human actions. This may involve setbacks of dykes, and/or work within a section of river that has been channelized to restore a more natural gradient and substrate. An example is given. Between Osoyoos and Vaseau Lake a series of concrete vertical drop structures was placed after channelization. In 2001 rock barriers were placed between two of the concrete structures, thereby creating a natural pool riffle complex, resulting in creation of spawning habitat that was used by sockeye. The proposal is to identify the most essential or potentially productive stream reaches within the Okanogan as a long-range action plan.

This is somewhat of a skeletal proposal without much detail about methods. It is a one-year planning study only. Actual implementation would come later (what is the plan for this continuation?). There is insufficient detail about how the plan would be developed. Objectives, tasks and methods should all be expanded significantly. What product comes out of this one-year effort? It appears they have a good idea on some restoration projects, e.g. replacing the drop structure, how will these efforts be funded. Why weren't funds requested in this process? This planning effort should include specification of development of a monitoring and evaluation plan. Is one year enough to ensure stakeholder participation?

ProjectID: 29033

Design and Conduct Monitoring and Evaluation Associated With Reestablishment of Okanogan Basin Natural Production
Sponsor: CCT
Subbasin: Okanogan
FY03 Request: $770,152
5YR Estimate: $2,688,802
Short Description: The CCT are currently proposing and implementing a focused array of salmon and steelhead propagation initiatives in an effort to rebuild anadromous, naturally-produced salmon runs and increase harvest opportunities. An M&E program is necessary.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed that provides details of the monitoring plan. Effectiveness of a number of current and proposed management actions would be monitored under this project. A specific plan for each task needs to be described in addition to an overall plan. This is basically a proposal to develop a monitoring and evaluation plan. The response needs to take it to a detailed proposal that can be reviewed for scientific accuracy and precision.

This is very long rambling proposal, but in the end the "Proposal objectives, tasks, and methods" section is too brief to allow complete scientific review. For example, Objective 2. "Monitor spawning activities of ….." should include detailed plans for site selection including detailed data collection protocols. "Index sites" are not adequate for a long-term monitoring program. Selections of sites for monitoring all fish and habitat characteristics must include a probabilistic (statistical) sampling procedure in order to make statistical inferences to the larger areas. The ISRP strongly recommends that the proponents consider using the "Oregon Plan" as a model. This model plan is being developed for implementation in the John Day Basin. Other acceptable plans have been implemented in Northern California for juvenile coho and some of the national parks, e.g., North Cascades and Olympic. Also see the proposals, ISRP reviews, and proponent responses for fish, habitat, and water quality monitoring in the Salmon subbasin (199107300, 199405000, and 28051). Also, see the Council's draft recommendations on monitoring in the John Day of the Columbia Plateau Province (199801600). The proponents are referred to the programmatic section of this report on Monitoring, the specific comments on Aquatic Monitoring and Evaluation.

The specific sample areas, methods, and sampling frequency and intensity (i.e., how many samples of what type where and when) and data collection protocols need to be specified or referenced for each of the objectives. The relationship between aerial surveys of spawning areas and ground spawning surveys should be clarified. What are the objectives, tasks, sampling methods and data collection protocols?

The response should include a letter of support from the NMFS Science Center and the TRT staff for the final proposal.

The response should include a more complete discussion of the objectives, methods, location, and sponsor for Project #1991000501- Monitoring and evaluation statistical support. What is the relationship of the present proposal to Project #1991000501?

ProjectID: 29021

Develop a Physical Processes Method (PPM) to Supplement Habitat Conditions Analysis and Subbasin Planning
Sponsor: Golder Associates Inc.
Subbasin: Okanogan
FY03 Request: $295,229
5YR Estimate: $1,238,702
Short Description: Develop a Physical Processes Method (PPM) to Supplement Habitat Conditions Analysis and Subbasin Planning
Response Needed? No - Not Fundable
ISRP Preliminary Recommendation and Comments:
Do not fund. No response is needed. The ISRP was not convinced that a highly sophisticated mathematical approach in combination with EDT is appropriate at this time. The sub models are available (and were listed in the proposal) for many of the processes they want to link. Users may be better off to leave them unlinked and use them as needed, based on the combined expertise of several disciplines working together. A big Physical Processes Model may gain little not available from individual models for discrete processes.

Questions and concerns that arose in the course of review include: Where does EDT leaves off and PPM take over? What is the expected output of EDT in a specific real application and what is the expected output of PPM in the same illustration? Is EDT output input for PPM? A conceptual model of the system is needed. Without a conceptual model of the system, it is difficult to judge the qualifications of the proponents or the likelihood of success of the project.

The proposal should have contained a detailed monitoring and evaluation component. What real data will be collected and how will the project be evaluated (ground truthed)? How and when will one know that the project was a success or a failure? The proponents need to demonstrate support from management agencies in the Columbia Cascade Province and/or letters from the Council indicating need for augmentation of EDT in the subbasin planning effort.

ProjectID: 29001

Evaluation of 1872 Water Rights to Supplement Flows Between Basins
Sponsor: CCT
Subbasin: Okanogan
FY03 Request: $77,000
5YR Estimate: $315,000
Short Description: Develop a known data base to prioritize available CCT 1872 water rights which may be transferred, (if abandoned, or purchased if available), and placed into trust to supplement instream flows, both within or transferred between sub-basins.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is required for the timeline for planned work through the funding period, particularly whether there will be any implementation of water acquisitions and/or transfers and why monitoring is proposed if there is no implementation.

This is a proposal to develop a GIS database of the water rights in the western portion of the Colville Reservation. The overall objective is to obtain water to restore stream flows and lower water temperatures in order to aid bull trout (threatened), steelhead (endangered) and spring chinook salmon (extirpated but habitat available) and summer chinook salmon (depressed). The project would identify and evaluate water available to supplement flows. The tribe owns some water rights and proposes to obtain more from this process. From this, it is proposed to examine the possibility of establishing a water trust and a brokerage to manage water use. Once the existing rights and evaluations are catalogued, actions can be taken to obtain or transfer the rights for benefit of fish. Transfer to adjacent basins may be considered. In addition to the

cataloguing, the project would conduct field inventories to assess water withdrawals. Once the catalogue is completed and actions taken to acquire water for fish, the project plans to collect and analyze streamflow data to verify uses.

The proposal is concise and generally well written. The project generally meets the ISRP evaluation criteria. A benefit to fish can be expected if water is actually obtained and/or transferred. There is careful and thorough justification in terms of the FWP, BiOp, the FCRPS Implementation Plan, and the Subbasin Summary. The project is a specific response to a call for innovative ideas for "water brokering." Relevant existing projects in the basin are listed in a table. The planning and monitoring objectives and tasks are well presented. Specific information to be catalogued is listed along with some of the sources of information. The objectives and tasks do not include any implementation (actually obtaining water and making water transfers). There is a plan for monitoring following implementation, however. Key personnel are described in good resumes. Facilities for the work will be available from the CCT (which will cost share), except for minor office equipment and supplies.

Important questions remain, which need to be addressed in a response. The main question is whether any implementation in the form of actual water acquisition or transfers are to be done under this project. Although the main objective is to do the inventory and related planning, it is not clear how many of the follow-on implementation options, if any, will be pursued in the 3-year period of funding, and when they would be accomplished (the project timeline goes to 2007). The presentation suggested that water transfer from No Name Creek aquifer to Omak Creek might occur soon. A monitoring section is included in the proposal for after implementation.

If implementation is to occur as part of this work, the planned physical water transfers are not clear. How is the water to be physically transferred, if any? Is it all on paper to allow more instream flow above Enloe Dam and possibly in Salmon and Omak Creek? Does that assume there is unclaimed water in the recipient basin that could serve as the water right from the donor? This seems to be unlikely. Just taking Salmon Creek as a sample, in that basin water rights apparently amount to about twice the annual flow out of the watershed. Or is the proposal talking about an actual movement of water by canal or pipeline from one basin to another? The review team became confused over just how much implementation is included, if any.

Although monitoring is included in the proposal (somewhat strange, if there is to be no implementation), a more detailed M&E plan is needed to monitor and evaluate the biological benefits (in addition to flow and temperature) of the project, assuming the work goes beyond inventory and into actual flow changes. If the monitoring is being conducted as part of another project, then the proponents need to describe the methods in detail or provide references to published documents. The software for monitoring was not clearly described.

In summary, the ISRP review team needs a clearer presentation of the logical sequencing of this work and how much planning, implementation, and monitoring is actually proposed for this 3-year contract period.

By way of information, the ISRP team suggests that the proponents look at the proposal #25074, Deschutes Water Exchange - see especially preliminary ISRP review. Do some of the comments and 7 questions apply here? See www.cbfwa.org/files/province/plateau/projects/25074.htm#reviews.

ProjectID: 29032

Okanogan Basin Water Strategy Development and Pilot Projects
Sponsor: CCT
Subbasin: Okanogan
FY03 Request: $191,920
5YR Estimate: $1,260,600
Short Description: At the local level, identify, formulate, and implement reasonable and feasible water strategies to increase instream flow within three selected pilot project tributaries of the Okanogan basin
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed to clarify relationship to proposal #29001 and intended follow-up actions.

This is a planning project to help correct the main habitat problems of the Okanogan basin: low flows and high temperatures. The project would work at the local level to identify, formulate, and implement reasonable and feasible water strategies to increase instream flow within three selected pilot project tributaries of the Okanogan basin. Water rights and uses would be inventoried in a database (updating existing databases), selection criteria for pilot projects would be developed and three pilot projects on tributaries would be selected where low instream flows make salmonid habitat problematic and where water use is significant and there are willing stakeholder participants. A multi-stakeholder forum would be established for each pilot project to obtain consensus strategies. Water conservation, land acquisition, water right acquisition for instream use, establishment of a formal water market, and a compensatory wetland mitigation bank are some of the strategies to be explored locally. An action plan would be developed for each pilot tributary.

The proposal was well done, and the presentation answered the ISRP team's questions about the subcontractor (Golder) and the source of the required stream flows (limiting factors analysis, a Washington state process). The project seems to meet the ISRP review criteria. The rationale for the work is well laid out on the basis of the BiOp, Subbasin Summary, Council's FWP, the Salmon Recovery Board, and the CCT's Integrated Resource Management Plan. There is a comprehensive listing of related projects and proposals. The objectives are not especially well written, but the intent is clear. Tasks are good. There is a worthy goal and needed planning (and follow-through with actions). Monitoring is not relevant to this proposal (until actions are to be implemented), although pre-implementation, baseline monitoring might be considered where pilot actions are likely.

There are questions about the proposal that require a response. The first is the detailed relationship of this proposal to proposal number 29001, which seems to be proposing much the same work by the CCT. The difference may be the scale (the western CCT reservation in 29001 and selected pilot watersheds in this proposal). Clarification would help. A second point is the intended follow-up. The planning leaves implementation of the pilots' action plans up in the air. Some further development of the ideas to an intended (future?) implementation phase would be helpful for ISRP review.

By way of information, the ISRP team suggests that the proponents look at the proposal #25074, Deschutes Water Exchange - see especially preliminary ISRP review. Do some of the comments and 7 questions apply here? See www.cbfwa.org/files/province/plateau/projects/25074.htm#reviews.

ProjectID: 29015

Thermal Imaging of the Okanogan and Wenatchee Watersheds
Sponsor: CCT
Subbasin: Okanogan
FY03 Request: $196,654
5YR Estimate: $261,654
Short Description: Expedite the development of a water cleanup plan (TMDL) for the Okanogan to identify sources of pollution related to temperature, DO and pH; allocate maximum allowable pollution from various sources; and develop strategies to improve salmonid habitat.
Response Needed? No - Fundable
ISRP Preliminary Recommendation and Comments:
Fundable. No response is needed. The proposed work is a multifaceted project aimed at correcting the chronic high summer temperatures in waters of the Okanogan Subbasin. This project plans to use Forward Looking Infra-Red Technology (FLIR) to collect surface water temperature data remotely by helicopter from 175 miles of waterways in the Okanogan Subbasin, collect *in situ* temperature data simultaneously, incorporate this information into a river temperature model (QUAL2K), and use the data and model to develop Total Maximum Daily Loads (TMDLs) for temperature, which include remedial measures. Temperature is a major impairment of the waters of the Okanogan subbasin for ESA-listed salmonid use in summer. The Washington Department of Ecology is mandated to assess 303(d) listed waters and develop remedial measures under the Clean Water Act (CWA). The IR measurements, *in-situ* measurements, and modeling are intended to identify and quantify the sources of heating in the river basin that contribute to overly warm water in summer, and suggest remedial measures. The FLIR will give a broad spatial snapshot, submersible recorders will give ground-truth information and temporal variations, GIS will handle the spatial data, modeling will assimilate the data for predictive purposes, and the TMDL analyses by WDOE will satisfy the CWA mandate and offer solutions. Broad public participation at the solution stage is intended. The CCT and WDOE have combined forces to provide an integrated project focusing on the Okanogan basin. The WDOE will, somewhat incidentally to this project, use the information for its TMDL activities for dissolved oxygen, pH, and pesticides. It is a 2-year project for BPA funding, but embodies an implementation plan by WDOE extending through FY 2005 and likely longer.

This is a well-prepared proposal (initially presented as two proposals now combined, which would have included the Wenatchee subbasin) that is directed at the ultimate goal of reducing summer steam temperatures in the Okanogan subbasin through the CWA process. The ISRP notes that its previous reviews of proposals to use the FLIR technique were not clearly directed at the ultimate goal and had a predominant technology focus; this proposal is clearly focused on the end result. Part of the proposal is a straightforward and well-described plan to use a modern remote-sensing detection technique for obtaining temperature data over broad spatial and narrow temporal ranges (wide-area snapshot). The monitoring technique is valuable for identifying locations where thermal conditions change spatially, either by warming or cooling. The presumption is stated that one snapshot will be indicative of spatially varying conditions over much of the warm season even though actual temperatures will vary from day to day. Standard color aerial photos (taken simultaneously) are used in conjunction with the IR imagery to identify the habitat features related to temperature conditions. Rather than just providing pictures and numerical temperatures, however, the proposal would go the next step and incorporate the IR data, the *in-situ* calibration temperatures, and other temperature data into a model of water temperatures along the length of the study reaches. The model would then be used for TMDL assessments by WDOE. The proposal notes that this sort of work is already being done in Oregon and parts of the Mid-Columbia region (e.g., the Wenatchee subbasin) funded by other agencies.

The proposal meets the ISRP evaluation criteria. It makes good use of the Subbasin Summaries to justify the work, particularly the repeated statements that the waters are water quality (temperature) limited and listed under Clean Water Act 303(d). The work is specifically directed toward selection of remedial measures for such water quality exceedences, with a large benefit for fish. There are also good, specific references to the FWP, BiOp, the Upper Columbia Salmon Recovery Board, and to CCT tribal goals. Related projects are listed specifically and discussed. There are clear objectives, tasks, methods and

expected products for each phase of the work. The ISRP remains concerned that one IR overflight may not be sufficient to account for varying flows and other temporally varying factors, but acknowledges the high value of even one data set. The QUAL2K model might have been described in more detail, but it is a standard model used in water temperature analyses. Facilities and equipment are available from the contractors and used elsewhere. There is a good reference list accompanying the background and justification sections. Key personnel are clearly described in well-prepared resumes. The work is, of itself, of a monitoring nature with the measure of success being the follow-on monitoring that will be carried out by WDOE for the TMDL process (funded separately). There is excellent cost share, with $230,000 anticipated ($200,000 from WDOE) adding to the overall 2-year proposal cost to BPA of $261,654.

ProjectID: 29056

Establish a Water Cleanup Plan (temperature TMDL) for the Okanogan subbasin
Sponsor: Ecology
Subbasin: Okanogan
Response Needed? NA - Combined with 29015

ProjectID: 29054

Stream Gaging Installation and Operations
Sponsor: Ecology
Subbasin: Okanogan
FY03 Request: $395,000
5YR Estimate: $593,000
Short Description: Purchase and install eight continuous, real-time, telemetered stream flow gages, and six staff gages, at critical reaches and tributaries in each of the three subbasins.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. This is a valuable program for monitoring of stream flow to protect in-stream flows and compare actual flows to those flows and other target flows. Other important expected results are: support of EDT for subbasin planning, verify the availability and delivery of water purchased to assist conservation and recovery of ESA-listed salmonids stocks, determine flow-limiting reaches and tributaries to better target and prioritize habitat and flow restoration projects and monitor their effectiveness. These and other information from the program will provide significant benefit to fish and wildlife.

The one page “Proposal objective, tasks and methods” section is too brief to allow scientific review. Procedures for prioritizing locations for gaging stations should be given in detail and need should be supported by a watershed assessment or comparable planning document.

A monitoring and evaluation program with detailed sampling methods and data collection methods should be given for this project. The specific sample areas, methods, and sampling frequency and intensity (i.e., how many samples of what type where and when) need to be specified. How will one know that the program was a success or that the gaging stations work properly?

ProjectID: 29055

Columbia Cascade Water Rights Acquisition
Sponsor: Ecology
Subbasin: Okanogan
FY03 Request: $554,875
5YR Estimate: $1,624,625
Short Description: Acquire senior water rights for instream flows in targeted small streams and tributaries to restore critically needed water for spawning, rearing and migration of listed and depressed species within the Wenatchee, Methow, Okanogan and Entiat subbasins.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed to show if the acquisitions are backed by watershed assessments, prioritization criteria could be explained further, and methods for monitoring and evaluation by WDFW need to be explained. See the ISRP programmatic comments at the beginning of this report.

This is a proposal for the Washington Department of Ecology to participate in a 50-50 matching program with BPA to acquire senior water rights for instream flows in targeted small streams and tributaries to restore critically needed water for spawning, rearing and migration of listed and depressed species within the Wenatchee, Methow, Okanogan and Entiat subbasins. Federally listed and state depressed fish species are present and in need of restoration. All of these subbasins are over-appropriated, with water rights that precede the state's instream flow and Trust Water Right programs. Thus, rights would have to be purchased or leased to obtain instream flows for fish. Streams would be targeted for the program with a prioritization scheme already in place (itemized in the proposal) under the Trust program (which has been implemented in other basins and in these basins to a limited extent). Streams would be those with a history of flow problems and listed species, rated by importance for life-history use, condition of habitat, number of diversions, size of stream, amount of water needed to make a difference, and opportunities for water right acquisitions. The state Trust would purchase or lease rights and hold them in WDOE's name.

This is a well-prepared proposal. The work is justified on the basis of the Council's Fish and Wildlife Program, the BiOp's RPA 151, and the goals and objectives of each of the relevant Subbasin Summaries. The work is also justified on the basis of the Department's own recent history of water right acquisitions (examples are provided that persuasively demonstrate the WDOE's ability to carry out the program). There are established criteria for prioritizing acquisitions. Objectives, strategies and tasks are well laid out. There were several relevant references cited, and brief resumes were provided for staff. The essentially 50-50 cost sharing between WDOE and BPA is a positive impetus.

A few questions remain, however, that should be answered in a brief response. Although the general operating criteria for the program were listed for prioritizing acquisitions, there was no reference to specific watershed assessments other than the subbasin summaries and their general goals and strategies. Have more specific watershed assessments been done to guide the initial efforts toward identification and evaluation of site-specific water needs and potentially available water rights? Also, the ISRP team would like to know how use of the general criteria actually worked when applied to the subbasins already targeted. Although monitoring and evaluation of physical and biological responses to the acquired water rights are included in the objectives and tasks, they are referred to WDFW for implementation without any methods provided. How will WDFW incorporate monitoring specifically for these acquisitions in its overall subbasin monitoring efforts?

ProjectID: 199604200

Restore and Enhance Anadromous Fish Populations and Habitat in Salmon Creek
Sponsor: CCT
Subbasin: Okanogan
FY03 Request: $4,091,366
5YR Estimate: $11,170,836
Short Description: Provide instream flows through on-farm water conservation & water leasing. Design a river pump station and an upgrade to the Salmon Lake Feeder Canal. Enhance channel habitat. Design channel restoration. Undertake NEPA. Raise funds for all of the above.
Response Needed? No - Not Fundable
ISRP Preliminary Recommendation and Comments:
Do not fund. A response is not needed. According to the proposal, the Salmon Creek watershed is not large enough to provide the flows needed for irrigators and fish. The proposal is to build a pump station on the Okanogan River so that irrigators may exchange Salmon Creek water for Okanogan River water. Elsewhere, it is noted that at times water temperatures in the Okanogan River exceed 80 degrees F, which is unsuitable for salmon. This is not mentioned in this proposal.

No significant benefit to fish is to be expected from this proposed project, which focuses on highly degraded habitat (dewatered, etc.) that would take an extensive effort and considerable resources to restore. The proposal is to restore steelhead and spring chinook salmon in Salmon Creek, which has an estimated 15 miles of habitat between Conconully Reservoir and the mouth of the Creek that might produce an unspecified (in the proposal) number of adult salmon. Project sponsors have done rough predictive estimates that 150 steelhead, and 130 chinook might result from restoration of this stream reach. We noted the absence of water during the ISRP site visit in October 2001. The creek bed was dry below the fish ladder that is present at the irrigation diversion, located 4.3 miles above the mouth of Salmon Creek. The proposal states that 100% of the creek is diverted at that point. From the oral presentation we learned that the stream drops 550 feet in the lowermost 2.4 miles. Presently, an alluvial fan at the mouth does not allow passage of salmonids except at flood stage. An Entrix study found released flows alone would not restore the stream. A channel would have to be dug. Steelhead would be reintroduced from the Wells Hatchery brood. There are no remnant stocks of spring chinook, so they would need to be introduced from outside. There is no description of a monitoring and evaluation plan that ought to be undertaken.

A “Regional Technical Team” is reported to have identified the project as “very good” in terms of its technical merit (p. 11 of proposal). It is said to have the potential of being the primary spawning and rearing area for spring chinook in the Okanogan basin. We have to question this conclusion on the basis of what we have learned. If the statement is true, it implies that there is very little potential for spring chinook in the Okanogan Basin, and that therefore efforts would be better directed toward other stocks, such as summer/fall chinook, sockeye, or the recently reintroduced coho salmon that appear to be less habitat limited.

Although the ISRP review and recommendation is not predicated on costs, the Council and CBFWA should be aware of the costs compared to the potential benefits of this project. The proposal refers to a review of the Salmon Creek proposal by the Council’s Independent Economic Advisory Board in 2001. The IEAB is quoted, in part, on page 16 as complimenting the sponsors on the documentation provided with respect to costs, measurable goals in terms of effects on instream flows, and effects on water supplies for the irrigation district. However, the ISRP notes that there was no documentation of the anticipated numbers of salmon or steelhead that might result from this expenditure, a factor that is of primary concern to us. We also note that the IEAB did not reach any conclusions regarding the cost-effectiveness of the proposed project relative to other potential uses of the Fish and Wildlife Fund. The project is quite expensive ($7 million request for FY01 and another $7 million for FY02-05), plus about $5 million more in cost sharing from the Washington State Legislature and $5 million from the US Congress. Annual operation and maintenance costs thereafter are estimated at about $500,000. The US Congressional funds have not been secured at this point, and it was unclear in the proposal’s budget cost share information, whether the Washington State Legislature allocation had been secured. The Council and CBFWA should carefully

consider if the proposed amounts (estimated at $17 to $20 million for a project speculated to provide a few hundred salmon and steelhead) would be better spent on projects with more potential benefit to fish and/or wildlife.

ProjectID: 29042

Selective Fish Collection and Harvesting Gear
Sponsor: CCT
Subbasin: Okanogan
FY03 Request: $231,000
5YR Estimate: $646,000
Short Description: This project will develop, test and deploy several types of selective fishing gear to capture chinook, steelhead, and sockeye for the purposes of tribal harvest, brood stock collection, and research, monitoring, and evaluation.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. This proposal is to test fishing gear that can release captured fish alive and unharmed. Fish wheels, traps and seines are some of the gear mentioned. The focus of potential fisheries would be upon hatchery fish, and wild fish would be released. The proposal includes a provision to develop a detailed research plan. The intent of the proposal is good, but without a detailed research plan, we do not have an adequate basis for judging the scientific merits of the proposal.

There needs to be discussion of a proposed location for the test fishery that would satisfy the requirements of the recovery plans for listed species. There should be a discussion of data available on survival rates of salmonids taken in the proposed gear. Are sufficient data already available from studies elsewhere?

ProjectID: 200000100

Improvement of Anadromous Fish Habitat and Passage in Omak Creek
Sponsor: CCT
Subbasin: Okanogan
FY03 Request: $122,717
5YR Estimate: $542,717
Short Description: This project is the implementation of a plan to restore 40-miles of historical anadromous fish habitat (summer steelhead) by improving land management practices and conducting restoration activities that accelerate recovery of the Omak Creek watershed.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed to clarify the historical numbers of fish that used the creek, expected fish benefits after project implementation, and to provide details on the monitoring and evaluation plan.

This is a continuation proposal for straightforward and conventional tributary habitat improvements, including culvert replacement, stream channel modification, cattle fencing, and road decommissioning in Omak Creek, a tributary stream of the Okanogan River in Okanogan County, Washington. The main benefit would be to summer steelhead (listed as endangered). The project was initiated by a 1995 Omak Creek Watershed Plan/Environmental Assessment prepared by the Natural Resource Conservation Service. The watershed analysis identified several limiting factors, which this project is seeking to correct. Work began under non-BPA funding through NRCS (PL 83-556); BPA funded work began in 2000. The principal focus of past work has been on removing two barriers, one a long culvert that required relocation of the creek channel and installation of a modern culvert, and the other an impassable debris pile (called Mission Falls) that remained after railroad construction in the 1920s. A poor job of stream realignment at the old culvert needs to be corrected. Based on recent watershed analyses, there is a new focus on road decommissioning, as the roads contribute large amounts of sediment to the stream.

This is a good, straightforward proposal that meets the ISRP review criteria. There would be benefit to Fish and Wildlife from passage improvements and habitat rehabilitation, although the numbers of fish that used the stream historically and the numbers anticipated to return after rehabilitation are not clear. Conventional restoration techniques are used. Results to date were given. There is good background and justification, with clear justification by citation of the FWP and BiOp; the watershed analysis is the most relevant justification. Objectives, tasks, and methods are provided and are appropriate. Monitoring is built into the work. There has been good progress to date (although past stream relocation work needs correction, based on monitoring). There is good cost share (about 1/3), and the relationships to other projects are adequately described. Facilities and equipment seem appropriate, and there were good staff resumes. There was a good reference list.

Some questions remain that need to be answered in a response. The main one concerns the potential fish benefit. How many returning fish could this restoration project expect to attain? How many used it historically? During the oral presentation, project sponsor suggested that after stream restoration occurred, as many as 200 adult summer steelhead might return to Omak Creek; however, the proposal does not indicate the number of adult steelhead returns that are expected. Is the estimate of 200 adult steelhead returning correct? How does this potential stack up against other restoration efforts/proposals, such as Salmon Creek, Okanagan River, etc.? This perspective should be available now that the work has been underway. Questions by the reviewers during the presentation suggested that there is only anecdotal evidence, which suggests fewer fish than Salmon Creek, and that Omak Creek is not likely a spring Chinook creek. Steelhead may have more potential in Omak than Salmon Creek. These points need to be elaborated upon in order to get a sense of the relative benefits to fish for costs incurred. Second, there is a large increase in budget compared to projections in 2002, primarily to accommodate additional attention to road decommissioning. We do not question the need for the roadwork, but suggest that the matter be given attention for fiscal reasons. Some listed accomplishments are incomplete (e.g., number of miles of fencing installed). The degree to which past work needs to be redone, and the lessons learned from this bad experience with a contractor are not fully explained (although the presentation helped) and seem relevant to estimating future success.

ProjectID: 29022

Omak Creek Water Temperature Model
Sponsor: CCT
Subbasin: Okanogan
FY03 Request: $245,000
5YR Estimate: $385,000
Short Description: Characterize water temperature regime in Omak Creek, quantify range of variability, and develop of numerical model to assess the effect of water and land use in the watershed on water temperature and to predict effectiveness of salmon recovery actions.
Response Needed? No - Not Fundable
ISRP Preliminary Recommendation and Comments:
Not Fundable. No response is needed. Not adequately justified scientifically or by regional planning; poorly-prepared proposal.

This is a proposal to develop a water temperature model for Omak Creek, a tributary of the Okanogan River. High water temperatures are a chronic problem for the Okanogan watershed in summer. This proposal seeks to determine the sources of heating (and cooling) in the landscape of the Omak and the lower Okanogan River basin so that remedial measures might be taken. The primary focus of the proposal is the development of a water temperature model, which could be run with various modifications of input parameters to test alternative temperature management strategies. Secondarily, the CCT would review management strategies for implementation in light of the model results. The project would be managed by the CCT but a contractor would develop the model.

Although the motivation and concept are good, the proposal is poor. The background section was clearly written for another project, as the words do not relate to this work but to the acquisition of water rights. The

project rationale is short and not well thought out. There are no references to statements of need in the FWP, BiOp, Subbasin Summary, or other plans. Preliminary work by the CCT seems to be the main driver (this is good, but it needs a regional context). There is a good table of related projects, but no attempt to define what the relationship might be to this work. Objectives and tasks are laid out well, however. No literature is cited with respect to the science of water temperature modeling, other than one reference to the FWP. Resumes for the CCT personnel are included.

A large drawback to the proposal is its lack of information on temperature modeling. The proposal gives no indication that there are existing stream temperature models that might be used for this work (e.g., Bartholow's SSTEMP), although the presentation clarified that a model developed at Oregon State University would be used. The proposal suggested that a wholly new model will be developed (from conceptualization to computerization). There is also no indication in the proposal of who would do the modeling, except that this part of the work would be contracted. At the presentation it was indicated that Brown and Caldwell would do this work, but no qualifications were provided. Development of computer models for water temperature is a field of expertise not found everywhere, and the proposed modelers warrant scrutiny by the ISRP. No scientific references to water temperature models are given. On a positive note, the proposal goes through a logical set of steps (tasks) for the objective of developing a model and for using it for subsequent objectives to develop alternative management strategies for temperature in the Omak and potentially for the rest of the lower Okanogan mainstem and its tributaries. This good overall project structure fails, however, on the critical lack of information about the modeling. Without the key information about models and modeling, the proposal is not fundable.

The project does not seem needed or justified for Omak Creek. The PI's slides at the presentation showed that water temperatures reached the mid-20s C only once in the last decade. Habitat improvements associated with project 200000100 should have positive effects on sediment and temperature inputs, such that Omak Creek temperatures could be merely be monitored to determine if there are chronic or acute temperature problems. Steelhead may be able to accommodate short-term temperature exceedences by remaining in cooler water refuges and migrating into Omak Creek after temperature declines. This life history strategy is observed in steelhead returning to the John Day and Snake River subbasins.

The proposal seems to go beyond what could be concluded from temperature modeling alone. Objective 2 reads "Develop and Prioritize Watershed Recovery Alternatives" and Task 2.c. reads "Simulate and Rank Watershed Recovery Alternatives." It is hard for the ISRP to visualize how this kind of broad information might emerge from a simulation based on data that do not (and can not) include a range of values that would encompass "recovery." Are the sponsors claiming that historical data do include such a range?

The proposal mentions that there is considerable loss of surface flow to the underlying alluvial aquifer. Does this mean the stream dewaters? Is the loss going to hyporheic flow that would affect water temperatures in an upwelling zone downstream (as seen in other locations)?

The proposed exercise is very conceptual at this point in time, and the proposal needs to demonstrate a utility that cannot be addressed without this work. It is unclear why it is appropriate to extrapolate from a small creek like Omak Creek to a larger system like the Okanogan River? How would the larger application be tested for veracity? In summary, there are many concerns with this proposal that do not seem resolvable with a response by the proponents.

ProjectID: 29023

Restoration/Protection of Kartar Creek In-stream, riparian, and Wetland Habitats
Sponsor: CCT
Subbasin: Okanogan
FY03 Request: $437,823
5YR Estimate: $1,591,035
Short Description: Enhance natural reproduction, establishment of a sustainable fishery, provide a riparian corridor located between seasonal wildlife to partially mitigate for loss of anadromous fish and wildlife created by the building of Grand Coulee and Chief Joseph Dam
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. Kartar Creek has a dewatered section in the agricultural area above the lake. The goal of this project is to get water back in the creek. Perhaps the creek would need to be lined or detoured in the reach where it surrounds the agricultural lands. The proposal is primarily to assess options, followed by planning and implementation. They also plan wetlands creation and riparian fencing and planting.

The project focuses on Lahontan cutthroat trout (LCT), a non-native species, which is currently planted in Omak Lake and supports a trophy class recreational fishery that has strong local and regional support. The lake is highly alkaline and unlikely to support salmonids, other than alkaline-adapted stocks like Lahontan Cutthroat trout. The project seems logical with a laudable goal of attempting to convert a hatchery-supported recreational fishery to a self-supporting self-sustaining fishery.

More detail needs to be provided in the budget section that links specific costs to specific objectives and tasks. As presented, large dollar amounts are associated with generalized multiple objectives making it difficult to assess task-specific effort and cost.

There should be discussion of the potential numbers of Lahontan trout that might be produced in Kartar Creek. Some reasonable estimate ought to be possible, given experience in similar streams. Such a number could be compared with the number of fish currently being planted to evaluate the feasibility of the project's objective. The number could be too high or too low.

Historically, this should have been redband trout habitat, although the highly alkaline nature of the natural Omak Lake may have prevented their occurrence in the lake and portions of the watershed. Nevertheless, the Kartar Creek watershed above the lake should be surveyed for the existence of native salmonids such as redband trout. The existence of remnant redband trout populations in the upper Kartar Creek watershed could complicate the plans for introducing Lahontan cutthroat trout into the creek, Redband trout are a species of special concern and their protection would be threatened by potential hybridization with Lahontan cutthroat trout, if they occur together.

ProjectID: 29045

Protect and Restore Salmon and Steelhead Habitat at the Similkameen/Okanogan River Confluence
Sponsor: Upper Columbia RFEG
Subbasin: Okanogan
FY03 Request: $239,700
5YR Estimate: $1,338,531
Short Description: Design and implement measures to protect and restore flood plain processes for 12 miles of spawning, rearing, and migratory habitat of the Okanogan/Similkameen rivers through an adaptive management process.
Response Needed? No - Fundable
ISRP Preliminary Recommendation and Comments:
Fundable. No response is needed. This is an especially well prepared and thorough proposal. The proposal is to design and implement measures to protect and restore flood plain processes for 12 miles of spawning, rearing, and migratory habitat supporting chinook, steelhead and sockeye salmon upstream of the confluence of the Similkameen and Okanogan rivers. The spawning area within the 12 miles is about 4.5 miles that support one of the largest concentrations of summer chinook in the watershed. Measures to be considered are dike modification, riprap removal, installation of in-stream structures, and riparian plantings. There has been high erosion caused by channel instability near hardened banks. Off-channel habitats have been lost. There is cost sharing from themselves and FWS (for permitting). Salmon Recovery Fund money is also sought for 2003 (if obtained, then BPA would be asked to fund outyears. Excellent public participation. This is for work in a high priority area.

ProjectID: 29008

Adult Passage Counting and Trapping at Zosel Dam
Sponsor: CCT
Subbasin: Okanogan
FY03 Request: $108,474
5YR Estimate: $623,474
Short Description: Conduct feasibility assessment of adult fish counting at Zosel Dam on the Okanogan River and evaluate preferred option. Design, install and evaluate adult trapping facilities at Zosel Dam.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. The proposal is for a feasibility study to develop an ability to count adult anadromous fish as they pass Zosel Dam on their way to Lake Osoyoos and its tributaries. Lake Osoyoos is one of two lakes in the Columbia Basin that continue to support healthy populations of sockeye salmon. Previous efforts to count fish with video cameras as they transited the ladders were not entirely satisfactory. This proposal is to test newly developed technology for its use in this application. Recommended adjustments in the ladders arising from the previous experience will also be incorporated.

There is a particular need for more information on sockeye salmon survival rates and other life history characteristics. Their limited distribution and special life histories have combined to limit the opportunity for studies. The Okanogan run of sockeye exhibits some unusual behavior patterns in response to a temperature block that sometimes occurs at the mouth of the river. Unexplained losses of fish occur between Wells Dam, which is the last upstream counting station, and counts on the spawning grounds.

This project is fundable on a technical basis and is an important project that merits high priority. However, a response is needed on the following two items: 1) cost estimates need to be better justified, and 2) alternatives to blocking the spillbays should be explored.

ProjectID: 200001300

Evaluate An Experimental Re-introduction of Sockeye Salmon into Skaha Lake
Sponsor: CCT
Subbasin: Okanogan
FY03 Request: $18,096
5YR Estimate: $18,096
Short Description: Evaluation of an experimental re-introduction of sockeye salmon into Skaha Lake in the Okanagan River Basin. Assess risks benefits, formulate hypotheses, develop an experimental design and analytical tools.
Response Needed? No - Fundable
ISRP Preliminary Recommendation and Comments:
Fundable. No response is needed. This proposal describes the last step in a study designed to alleviate concerns about sockeye that might be reintroduced into the upper Okanogan, acting as carriers of disease. The first two years of the study looked at IHNV type 1, EIBS; and IPNV, and ceratomyxosis agent. The proposed work will complete the study looking at whirling disease.

ProjectID: 29016

Return of Okanagan Sockeye Salmon to their historic range.
Sponsor: CCT/ONFC
Subbasin: Okanogan
FY03 Request: $175,000
5YR Estimate: $1,509,000
Short Description: Plan, engineer and construct fish passage past dams. Screen the irrigation intake associated with the first dam. Monitor increase in fish production.
Response Needed? No - Fundable
ISRP Preliminary Recommendation and Comments:
Fund. No response is needed. This is a clear, straightforward measure that will certainly pay off in increased and measurable numbers of anadromous fishes, and deserves high priority. The proposal is to provide fish passage at McIntyre Dam, either by providing fish ladders or by removal of the dam. This would open up 11 km of potential spawning and rearing habitat in Vaseau Lake and Okanogan River. Approval of Canadian fisheries agencies is required, but appears to be imminent, with mechanisms in place for communication and agreements. The projects is directly related to #2000001300 *The Evaluation of an Experimental Re-introduction of sockeye salmon into Skaha Lake*, which will apparently satisfy some Canadian concerns about possible disease transmission by migrating fish. It is estimated that the project would lead to an increase of 18,000 sockeye in the Okanogan Basin population.

ProjectID: 29007

Okanogan Kelt Reconditioning
Sponsor: CCT
Subbasin: Okanogan
FY03 Request: $151,387
5YR Estimate: $662,663
Short Description: Recondition steelhead kelts in the Okanogan River system to allow repeat spawning in the wild and promote rebuilding of this Endangered ESU.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. The reconditioning of kelts as a management tool has intuitive appeal, whose merits need to be assessed through an experimental program and a rigorous M&E subprogram. Getting more use out of a live adult steelhead seems like a reasonable objective, and one that has been tested successfully in the Yakima River and the Siletz River, Oregon. The evidence seems clear that there is little return spawning after downstream migration of kelts from the Okanogan system. Good "seed money" feasibility work under NMFS funding. The response should pay particular attention to the ISRP's FY00 comments

(below) that describe subsequent funding as contingent on the inclusion of a more thorough assessment of ecological and genetic risks associated with implementing the reconditioning strategy. This should also include an objective to develop guidelines that address when this technique should or should not be implemented given ecological, genetic, and economic costs and benefits.

A major question about this specific proposed project, as compared to the Yakima project, is the sequence of proposed events – specifically, whether it would be advisable to keep maturing adult steelhead in the hatchery, spawn them, then recondition the kelts in the hatchery, finally releasing them into Omak Creek to spawn naturally. This sequence is opposite that used in the Yakima River, where downstream migrating kelts are collected, sequestered, reconditioned, and re-released to spawn naturally.

Upon questioning during the presentation, Paul Wagner asserted that this sequence was chosen because collecting kelts during the higher flows typically experienced in the spring is problematic; however, Chris Fisher, the local fishery manager, assured the reviewers that it was quite feasible to capture outmigrating kelts from Omak Creek during the spring. If this were so, then it would certainly be the favored approach, allowing the steelhead to spawn naturally in Omak Creek before collecting them for reconditioning. In turn, this sequence would obviate the need for spawning of the steelhead in the hatchery and would use the hatchery facilities solely for reconditioning purposes prior to releasing the reconditions fish back into Omak Creek for additional spawning. This sequence would also obviate the need for any development of a hatchery steelhead broodstock. Cost of this operating alternative would be lower than the proposed sequence of events. The project should focus on Omak Creek restoration more so than Salmon Creek.

For original and related kelt proposal and ISRP review see:
http://www.cbfwa.org/files/awp00/projects/20141.htm#reviews

ISRP FY00 Comments
Fund for one year as an innovative project. Subsequent funding contingent on the inclusion of a more thorough assessment of ecological and genetic risks associated with implementing the reconditioning strategy. They need to include an objective to develop guidelines that address when this technique should or should not be implemented given ecological, genetic and economic costs and benefits. Comments: This a well-written and interesting proposal. Although the idea of reconditioning steelhead kelts has been discussed for many years, this is the first attempt to examine this more rigorously. The authors do a good job of identifying the fishery problem and providing the technical detail for why this proposal addresses the problem. The objectives are clearly defined and measurable, and the researchers propose using the best available scientific techniques. Although the proposal could be improved, this research could lead to a potentially valuable conservation tool. The fact that steelhead reconditioning is already being used in the basin may support scientific testing of these procedures. However, this does not decide the fundamental issue of whether this strategy overall is a good one. One important concern about the project design is the uncertainty of the prototype PIT tag detector at Bonneville and Prosser dams. The authors acknowledge that, without this detection capability, they will not be able to evaluate survival of several of the release groups. It is not clear from the proposal just how long it might take to perfect the technology at the dams even if the tag detectors are installed in 1999 or 2000. Considering the small number of fish that may be marked and released, it is difficult to evaluate whether the released fish are likely to be found again. This is clearly a critical factor for evaluating the proposed experiment. While the proposal suggests that reconditioning is a way to restore life-history diversity, it is primarily aimed at fish production. Maintenance of the repeat spawning life-history type presumably would depend indefinitely upon hatchery intervention. The proposal does not correct factors that now prevent expression of the repeat spawning behavior. Therefore, the life-history benefits are not self sustaining. Like the whole idea of supplementation, success of this effort would seem to come when it is no longer necessary. This may be one of the most critical issues for this proposal, since application of the method ultimately does not promote restoration of normative ecological processes. Important questions to be answered then are: (1) Do the benefits of the work outweigh any risks? (2) Are there any alternative approaches for restoring the capacity of the ecosystem to maintain repeat spawners? (3) Have populations reached such a low level that this program is necessary just to prevent extinction of the repeat spawning type until the limiting factors can be resolved? These issues are not fully discussed in the proposal. There is a lack of any discussion about potential risks of inbreeding, which could be considerable if reconditioning were successful in very

small populations. The authors do state that they will consider the "genetic considerations of long-term reconditioning" under Scenario 3, but fail to provide any details about why this is important or how they would do this. In the analysis of expected costs and benefits that the authors propose, the investigators need to consider the genetic costs and benefits also. This is not a trivial task. The authors also fail to acknowledge that collecting enough kelts to get meaningful sample sizes is a major challenge to this study. Scenarios 1,2, and 4 are especially vulnerable because they also require a high secondary recapture rate of reconditioned kelts. Also lacking is any explanation of the analytical methods by which the investigators propose to use morphological features to develop a quick and accurate method for identifying kelts.

Current status:
MEMORANDUM

TO: Roy Beaty
FROM: Mark Fritsch
SUBJECT: Step Review for Project (#2000-017-00) - Recondition Wild Steelhead Kelts

The Council's approval on October 10, 2000 for the Recondition Wild Steelhead Kelts Project 2000-017-00 was conditioned on an independent scientific review, as it relates to the three-step review process, and that future funding will be dependent on the results of this review.

Due to the experimental approach of this study as it relates to the artificial production there is no need at this time to initiate a full Three-Step Review Process. Though this project does trigger a review by definition (i.e. planting fish in waters that they have not been planted in before) it does so in a very experimental and research orientated manner. If this project were to be expanded or changes in scope or size in the future it will be necessary to implement a full step review (e.g. master plan, etc). It is our understanding that the information collected during this phase will be used to address program areas pertaining to future activities and review process.

It is my understanding that an extensive study plan has been developed for this project and is adequate, with supporting documents, to address the technical questions asked as part of a partial type step review. The Council is anticipating the submittal of review documents by the end of the calendar year. This should provide adequate time for the completion of the review prior to the next funding and review process.

This review will include responses to technical questions relating to: (1) master planning requirements according to Section 7.4B of the Council's Fish and Wildlife Program (Attachment I), (2) questions identified in the Fiscal Year 1998 Annual Implementation Work Plan (Attachment II), (3) questions involving the Fish and Wildlife Program language identified by the Independent Scientific Review Panel (Attachment III), and questions relating to the development schedule and estimated cost expenditures and future needs of your proposed project (Attachment IV). In addition find attached the APR policies and standards (Attachment V) that need to be addressed. Part of the Council's review process will include an independent scientific review of the answers to the technical questions and responses to the APR policies.

I hope that this letter clarifies the status of your project with regard to the Council's recent decision. If you have any questions, please do not hesitate to contact me.

ProjectID: 29050

Phase I Okanogan River Spring Chinook Production
Sponsor: CCT
Subbasin: Okanogan
FY03 Request: $112,000
5YR Estimate: $1,960,000
Short Description: This project will reintroduce spring chinook into the Okanogan sub-basin to provide for tribal C&S and recreational fisheries. The program will also be used to collect information on the feasibility of reintroducing ESA-listed chinook in Phase II.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. The proposal does not contain sufficient detail to allow scientific review of tasks and methods. There is a need for justification of the focus on spring chinook, when spring chinook apparently were never abundant in the area. There is an acclimation issue here, i.e. spring chinook may not be suited to the temperature regime and other factors present in the Okanogan River. There should be a comprehensive description of the program of which this project is a part, including proposals 29042 and 29008.

With the above exceptions, the proposal is well prepared, and the ISRP review criteria seem to be met. This is more than a limited one-year project that it initially appeared to be. It is the planning phase for a longer hatchery program to reintroduce spring Chinook to the Okanogan. The proposal is to use hatchery planted chinook (Carson stock from the complex of Leavenworth hatcheries) as a basis for a tribal fishery on returning adults. The juveniles would be transferred annually to the Ellesford acclimation facility (a pond owned by the Oroville-Tonasket Irrigation District), where they would be held over for winter rearing, acclimation, and release. All returning fish would either be harvested or retained as brood stock.

ProjectID: 29040

OK-11 Develop and Propagate Local Okanogan River Summer/Fall Chinook
Sponsor: CCT
Subbasin: Okanogan
FY03 Request: $602,000
5YR Estimate: $1,496,000
Short Description: Project will acclimate existing summer chinook production near historic habitat, increase production for the Okanogan and upper middle Columbia rivers, initiate production of late-arriving fall chinook, and initiate a local chinook brood stock.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. The proposal is for several actions aimed at increasing the abundance of summer/fall chinook in the Okanogan River and the mainstem Columbia River directly below Chief Joseph Dam. Several acclimation ponds are proposed to hold chinook for release in the Similkameen downstream from the existing facility, with the objective of utilizing what is claimed to be underseeded habitat. While the proposal makes a rather convincing argument that hatchery releases should be dispersed more widely, and describes potential sources of fish, there is no discussion of the possibility that fish could be reared elsewhere and released at a number of points downstream of the Similkameen facility.

Justification needs to be given that developing a local broodstock is necessary. What can be gained with this approach? Why not continue using the current broodstock? Justification should be provided on the need for this level of intervention? Justification also needs to be given for the acclimation facility. Direct plants from trucks may be just as effective or more so. Explain the relationship of this to the PUD HCP, if any.

ProjectID: 29013

Acquire Land Adjacent to Chiliwist Creek and Develop Summer Chinook and Summer Steelhead Acclimation Pond
Sponsor: WDFW
Subbasin: Okanogan
FY03 Request: $823,952
5YR Estimate: $1,179,517
Short Description: Acquire 89 acres of apple orchard adjacent to Chiliwist Creek and develop an acclimation pond to imprint summer chinook and summer steelhead in order to improve return spawn distribution in the Okanogan Subbasin.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. Assuming supplementation is a good strategy, it seems reasonable to spread out the acclimation and planting, as the proposal suggests. However, the sponsors should investigate costs and benefits of truck releases as an alternative strategy to spread out the return points of adults. The response should contain a review of the literature for advantages and disadvantages of the two basic approaches: acclimation ponds versus point releases without acclimation.

The switch to Okanogan River water is good for flows in the Chiliwist, but Okanogan water may be too warm in summer. The thermal difficulties were mentioned, but the solution was not clear and should be further discussed.

The proposal did not say how the pond would be designed. Another proposal from the Twisp River has gone to great lengths to make their ponds "natural" and much like a natural side channel, to be used by river fish, as well. Could this be done to create "off-channel" habitat (including riparian) in this project.

Nothing was said about use of the rest of the land. Are there benefits to wildlife habitat that could be used to help meet BPA mitigate for loss of wildlife habitat? The response needs to include a HEP analysis for value to wildlife, and identification of mitigation credit to BPA and a detailed M&E proposal.

Even if the M&E is to be conducted by another project, details that apply to monitoring and evaluation of the proposed project should be given in this proposal. The specific sample areas, methods, and sampling frequency and intensity (i.e., how many samples of what type where and when) need to be specified. How will one know if this project is a success or a failure?

An M&E proposal for monitoring of wildlife habitat is also needed. The proponents are referred to the ISRP Review of the Confederated Salish and Kootenai Tribes' Habitat Acquisition and Restoration Plan (19910600) (www.nwcouncil.org/library/isrp/isrp2001-4addendum.htm). The project was reviewed in the Mountain Columbia Province to determine whether it provided scientifically sound criteria and protocol to prioritize habitat acquisitions. The ISRP found that document described a good plan for habitat acquisition and restoration of wildlife habitat in mitigation for lost aquatic and riparian habitat due to the Kerr Project No. 5 located on the Flathead River and could serve as a useful model to other habitat and restoration proposals with some minor revision of the monitoring and evaluation (M&E) component of the plan. The M&E component has subsequently been reviewed and approved subject to minor modifications in ISRP report (www.nwcouncil.org/library/isrp/isrp2001-4AlbeniFalls.pdf). The proponents are also referred to the programmatic section of this report on Monitoring, the specific comments on Aquatic Monitoring and Evaluation, and the specific comments on Terrestrial Monitoring and Evaluation.

ProjectID: 29051

Develop Local Okanogan River Steelhead Brood Stock
Sponsor: CCT
Subbasin: Okanogan
FY03 Request: $192,000
5YR Estimate: $1,630,000
Short Description: Project will collect steelhead brood stock from local sources and transfer propagation activities from Wells Hatchery to Cassimer Bar Hatchery.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. The proposal is to replace dependence upon the Wells Dam Hatchery for broodstock used as a source for outplanting of steelhead into the Okanogan Basin. The WDFW has been working since 1996 to take fish for broodstock from local streams, with the thought that this might lead to an increase in genetic diversity of steelhead. The tribes propose moving the location of the steelhead production facilities from Wells Dam Hatchery to the tribe's Cassimer Bar Hatchery. The proposal includes a measure to develop a conceptual design and cost estimates for modification of the Cassimer Bar Hatchery that will be required. This will lead to development of final design, and then to construction.

The proposal response needs to justify why a hatchery is warranted versus investing in Omak Creek rehabilitation, as steelhead are present and using Omak Creek, albeit in low numbers. Similarly, the response should justify the creation of a local broodstock, when the population is likely homogenized through past hatchery and fishery management practices. The subbasin summary and all discussions during the presentations indicated that even historically, steelhead abundance in the Okanagon system was likely quite low, as compared to other parts of the Columbia Basin. Estimates for adult steelhead carrying capacity in Omak Creek and Salmon Creek, the two best steelhead restoration sites in the subbasin (?), after the proposed restoration activities in each system are completed, are approximately equal, that is around 200 adult steelhead returning to each creek system annually.

Ongoing projects in the upper Columbia Cascade province focusing on summer/fall chinook, sockeye, and coho appear to be having positive results and further investment in these projects appears warranted based on recent returns. Large-scale investment in steelhead projects in the Okanagon basin, such as the proposed hatchery in this proposal and the Salmon Creek project, appear less warranted based on the greater uncertainty of positive outcomes. Unlike summer/fall chinook, sockeye, and coho, steelhead in the upper Okanagon basin appear to be very habitat limited and it is unlikely that restoration activities will restore them to levels capable of supporting any real degree of harvest. The response should discuss and respond to these observations.

ProjectID: 199609400

Increase sharp-tailed grouse and mule deer populations and enhance shrubsteppe/riparian habitats on the Scotch Creek Wildlife Area.
Sponsor: WDFW
Subbasin: Okanogan
FY03 Request: $461,401
5YR Estimate: $2,083,081
Short Description: Protect, increase, and maintain a viable sharp-tailed grouse population, increase mule deer use of the project site, and enhance shrub-steppe habitat for shrub-steppe obligate species.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. Detailed site selection protocols (or adequate references to published material) are needed on each task. Data collection protocols are probably adequate in the proposal, but the question is whether the sites were selected by a probabilistic (statistical) sampling procedure and allow statistical inferences to the entire study area. Are data adequate to establish overall trends in the entire area, including

good and bad habitat? What are the data collection protocols for monitoring sharp-tailed grouse leks annually? What are the procedures for conducting nesting and brood surveys? How are individuals or pairs selected for monitoring? The monitoring plan should provide data on distribution and abundance of target species and wildlife habitat.

With respect to the estimates of numbers of sharp-tailed grouse, is there no indication that as abundance increases (or decreases) the number of "leks" might change? If only a known set of leks are monitored, what is the effect on the estimate?

The proponents are referred to the ISRP Review of the Confederated Salish and Kootenai Tribes' Habitat Acquisition and Restoration Plan (19910600) (www.nwcouncil.org/library/isrp/isrp2001-4addendum.htm). The project was reviewed in the Mountain Columbia Province to determine whether it provided scientifically sound criteria and protocol to prioritize habitat acquisitions. The ISRP found that document described a good plan for habitat acquisition and restoration of wildlife habitat in mitigation for lost aquatic and riparian habitat due to the Kerr Project No. 5 located on the Flathead River and could serve as a useful model to other habitat and restoration proposals with some minor revision of the monitoring and evaluation (M&E) component of the plan. The M&E component has subsequently been reviewed and approved subject to minor modifications in ISRP report (www.nwcouncil.org/library/isrp/isrp2001-4AlbeniFalls.pdf). The proponents are also referred to the programmatic section of this report on Monitoring, the specific comments on Aquatic Monitoring and Evaluation, and the specific comments on Terrestrial Monitoring and Evaluation.

ProjectID: 29005

Validate Occurrence and Assess Abundance of Wildlife Species
Sponsor: CTCR
Subbasin: Okanogan
FY03 Request: $194,136
5YR Estimate: $534,908
Short Description: Verify, monitor, and inventory wildlife species presence and abundance in this project area as indicated by the species list cited in "Wildlife-Habitat Relationships in WA/OR" (Johnson, D and Thomas A. O'Neil, 2000).
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. The Proposal objectives, tasks, and methods section is too brief to allow adequate scientific review. The budget was too brief to determine if adequate time and materials are proposed to meet the objectives.

Probabilistic (statistical) sampling procedures are needed for selection of sites that will be used for determining presence-absence of species and study sites for estimation of abundance. The specific sample areas, methods (data collection protocols), and sampling frequency and intensity (i.e., how many samples of what type where and when) need to be specified. Details must be given or adequate references to published literature given for not only site selection procedures, but for data collection procedures. Inventory procedures for the National Parks might serve as a good model for presence-absence surveys on Tribal Land.

The proponents are referred to the ISRP Review of the Confederated Salish and Kootenai Tribes' Habitat Acquisition and Restoration Plan (19910600) (www.nwcouncil.org/library/isrp/isrp2001-4addendum.htm). The project was reviewed in the Mountain Columbia Province to determine whether it provided scientifically sound criteria and protocol to prioritize habitat acquisitions. The ISRP found that document described a good plan for habitat acquisition and restoration of wildlife habitat in mitigation for lost aquatic and riparian habitat due to the Kerr Project No. 5 located on the Flathead River and could serve as a useful model to other habitat and restoration proposals with some minor revision of the monitoring and evaluation (M&E) component of the plan. The M&E component has subsequently been reviewed and approved subject to minor modifications in ISRP report (www.nwcouncil.org/library/isrp/isrp2001-4AlbeniFalls.pdf).

The proponents are also referred to the programmatic section of this report on Monitoring, the specific comments on Aquatic Monitoring and Evaluation, and the specific comments on Terrestrial Monitoring and Evaluation.

ProjectID: 29019

Characterize and Assess Wildlife-Habitat Types and Structural Conditions for Okanogan sub-basin
Sponsor: NHI, CCT
Subbasin: Okanogan
FY03 Request: $27,907
5YR Estimate: $27,907
Short Description: Fine-scale wildlife habitat assessment for the Okanogan sub-basin will produce critical baseline data for planning and monitoring efforts that is consistent within the NWPPC Framework wildlife-habitat relationships process.
Response Needed? No - Fundable
ISRP Preliminary Recommendation and Comments:
No response is needed. Fundable as a pilot study for the use of NHI in this region. The proposal and presentation make a good case that this resolution mapping would be useful to regional wildlife managers who would actually make use of the map. The budget is either very reasonable or incomplete.

The proponents have previously demonstrated the ability to produce high-quality maps at the Columbia Basin level. If successful, the proposed maps will 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.

Questions or clarifications that need to be addressed during contracting are as follows:
The relationship of this proposal to similar ones in the Mountain Snake, Blue Mountain, Columbia Cascade, and other provinces should be given. The ISRP has reviewed versions of these proposals in each province.

A detailed monitoring and evaluation (M&E) plans should be included in the 'Proposal objectives, tasks and methods' section. How will one know that this project was a success? M&E methods for the accuracy and precision of classification of 4 ha units should be given in more detail. How is the accuracy of 75% guaranteed for a mapped class and how is an overall map accuracy of 80% guaranteed? Details for ground truthing the maps with field visits should be given.

How good is the correlation between environment conditions and animal use? Describe methods for presence absence on the ground surveys and comparison with mapped habitats. The specific sample areas, methods, and sampling frequency and intensity (i.e., how many samples of what type where and when) need to be specified. The response should include plans for repeating the mapping effort to account for succession and other habitat changes.

ProjectID: 29029

Perform Range Forage Inventory for Large Ungulates
Sponsor: CTCR
Subbasin: Okanogan
FY03 Request: $159,704
5YR Estimate: $462,252
Short Description: Grazing resource inventory is necessary to enable identification and location of grazing lands, forage availability and quality, for the management of large ungulates including elk, mule and white tail deer, moose and big horn sheep.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. The "Proposal objectives, tasks, and methods" section is too brief to allow adequate scientific review.

Probabilistic (statistical) sampling procedures are needed for selection of sites that will be used for determining a forage inventory. The specific sample areas, methods, and sampling frequency and intensity (i.e., how many samples of what type where and when) need to be specified. Details must be given or adequate references to published literature given for not only site selection procedures, but for data collection procedures. What vegetation data are collected in the field and what is the accuracy and precision? The ISRP needs to be convinced that scientifically valid sampling plans are used and that useful data are obtained beyond estimation of total AUMs for large blocks of land.

The scale at which the forage inventory is conducted is not clear. What is the size of unit for which the forage inventory is given? Will a map be prepared with, for example, contour lines of forage available? Habitat types present? Annual production by species? What does a forage inventory amount to and how good are the data in terms of precision and accuracy?

The proposal should include a component for long-term monitoring and evaluation. The proponents are referred to the ISRP Review of the Confederated Salish and Kootenai Tribes' Habitat Acquisition and Restoration Plan (19910600) for recommendations (www.nwcouncil.org/library/isrp/isrp2001-4addendum.htm). The project was reviewed in the Mountain Columbia Province to determine whether it provided scientifically sound criteria and protocol to prioritize habitat acquisitions. The ISRP found that document described a good plan for habitat acquisition and restoration of wildlife habitat in mitigation for lost aquatic and riparian habitat due to the Kerr Project No. 5 located on the Flathead River and could serve as a useful model to other habitat and restoration proposals with some minor revision of the monitoring and evaluation (M&E) component of the plan. The M&E component has subsequently been reviewed and approved subject to minor modifications in ISRP report (www.nwcouncil.org/library/isrp/isrp2001-4AlbeniFalls.pdf). The proponents are also referred to the programmatic section of this report on Monitoring, the specific comments on Aquatic Monitoring and Evaluation, and the specific comments on Terrestrial Monitoring and Evaluation.

ProjectID: 29004

Control Okanogan Weeds -Invasive Species Project
Sponsor: CTCR
Subbasin: Okanogan
FY03 Request: $299,933
5YR Estimate: $1,484,025
Short Description: Integrated program to control invasive noxious weeds for the benefit of wildlife and their associated ecosystems through the use of biologic insect agents, education, outreach, and habitat management.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. The ISRP suggests that the objectives of fencing, education, and communication, and research be separated in the proposal with clear indications of associated tasks, benefits, and costs.

Additional benefits of controlling livestock access via fencing, if any, should be included? Describe the full extent of fencing with maps. Are only the weed patches fenced? Is there an expected increase in forage for wildlife other than control of spread of weeds? Is aquatic habitat protected by the fencing? What are the benefits to fish, if any?

Is a HEP analysis planned to account for improvements in wildlife habitat to provide credit toward BPA's responsibility to mitigate for loss of wildlife habitat?

The experimental design, layout of plots on a map, and proposed statistical analysis should be given for the proposed research on effects of release of lesser knapweed flower weevil for control of knapweed. Is this research part of or related to a long-term monitoring and evaluation program?

This project needs to include or reference a long-term monitoring and evaluation program for distribution and abundance of noxious weeds and wildlife habitat in general. If the M&E is being conducted in another project then a complete discussion of how that project provides appropriate M&E for this proposal needs to be included. Baseline data from ongoing M&E, if any, should be given.

The proponents are referred to the ISRP Review of the Confederated Salish and Kootenai Tribes' Habitat Acquisition and Restoration Plan (19910600) (www.nwcouncil.org/library/isrp/isrp2001-4addendum.htm). The project was reviewed in the Mountain Columbia Province to determine whether it provided scientifically sound criteria and protocol to prioritize habitat acquisitions. The ISRP found that document described a good plan for habitat acquisition and restoration of wildlife habitat in mitigation for lost aquatic and riparian habitat due to the Kerr Project No. 5 located on the Flathead River and could serve as a useful model to other habitat and restoration proposals with some minor revision of the monitoring and evaluation (M&E) component of the plan. The M&E component has subsequently been reviewed and approved subject to minor modifications in ISRP report (www.nwcouncil.org/library/isrp/isrp2001-4AlbeniFalls.pdf). The proponents are also referred to the programmatic section of this report on Monitoring, the specific comments on Aquatic Monitoring and Evaluation, and the specific comments on Terrestrial Monitoring and Evaluation.

ProjectID: 29003

Acquire Property for Partial Wildlife mitigation
Sponsor: CTCR
Subbasin: Okanogan
FY03 Request: $1,500,000
5YR Estimate: $7,500,000
Short Description: Acquire, protect, enhance and evaluate wildlife habitat and species for partial mitigation for losses to wildlife resulting from Grand Coulee and Chief Joseph Dams.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. The tasks and methods included in the "Proposal objectives, tasks, and methods" are too brief to allow adequate review. A detailed plan for prioritizing and acquiring land should be given.

The monitoring and evaluation section mentions the species and habitats that are being monitored, but again is too brief to allow adequate review. It is not adequate to simply state that monitoring will be done. The specific sample areas, methods, and sampling frequency and intensity (i.e., how many samples of what type where and when) need to be specified or references must be given to published literature.

They also need to describe their project prioritization. The proponents are referred to the ISRP Review of the Confederated Salish and Kootenai Tribes' Habitat Acquisition and Restoration Plan (19910600) (www.nwcouncil.org/library/isrp/isrp2001-4addendum.htm). The project was reviewed in the Mountain Columbia Province to determine whether it provided scientifically sound criteria and protocol to prioritize habitat acquisitions. The ISRP found that document described a good plan for habitat acquisition and restoration of wildlife habitat in mitigation for lost aquatic and riparian habitat due to the Kerr Project No. 5 located on the Flathead River and could serve as a useful model to other habitat and restoration proposals with some minor revision of the monitoring and evaluation (M&E) component of the plan. The M&E component has subsequently been reviewed and approved subject to minor modifications in ISRP report (www.nwcouncil.org/library/isrp/isrp2001-4AlbeniFalls.pdf). The proponents are also referred to the programmatic section of this report on Monitoring, the specific comments on Aquatic Monitoring and Evaluation, and the specific comments on Terrestrial Monitoring and Evaluation.

ProjectID: 29035

Okanogan River Riparian and Upland Fish and Wildlife Habitat Acquisition
Sponsor: SP
Subbasin: Okanogan
FY03 Request: $2,957,000
5YR Estimate: $6,070,000
Short Description: Protect and restore existing high quality riparian, floodplain, and adjacent upland from development, and preserve important spawning, rearing and holding habitat in the Okanogan River through property acquisition and development of long term research.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. This property appears to contain excellent habitat for both fish and wildlife, although the property was not visited as part of the site visit. The proposal would retire certain spring water rights that come with the property. That action should provide habitat enhancement within the Okanogan River. The proposed acquisition accounts for approximately 1/3 of a WDFW index site for which significant summer/fall chinook spawning has been documented.

Acquisition of property in the Columbia Cascade Province needs to be coordinated and prioritized in watershed assessments and subbasin summaries. Has this property been identified as high priority by a watershed assessment or by a watershed council? If so, the response should clarify. Also, the ISRP needs to be assured that the property is included in an acceptable long-term monitoring program for both aquatic and terrestrial resources.

A conservation easement is needed that will protect the property for the benefit of fish and wildlife for the indefinite future. Based on the reviewer's experiences, ownership by a university without legal assurance of conservation is not adequate. The sponsor might consider working through or with the Nature Conservancy to specify the details of a conservation easement. Evidence also needs to be provided that the university is committed to the biological station. The sponsor might consider contacting the Organization of Biological Field Stations (www.obfs.org) for further information on operating costs and potential for use of the property for educational purposes.

The response needs to include a HEP analysis for value to wildlife, and identification of mitigation credit to BPA. See proposal #199609400 for an example of an ongoing project.

The proponents are referred to the ISRP Review of the Confederated Salish and Kootenai Tribes' Habitat Acquisition and Restoration Plan (19910600) (www.nwcouncil.org/library/isrp/isrp2001-4addendum.htm). The project was reviewed in the Mountain Columbia Province to determine whether it provided scientifically sound criteria and protocol to prioritize habitat acquisitions. The ISRP found that document described a good plan for habitat acquisition and restoration of wildlife habitat in mitigation for lost aquatic and riparian habitat due to the Kerr Project No. 5 located on the Flathead River and could serve as a useful model to other habitat and restoration proposals with some minor revision of the monitoring and evaluation (M&E) component of the plan. The M&E component has subsequently been reviewed and approved subject to minor modifications in ISRP report (www.nwcouncil.org/library/isrp/isrp2001-4AlbeniFalls.pdf). The proponents are also referred to the programmatic section of this report on Monitoring, the specific comments on Aquatic Monitoring and Evaluation, and the specific comments on Terrestrial Monitoring and Evaluation.

ProjectID: 29011

Sharp-tailed Grouse and Mule Deer Habitat Restoration and Enhancement on Sinlahekin Wildlife Area
Sponsor: WDFW
Subbasin: Okanogan
Short Description: Public ownership of lands to protect Mule deer and Sharp-tailed grouse habitat is inadequate by itself. Such lands need to be evaluated and managed in a manner mimicking pre-settlement to maximize habitat conditions, e.g., increased fire frequency.
Response Needed? Withdrawn

PART III. Lower Columbia and Estuary Provinces

Proposal comments are presented in the following groups below: lamprey, bull trout, Abernathy Fish Lab, Chinook and Grays River (chum), Chum, Estuary and Plume, Habitat Restoration, Cowlitz, and other Lower Columbia. Within each group, proposals are arranged in the order they were presented at the ISRP site visit workshop.

LAMPREY PROPOSALS

ProjectID: 200001400

Evaluate habitat use and population dynamics of lampreys in Cedar Creek
Sponsor: USFWS
Province: Lower Columbia
Subbasin: Lewis
FY03 Request: $197,742
5YR Estimate: $1,092,650
Short Description: With emphasis on Pacific lampreys, identify and quantitatively evaluate populations of lampreys and their habitats in a stream below Bonneville Dam.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. Continuation of this work is likely merited. Several ISRP questions from previous review remain unanswered and should be addressed. These include testing the assumptions underlying the adult mark-recapture and assessing habitat preference as well as habitat use. Details of the sampling protocol for ammocetes need to be given. How many reaches are going to be sampled? How will the sampling locations within the reaches be selected? How will the larval sampling actually be done?

ProjectID: 31003

Distribution and life history characteristics of lampreys in tributaries of the lower Columbia River Basin
Sponsor: USFWS
Province: Lower Columbia
Subbasin: Columbia Lower
FY03 Request: $173,281
5YR Estimate: $1,626,205
Short Description: With emphasis on Pacific lampreys, identify tributaries containing lamprey, and quantitatively evaluate populations and their habitats in two streams below Bonneville Dam
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. During the first year the sponsors propose to survey five streams and select two streams for study whose habitats vary from each other and from another stream, Cedar Creek, where lamprey studies are ongoing. The assertion is that the proposed work together with the Cedar Creek study will provide information on lamprey populations across a range of habitat conditions and stream sizes that could then be compared to lamprey populations upstream of mainstem hydropower facilities. The sponsors need to justify why the lower Columbia populations could serve as references for populations hundreds of miles upstream in a completely different ecoregion, and why it is necessary to intensively study streams of different sizes? The ISRP wonders if a larger scale, less intensive survey of lamprey population distribution and abundance and habitat conditions across a broader range of Lower Columbia River tributaries could be more beneficial at this time. The knowledge gained from the ongoing Cedar Creek study and lamprey work done on the Oregon Coast could aid in designing such a study. We ask the sponsors to address why they feel that intensive studies on two additional streams would provide greater benefit than a larger scale survey to assess population and habitat status across Lower Columbia streams. Do the five streams that will be surveyed during the first year represent the geographic extent of lamprey distribution in the Lower Columbia? Are they representative of lamprey streams in the region? If so, why?

A summary of results from the Cedar Creek study would provide useful context. The methods for selecting sampling sites and sample reaches during the survey phase need to be more thoroughly discussed. Most of the habitat work appears to be at the microhabitat scale. Is there going to be any watershed scale, valley segment scale, or reach scale habitat assessment? How will abundance estimates be related to habitat characteristics? The discussion of "statolith and genetic analyses" needs to be expanded. Why are the sponsors doing these analyses and how will they be done? The sponsors appear to be requesting nearly $800K to "investigate the feasibility" of estimating migration timing and abundance of outmigrating juveniles and returning adults. Although this work would be useful, the cost needs to be justified. Are there no known or accepted methods for making these estimates? Tasks 3.2 and 3.3 need to be much more thoroughly discussed. The sponsors propose to study relationships between Pacific lamprey and sympatric species of lamprey but no design or methods for doing this are given.

BULL TROUT PROPOSALS

ProjectID: 31027

Movements and Survival of Juvenile and Adult Bull Trout
Sponsor: USFWS
Province: Lower Columbia
Subbasin: Lewis
FY03 Request: $207,585
5YR Estimate: $814,144
Short Description: Juvenile and adult bull trout in and near Rush Creek will be tagged with 23 mm PIT tags. Using a stationary PIT tag antenna, juvenile survival, migration timing and population numbers will be estimated for in basin modeling efforts.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. This research is well designed and could provide useful information on bull trout migration and life history diversity in the Lower Columbia. The research will attempt to quantify winter survival, migratory success of adults, and relative abundance of resident and migratory life histories using novel sampling techniques. A more thorough discussion of the mark-recapture procedure for estimating downsteam migrant abundance is needed. How will the estimates be calculated? Will smolt trap efficiencies be determined? How often will the in-stream backpack surveys be conducted? Will the entire length of the study reach be surveyed? The in-stream surveys would seem to provide an excellent opportunity to document reach scale and channel unit scale habitat use. Conceivably, the applicants could detect seasonal changes in habitat use and determine if resident and migratory life history forms utilize different habitats. The authors should consider adding an objective pertaining to fish habitat use with a commensurate budget increase.

ProjectID: 199405300

Middle Fork Willamette River Bull Trout Re-introduction and Basinwide Monitoring
Sponsor: ODFW
Province: Lower Columbia
Subbasin: Willamette
FY03 Request: $159,400
5YR Estimate: $908,400
Short Description: Evaluate protocols for the re-introduction of bull trout into historic habitats in the upper Willamette River subbasin, and employ methods to monitor and evaluate the status and trends of bull trout populations in the Lower Columbia Province.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. This work could provide useful information concerning strategies for reintroduction of bull trout and status and trends of bull trout in the Upper Willamette basin. However, the details of the

research design, sampling protocols, and data analysis for the reintroduction study have not been adequately discussed. The sponsors need to justify why only 1-2 sites per experimental group are being considered for reintroduction. It would seem that if the results were to be generalizable over a wide area, as the sponsors suggest they would, and for greater statistical power more reintroduction sites for each experimental group would be needed. How will the authors determine how many fry and yearlings will be reintroduced at each site? Will there be an assessment of habitat carrying capacity of each reintroduction site? Will the researchers attempt to equalize numerical density or biomass between individual fry and yearling plants to help to control for density dependent effects? What will be done to assess the possible interactive effects of non-native fishes on bull trout? How often will the reintroduction sites be sampled annually and when? An important factor in determining relative success of reintroductions is habitat quality and quantity. Presumably habitat characteristics will not be identical between reintroduction sites. Is there going to be comprehensive assessment of habitat composition and utilization by reintroduced fish during the monitoring phase. If so, how will it be done and how will the information be used to evaluate reintroduction success.

ProjectID: 30003

Evaluation of Two Captive Rearing Methods for Assisting with Recovery of Naturally Spawning Populations of Steelhead and Coho Salmon
Sponsor: USFWS
Province: Columbia Estuary
Subbasin: Elochoman
FY03 Request: $446,101
5YR Estimate: $1,939,251
Short Description: Test and evaluate two hatchery reform methodologies; Assess natural reproductive success of returning hatchery-origin adults; Establish Abernathy, Germany, and Mill creeks as a Tier 3 "monitoring and evaluation" site for anadromous salmonids.
Response Needed? No - Fundable
ISRP Preliminary Recommendation and Comments:
Fundable. Proponents propose to rigorously examine the effects of hatchery rearing on fitness - a continuing, plaguing uncertainty in the basin's artificial production programs. The proposed research would directly estimate fitness of supplemented fish and would test efficacy of two supplementation strategies.

ABERNATHY FISH LAB PROPOSALS

ProjectID: 30008

Instream evaluation of populations, migration timing, individual adult return rates, and wild-hatchery interactions of 3 naturally produced salmonids
Sponsor: USFWS
Province: Columbia Estuary
Subbasin: Elochoman
FY03 Request: $238,740
5YR Estimate: $1,296,140
Short Description: Evaluate distribution and abundance of juvenile and adult coho salmon, steelhead trout, and cutthroat trout in Abernathy Creek using new PIT tag techniques.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. This is a complex proposal with several loosely related components. The sponsors propose to 1) assess the abundance and life history diversity of steelhead, coho, and cutthroat trout in Abernathy Creek using several different population assessment techniques including stationary remote PIT tag detection; 2) evaluate differences between wild juvenile steelhead and hatchery fish in migration timing, "microhabitat use," downstream movement in test tanks, and physiological characteristics; and 3) evaluate the effects of PIT tag size on survival, growth, physiology and downstream movement. The proposal is essentially an aggregate of these different components and the connection between them is not

clear. Each component could itself constitute the basis of a stand-alone proposal. The proposal needs to be more integrated. The sponsors need to succinctly state the major contribution of the work as a whole, how the component objectives are interrelated and supportive of each other, and why they should be grouped together and not be submitted as separate proposals. There are a number of methodological details that need to be expanded and clarified. For objective 1, where are the detection stations located? How will winter survival be quantified? How will parr-smolt recruitment be determined? How will the number of residualized fish be determined? Objective 2 is broad and vague. This objective needs to be sharpened so that it is clear just what the sponsor is trying to accomplish. What is "microhabitat" and how will microhabitat preferences be determined? How will "interactions" between hatchery and naturally produced fish be determined?

ProjectID: 30012

Compare Bacterial Fish Pathogen Populations in Hatchery Water and in Adjacent Creek Water and Evaluate Possibile Disease Transfer Between Them.
Sponsor: USFWS
Province: Columbia Estuary
Subbasin: Elochoman
FY03 Request: $71,678
5YR Estimate: $106,165
Short Description: Determine the presence of bacterial fish pathogens within a hatchery water system and in the waters of an adjacent creek used as part of the hatchery water supply. Determine the potential for pathogen transfer between the two water systems.
Response Needed? No - Not Fundable
ISRP Preliminary Recommendation and Comments:
Not fundable. The proposal is inadequate for technical review. It is unclear how samples of Abernathy creek will be taken with respect to seasonal fluctuations in abundance of fish and seasonal fluctuations of the physical environment. The statistical methods are not adequately explained. The qualifications of the investigator are not described. A thorough proposal for similar work has been made in the Columbia Cascade subbasin.

ProjectID: 30013

Role of Bacteria as Indicator Organisms for Watershed Assessment and in Determining Fish Pathogen Relationships with Fauna of Abernathy Creek
Sponsor: USFWS
Province: Columbia Estuary
Subbasin: Elochoman
FY03 Request: $71,100
5YR Estimate: $189,690
Short Description: The purpose of this project is to develop techniques to assess watershed health and fish health using bacteria as system indicator organisms.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. The test proposed will not likely provide the intended relationship between watershed health and microbial community structure. Further detail needs to be provided on this subject. It is unclear whether the PI is qualified to do this work (BS in Chemistry, limited research experience); it's unlikely that a GS5 Technician, however capable, would be able to fulfill the responsibilities of a PI.

CHINOOK AND GRAYS RIVER (CHUM) PROPOSALS

ProjectID: 30006

Effectiveness monitoring of the Chinook River estuary restoration project.
Sponsor: Sea Resources
Province: Columbia Estuary
Subbasin: Columbia Estuary
FY03 Request: $124,804
5YR Estimate: $444,804
Short Description: This is a project to monitor and evaluate changes in habitat attributes and juvenile salmonid use before and after the Chinook River estuary restoration project.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. The sponsors propose to monitor changes in water quality, and salmon abundance and life history diversity following restoration efforts in the Chinook River estuary. The proposed work is one of the first major efforts to evaluate the response of salmonid fishes to estuary restoration in the lower Columbia and as such it is an important proposal. A major value of this work is that the tidegate will be removed, possibly providing greater access for salmonids to the estuary than if the tidegate were left in place. Is there a firm commitment and funding in place for tidegate removal? What is the status of negotiations/discussions for breaching the causeway?

The work is needed but the proposal lacks adequate description of the research design and methods for accomplishing the work. Why was Baker Bay chosen as a reference site? What are the locations of the fish sampling sites? How will fish be sampled? Will tidal channels be trap netted? Will all major habitat types within the estuary be sampled? Will the same sampling methods be used in Baker Bay as in the Chinook estuary? More detail is needed concerning the scale analysis. How will the origin of fish be determined from scales? How will freshwater and estuarine growth be distinguished? How will growth rate be determined from scales? Many water quality sampling stations are shown on the map in Figure 2. How will water quality be sampled at these locations? How often? How will structural changes in the estuary as a result of restoration efforts (e.g., redevelopment of tidal channels, vegetation changes) be quantified and related to fish distribution and abundance? The sponsors plan to develop a computer database. Will an existing database structure and monitoring protocol be used so data is applicable across the basin?

ProjectID: 30005

Grays River Watershed and Biological Assessment
Sponsor: LCFRB; PSMFC; PNNL
Province: Columbia Estuary
Subbasin: Grays
FY03 Request: $474,734
5YR Estimate: $1,165,430
Short Description: Conduct a watershed and biological assessment of the Grays River watershed to protect and restore chum spawning habitat
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. This proposal is to assess the Grays River watershed and to protect and restore chum salmon habitat. Stable spawning habitat is considered to be a critical limiting factor to the production of chum on the Grays River, but information on how to provide habitat is lacking. This proposal will conduct hydrological, geomorphological, and spawning stock assessments to evaluate the overall condition of the watershed and to develop a prioritized list of actions to restore habitat. Grays River contains one genetic group of threatened chum salmon. Various land use activities on unstable ground have damaged spawning habitat. Restoration projects must address the question of sediment transport and deposition under current riparian conditions.

The proposal fits well into regional programs and is well connected to other projects. The prioritized list of actions will be available to be integrated into other projects. The objectives tasks and methods describe a systematic approach to the identification of limits to and characteristics of spawning habitat.

An area the proposal could discuss in more detail is what happens after the geomorphology and hydrology of the watershed is evaluated. Are there reasonable actions that can be taken to stabilize the riparian zone or is instability a basic feature of this riparian area? Instability is a common feature of chum spawning areas.

The assessment should focus on the upstream processes that would indicate whether the channel movement is much more dynamic than in the past; e.g. is habitat alteration from logging causing downstream instability? Are there fixable damages?

The response should better detail the sequence of the watershed assessment and the subsequent rehabilitation effort. The effort should focus first on the assessment. For the response, proponents should refer to the programmatic section of this report on watershed assessments and prioritization of habitat restoration projects. The protection of chum in the region needs to be better described; apparently, the Chinook river artificial production project is intended to protect Gray's river stock.

Additionally, the response should address the prospects for sedimentation in the lower river at the confluence of the Grays with the Columbia. Is that a limiting factor?

ProjectID: 31001

Artificial production facilities improvements to support Lower Columbia chum salmon reintroduction into the Chinook River
Sponsor: Sea Resources
Province: Lower Columbia
Subbasin: Columbia Estuary
FY03 Request: $41,865
5YR Estimate: $41,865
Short Description: Improve Sea Resources hatchery facilities to enable staff to perform tasks in support of the reintroduction of Lower Columbia chum salmon into the Chinook River.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. This is potentially fundable. The Chinook will probably provide good habitat when the tidegate comes out; what is the firm schedule for removing the tidegate and/or the causeway? How is it justified to begin reintroduction before the tidegate has been removed? It may be particularly valuable to improve the hatchery for an integrated hatchery-and-wild-spawning program for chum because the Chinook will provide another refuge for the Grays chums in the face of degraded habitat there. When, under what status of natural production, would Chinook hatchery production be terminated? Can this occur within the 9-year life of the project? Details of methods are not given. What is the plan for apportioning returns to Chinook Hatchery between natural and hatchery spawning? In general, what is the tactical plan for restoring chum in the estuary? How does the plan fit into any recovery plan for chum salmon in the Columbia River? Experience and qualifications of investigators isn't given; expertise in salmon conservation genetics and in chum salmon behavioral ecology will be important to the success of re-establishment of chum in the Chinook basin; we encourage Sea Resources to seek expert collaborators.

CHUM PROPOSALS

ProjectID: 200105300

Re-introduction of Lower Columbia River Chum Salmon into Duncan Creek
Sponsor: PSMFC, WDFW
Province: Lower Columbia
Subbasin: Columbia Lower
FY03 Request: $381,671
5YR Estimate: $1,632,940
Short Description: Monitor and evaluate the success of the recently restored spawning channels for chum salmon at Duncan Creek. If necessary, jumpstart the population by collecting brood stock from adjacent populations.
Response Needed? No - Fundable
ISRP Preliminary Recommendation and Comments:
Fundable. The project promises to benefit chum salmon, coho salmon, and sea-run cutthroat in the lower Columbia River through an innovative approach to natural restoration of salmonids. Reviewers caution that chum salmon should not be stocked until WDFW develops a plan for establishment of a wild chum salmon population in the context of a watershed assessment, and until a clearly defined protocol for monitoring spawning activity is in place.

ProjectID: 200001200

Evaluate Factors Limiting the Columbia River Gorge Chum Salmon Populations
Sponsor: USFWS
Province: Lower Columbia
Subbasin: Columbia Lower
FY03 Request: $255,212
5YR Estimate: $1,410,207
Short Description: Evaluate factors limiting chum salmon production in Hardy Creek, Hamilton Springs, and Columbia River side-channel.
Response Needed? No - Fundable
ISRP Preliminary Recommendation and Comments:
Fundable. The proposal is sound and well organized with logical objectives, and should generate information useful for protecting these remnant chum salmon in the Lower Columbia. The viability of these populations may be affected by movements among them, lending importance to the proposed study of movements. A summary of censuses of adults is given but no summary of fry production.

ProjectID: 31006

Protect Wood's Landing Chum Spawning Site
Sponsor: City of Vancouver
Province: Lower Columbia
Subbasin: Columbia Lower
FY03 Request: $1,352,360
5YR Estimate: $1,352,360
Short Description: Through acquisition of property and easements on 12 acres and 1000 feet of shoreline the project will protect a significant chum spawning site on the mainstem of the Columbia and will also restore the lower 350 feet of the adjacent creek.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. What are the effects of fluctuations of flow caused the operation of Bonneville dam on the spawning habitat in question? Will the area stay watered? What is known about historical use of this area by chum? How many redds per year are counted there? Are fish holding there or spawning?

What is the responsibility of the Fish and Wildlife Program to address problems that may be solvable with municipal zoning tools? The proposal would spend $860k for 12 acres, over $63k per acre. Is it correct that the agreement would allow buildings to remain or be built on 7.2 of the 11.8 acres? Why would payment of taxes be included in this project – wouldn't owners pay the taxes with the purchase money?

ProjectID: 31032

Develop a Well Water Supply System for the Hardy Creek Chum Salmon Spawning Channel
Sponsor: USFWS
Province: Lower Columbia
Subbasin: Columbia Lower
FY03 Request: $152,500
5YR Estimate: $172,500
Short Description: Develop a well water supply system for the Hardy Creek chum salmon spawning channel. This system will mimic spring and seepage flow to ensure that water will be provided to the spawning channel during subfreezing weather when Hardy Creek is frozen.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. This proposal from the USFWS requests $152.5k to develop a well water supply system for the Hardy Creek chum salmon spawning channel to ensure water when the creek is frozen. Chum is listed species, and Hardy Creek is a known chum salmon spawning area. Chum spawning in Hardy Creek is hindered by sediment deposition from Columbia River backwater in flood events every 2-5 years, so a spawning channel was constructed in 2000 (USACE funds) to contribute to recovery of Columbia River chum through the increase in habitat. The channel gets water diverted from the Creek when sufficient water is available. Drought conditions in 2000 prevented water form reaching the channel.

The concern this proposal addresses is the effect of freezing winter temperatures on eggs and fry in the channel if the water supply is reduced or cut off from the Creek. A well could supplement water in the channel during these times at 1,000 gallons per minute. The well could also be used to simulate spring flow. The proposal is for assessment, construction and maintenance of the well but monitoring of the channel and chum use will take place under the related project 2000-012-00. Potential FWP benefits could be significant as the channel capacity for chum spawning is designed at six times that in Hardy Creek.

A response is required because the proposal is technically deficient of any information to review. The obvious issue is do you write past investments off or continue to fund improvements that could become substantial over time. Given the status of chum salmon in the lower Columbia River, the expected response should likely be to proceed, but there are several questions that the proponents could provide background information on. For example:

1) Chum did not use the channel in 2000 due to drought, but did chum enter the channel during 2001? How did they distribute through the channel?
2) Is there any concern regarding the removal of 1,000 gpm on proximal streams, especially Hardy Creek? Is there any concern for acquiring the Water Right? The volume to be pumped is large, how was this volume determined?
3) Water temperature of the well water is likely to be warmer than surface, has there been any assessment of the potential effect on rates of egg development and emigration of chum fry?
4) What is the basis of water supply system proposed and is there any experience in the construction of artificial upwelling for chum spawning? Is there any evidence that chum will utilize this design?
5) Is there any management plan for the chum spawning populations in the Hardy Creek – Ives Island group (i.e., will the channels be loaded as a priority or will use be voluntary by the chum salmon)?

While we acknowledge the potential importance of an effective channel as a safe spawning refuge for these chum salmon, there is an apparently need to more fully consider the management of these chum spawning groups. The issue of 2 in 5 years flooding in the lower reaches of the streams is a concern that could be addressed by modifying the slope of the lower river to encourage chum to move above that area. The

ISRP would recommend a more comprehensive consideration of production and management plans for these chum spawners and how the channel factors into these plans.

ESTUARY AND PLUME PROPOSALS

ProjectID: 199801400

Survival and Growth of Juvenile Salmonids in the Columbia River Plume
Sponsor: NMFS
Province: Columbia Estuary
Subbasin: Columbia Estuary
FY03 Request: $2,092,855
5YR Estimate: $10,359,054
Short Description: Evaluate the role of the Columbia River plume in survival of juvenile salmon through long-term observations, fine-scale process studies, retrospective assessments, and modeling to assess management of flow to improve habitat opportunity.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
Response needed. This proposal requests funding to continue research in the Columbia River plume to evaluate the role of the plume in the survival and growth of juvenile salmon, biological and physical processes within the plume, and modeling studies to investigate the management of Columbia River flows to improve "habitat opportunity" in the plume (although habitat opportunity as a metric remains undefined and is an objective of this study). The proposal provides a strong technical justification and scientific background as to why these studies are related to the FCRPS. Most notably, they note:

"Annual spring freshet flows through the Columbia River estuary are ~50% of the traditional levels that flushed the estuary and total sediment discharge is ~1/3 of the 19th Century levels. Decreased spring flows and sediment discharges have also reduced the extent, speed of movement, thickness, and turbidity of the plume that once extended far out and south into the Pacific Ocean during the spring and summer."

The proposal also provided a brief summary of results to date, and noted how this proposal builds on these results. In this initial review, we limit our comments to the proposed objectives, tasks, and methods (Section 9f).

The ISRP continues to be strongly supportive of research in this important habitat but also note that the investigators have extended their original objectives to include prediction of estuarine and marine survival of salmon.

"Our ultimate goal is to predict estuarine and marine survival using a combination of empirical indices and computer simulation models." (page 13, Section 9f)

The stated objectives of this large proposal are now to (Section 9f):
"1. Through long-term observations, describe interannual variations in the distribution, abundance, and performance (health and growth) of juvenile salmon in relation to temporal and spatial characteristics of physical and biological features associated with the Columbia River plume and the surrounding ocean.

2. Conduct fine-scale process studies to identify and characterize the benefit of unique features of the Columbia River plume to juvenile salmon.

3. Describe, through observations, historical reconstruction, and numerical physical modeling, the temporal and spatial physical features of the Columbia River plume in relation to ocean conditions.

4. Examine the relationship between ocean and plume conditions, river flow, and juvenile salmon production using biological models to identify critical relationships between food resources, predator-prey interactions, salmon growth and survival.

5. Develop and analyze scenarios that describe changes in salmon survival as a function of Columbia River plume characteristics that may result from altered river flows due to climate and human-induced modifications, and/or from changing oceanic conditions. We will use physical and biophysical models of the plume to relate future FCRPS operations and ocean/climate conditions to salmon survival."

Objective 5 involves the prediction of salmon survival based on changes in hydrosystem management and flows and climate conditions as mediated through the lower river, estuary, and plume. The objective builds on recent modeling efforts by associated staff in the Columbia River estuary.

Requests for clarification by Objective and Task:

Objective 1. (page 14) What is the value of the additional February cruise? Any inference concerning Columbia River salmon would again involve inferences about the residence of Columbia River salmon through the preceding months. We are uncertain that this assumption merits the investment in an additional cruise unless more justification or other objectives can be provided.

Task 1.b. (page 15) As in our last review of this program, we certainly support the predation aspect of this study and are uncertain about how predator population sizes will be estimated. No results of past predation sampling was included in this proposal, what progress has been made and have population sizes been estimated? How transient are these predators and variable is their population size?

Task 1.c. (page 16) The objective of this added task is justified but the methods not adequately described. There is no description of salmon sampling efforts and reference to only "occasionally" sampling zooplankton. How will this information be incorporated into other sampling designs if there is not a specific sampling effort in support of this objective?

Task 1.d. (page 16) How consistently can the "ocean entry mark" be determined on otoliths (by species) and have studies been conducted to verify that the "mark" does relate to ocean entry. Other proposals reviewed referred to chemical analyses used to determine when the fish enter the marine environment.

Task 1.d. (page 17) Given the extensive comments presented by the ISRP in their last review, this review committee was surprised that a more thorough description of these methods were not included in this proposal! Many of the past comments continue to seem valid and require real clarification and not debate. We have read the past comments and considered what any misunderstanding may be … but we should not have to "interpret" this aspect of the proposal. Estimation of growth and survival is probably the critical task in this large proposal. If it cannot be done, then it would clearly limits the value of this investment. The issue seems to be that you can measure growth rate and size of individuals sampled but how can growth and survival between sampling periods be inferred if you do not know the residence time of the individual (or its population) in the plume? If the intention is to compare size of fish between sampling periods, how can this issue be addressed and how can survival be differentiated from dispersal?
Part of this answer may relate to Task (1.e.). Our question concerning the IGF-I hormone is how sensitive the assay is in providing "a good index of recent growth rate in salmonids"?

Task 1.f. (page 17) Why are only two months proposed for sampling, would not the July sample be important in examining duration of use of the plume and changes in stocks during this summer period?

Task 1.g. (page 18) Is there a source or base sample of these fish and pathogens in the Columbia River? Without that sample we are uncertain what the fish sampled from the plume would be compared against. How will survival actually be assessed by this sampling?

Task 1.h. (page 18) Clarify the intent of "We usually only enumerate those taxa from the 1-m, bongo, and neuston nets that are part of the salmon diets." If this were true, how would selectivity be assessed?

Task 2.a. (page 19) It is not evident how samples collected during the plume front studies relate to the other collections … are these in addition to the monthly samples collected under Task 1? Also, sampling of a

front using the Nordic 264 net would seem inconsistent with the size of the net versus the scale of the front. What are concerns associated with using this net to sample the fronts?

Most of the remainder of the proposal addresses the extensive analysis and modeling component of the study. The modeling work, however, overlaps extensively with two other proposals (30001 Historic Habitat…, and 30002 Optimization of FCRPS impacts …) and lead to confusion concerning tasks and deliverables. Our understanding of the relation with proposal 30001 is that the numerical modeling tasks in project #199801400 will apply the results from that proposal. However, the relationship with proposal #30002 is certainly less clear (although tables of these interrelationships are noted in the other proposals). To clarify the role of analyses and modeling (by model type and objective), the ISRP requests that the proponents clearly differentiate activities as estimation, simulation, and validation of the models developed; and who the responsible investigators are for each task. A single summary table or flow chart may be adequate. Proposal #30002 indicates that all numerical modeling will be included in project #199801400 and during the briefings it was indicated that any validation work would also be included in that project. We are then uncertain of the necessity of a separate proposal (#30002) unless it is solely focused on definition of possible management scenarios.

The budget for ship time is not well described (i.e., activities by vessel and costs) but ISRP notes that other or supplemental sources of funding for ship-time and other vessel alternatives such as fishing boats may be available. There is precedent for this in ground fishing research being done by NMFS at the NWFSC. Further, the size of this proposal makes it difficult to assess costs by activity and the relative priority of various tasks. Given the increasing competition for resources in this Province, it would be appropriate to rank the value of the various activities or provide a strong justification if this should not be done.

ProjectID: 30002

Optimization of FCRPS Impacts on Juvenile Salmonids: Restoration of Lower-Estuary and Plume Habitats
Sponsor: OHSU
Province: Columbia Estuary
Subbasin: Columbia Estuary
FY03 Request: $435,192
5YR Estimate: $1,206,325
Short Description: Restore Columbia River estuary and plume juvenile salmonid habitats and optimize FCRPS impacts on the plume through improved understanding of estuary and plume physcial processes and definition of possible future management scenarios
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is required for clarification of this proposal relative objectives and tasks in proposal #199801400 and the specific tasks recommended under this proposal. While the ISRP fully agrees that "the project assembles a group of leading coastal scientists", with the need to consult with management agencies, and the potential value of establishing a Project Advisory Board, we are concerned that the current knowledge level does not justify this level of effort at this time. However, as we have noted above, this may simply reflect our current understanding of how these activities fit together.

The objectives stated for this proposal were (Section 9):

- *"Objective 1: Define how the lower-estuary and plume interacted historically with coastal currents, how operation of the FCRPS has altered the lower-estuary and plume, and how climate change and the FCRPS will impact the system in coming decades.*
- *Objective 2: With Action Agencies, define needs and opportunities for science-based input to operational FCRPS management practices, given uncertain climate and coastal circulation forecasts.*
- *Objective 3: With FCRPS managers, define management scenarios: a) that are based on physical understanding, b) that can be evaluated in terms of habitat opportunity and other constraints on the system, and c) whose implementation can lead to a qualitative improvement in survival of juvenile salmonids.*

Innovative oceanographic methods, remote sensing, management science and analyses of numerical model results will be used to achieve the goals of the project, as it moves from research toward provision of definite strategies over the next 6 to 10 years. A Project Advisory Board (PAB) that includes Action Agency personnel, FCRPS managers and external scientists will be formed to help ensure productive application of the insights achieved. Tight cooperation with work carried out in the estuary and plume by the National Marine Fisheries Service (NMFS) will be facilitated by participation of PIs in this project as well as in two projects proposed by NMFS."

The majority of the scientific background and tasks, however, address Objective 1 that is very similar to objectives and tasks included in proposal #199801400. Objective 2 is limited to analysis of the use of climate information by FCRPS managers (page 25), and Objective 3 involves the development and analysis of management scenarios to improve salmon production in estuary and plume. (Note: Footnote 1, section 9b. limits the study area of this proposal to lower estuary seaward of Rm-5 and the plume, and surrounding coastal areas of central Oregon and southern Washington.)

Specific comments:
1) Section 9f, page 10. Figure 6. The symbols in Figure 6 are not printed correctly in the caption making interpretation of the figure impossible. The figure is the same in printed copies and on the CD.

2) Objective 1, tasks 1.a. and 1.b. It is not at all clear to the ISRP why these data collection and analysis tasks are not part of the Plume proposal (#199801400), and how these data would be integrated into the large analysis under that proposal. In meetings we were informed that the numerical modeling of the plume dynamics would be conducted under the Plume proposal but these analyses seem inconsistent with that understanding. (also see Section 9d.)

3) A critical uncertainty to us is the lack of definition of "habitat opportunity", a term used as a metric for salmon habitat suitability in the Plume proposal and this proposal. A useful clarification for both proposals would be how the investigators intend to define that metric and what types of parameters would be involved. A related concern would be how easily such a metric could be measured without extensive and costly surveys?

4) The ISRP is concerned that the term "Optimization" is misleading in that it implies a single recommendation and maximum production of salmonids. This Region has surely learned that this is not realistic and we do not believe that these proponents endorse such a simply "best" inference (their objectives do not use this term). If the Basin incorporates climate change and plume dynamics into their annual FCRPS management plans in order to improve salmon production that would be a significant contribution from this research (although the economic and social components of these management decisions should likely also be factored in).

5) If objectives 2 and 3 were to proceed without a functioning numerical model at this time, what activities would be undertaken and do the proponents still see a value in establishing the PAB and definition of management scenarios? Each scenario could take substantial time and involve numerous assumptions, how would the number of these scenarios be handled without developing into a huge list of contradictory predictions like some past modeling studies in the Basin have evolved into?

5) The indirect costs in the budget appear unreasonably high and need to be justified.

ProjectID: 30001

Historic habitat opportunities and food-web linkages of juvenile salmon in the Columbia River estuary: Implications for managing flows and restoration
Sponsor: NWFSC/NMFS
Province: Columbia Estuary
Subbasin: Columbia Estuary
FY03 Request: $597,559
5YR Estimate: $2,698,559
Short Description: Evaluate the role of river flow on habitat opportunities and food web structure for juvenile salmon by comparing historic and current conditions using model simulations and empirically derived food-web linkages.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. This is a well written, comprehensive proposal. The research uses novel techniques for addressing critical questions concerning historic changes in estuarine habitat and the food resources of juvenile salmon, and the influence of various flow scenarios on estuarine habitat opportunity for salmon. Results of this research should provide significant improvements in understanding of the role of the estuary in salmon life histories and production, and provide information that will be useful in flow management of the hydrosystem. This proposal appears to overlap with two other proposals entitled "Plume" and "Optimization" that address similar questions. Some clarification of the unique contribution of this proposal relative to the two others is needed. The sponsors should be more specific about how they are going to use the historic information. How is this work different from that in the Thomas report? Is the Corps currently conducting similar work, extended from the Thomas report? The subcontractor is not noted in the budget section. Is the budget complete given the comments in 9G?

ProjectID: 30017

Columbia River Tidewater Assessment for Recovery Planning
Sponsor: UP
Province: Columbia Estuary
Subbasin: Columbia Estuary
FY03 Request: $137,338
5YR Estimate: $137,338
Short Description: Characterize habitat/fish productivity relationships; identify factors that limit recovery, early actions for recovery; and research, monitoring, and evaluation needs
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. This proposal is to characterize productivity relationships between habitat and fish for steelhead, chum, Chinook (5 listed ESUs) in the lower Columbia and upper Willamette. The project would also identify factors limiting recovery, identify needed actions and research.

The proposal presents an extensive rationale in which it acknowledges other related projects that may produce similar or overlapping information, but isn't specific as to how this project's focus is distinct from others. It states that coordination with other projects will take place once this project is funded. Does this project duplicate ongoing efforts? For example, has existing habitat information already been summarized in the subbasin summary? The response should discuss potential overlap between this proposal and proposal #30001 (NMFS) that will evaluate the role of river flow on habitat opportunities and food web structure for juvenile salmon.

Task 1.c.: Are watershed assessments necessary or have they already been completed? Other tasks raise similar questions. The overall question raised by this proposal is whether is identifies needed research or duplicates ongoing research or existing knowledge.

What is the interpretation of "historical" in this context? Does this mean at different points in time? Before fishery exploitation? Before European-American exploitation? What is the relevance of historical benchmark conditions when irreversible changes have occurred?

At least three in-text citations are not included in the list of references.

ProjectID: 30010

Canada-USA Shelf Salmon Survival Study
Sponsor: DFO
Province: Columbia Estuary
Subbasin: Columbia Estuary
FY03 Request: $418,800
5YR Estimate: $2,094,000
Short Description: This project surveys the size, condition, and biological condition of juvenile salmon occupying the British Columbia & SE Alaskan continental shelf regions in the autumn (October). The survey also includes extensive collection of oceanographic data.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
This proposal requests funding from BPA for an additional coastwide survey (October) of juvenile salmonids and oceanographic conditions along the continental shelf to complement summer surveys conducted by the Science Branch, Canadian Department of Fisheries and Oceans (CDFO). The proposal includes an extensive and informative summary of recent findings based on similar surveys conducted since 1998 by CDFO (some previous funding apparently provided by BPA but not reviewed by ISRP). Based on these surveys, the proponents indicated that salmon from the Columbia River tend to migrate northward along the continental shelf, that growth of salmon (in particular chinook and coho salmon) and marine environmental conditions are not equal along the shelf, and that certain stocks of salmon have a propensity to rear in specific areas of the coast. These investigators' hypothesize that the productivity of some Columbia River salmon stocks is more dependent upon where they rear in the ocean than due to their freshwater or estuary conditions.

The proposal requests ongoing (5 years) support for 28 days of ship-time for an October survey and sample processing. The proposal refers to an end of winter survey but its never clear whether that survey is funded or requested (it is not considered further in this proposal). The survey is intended to map ocean conditions determining the growth and survival of Pacific salmon along the West Coast of North America from the British Columbia-Washington border to South East Alaska, and to identify which stocks of Columbia River salmon forage in these areas. The stated objectives were (Section 9f, page 29):

(1) identify the extent of the region of poor growth and survival,
(2) measure the growth and feeding conditions of the salmon within these areas,
(3) identify the physical and biological changes in the ocean that lead to reduced ocean survival through changes in growth, and
(4) identify the identity of the fish occurring in this region of poor growth using DNA.

The ISRP agrees that useful information about Columbia River salmonids would be derived from joint support of these surveys and agree with the authors' summary comments about their past surveys.

"Our results to date demonstrate that the ocean habitat of salmon, and the response of salmon to that habitat, is neither homogeneous nor constant." (page 25, Current limitations)

However, much of the proposal is not so carefully worded and is more narrowly focused on the 1998 results as opposed to the latter three years of data. We disagree with the inference that the west coast of Vancouver Island (WCVI) is an inherently "poor" area of ocean production (see objectives stated above). We are also concerned that concluding that specific salmon stocks rear in specified areas of the ocean. Extensive past data from coded-wire tagged salmon indicate very wide distributions of salmon populations

… but we do acknowledge that these recoveries are based on the locations of fisheries and generally for older aged fish.

We also have significant concern for statements concerning the value of restoration efforts in freshwater habitats (3rd para., page 25).

"Whatever the specific causes of the reduced productivity, the decreases in marine survival over time for many stocks appear to be much greater than the changes taking place in freshwater survival. This suggests that it may not be possible to manipulate the freshwater environment for affected stocks sufficiently to compensate for what is occurring in the ocean."

The ISRP agrees fully with the value of measuring the survival of salmonids in freshwater and marine environments, but the inference based on the last sentence is not helpful to this Region. For example:

i) If ocean conditions are poor, then it is likely that agency rebuilding goals may not be met regardless of efforts in freshwater; but it is also likely that improved freshwater conditions can protect diversity within populations and increase production during those poor marine survival periods. During those periods, only freshwater and fisheries can be managed to preserve future production.
ii) Conversely, if ocean conditions are very good, then production requires sustained production from freshwater spawning and rearing habitats.

The Basin no longer debates the needed integration of freshwater and marine conditions for salmonid recovery and clearly recognizes the value of studies in the marine environment (as in recent BiOPs).

Specific comments on Proposal:
1) Protein electrophoresis and DNA analysis … these seem to be duplicate tasks. The proposal suggests that this provides for "finer level of resolution" but it may also result in conflicting results. What evidence is there to support this added cost? Further, the DNA sub-proposal may be important but it does not seem to be included in the proposal budget. Is this accounted for elsewhere?
2) Similarly, while we see the merit of testing for yearling chinook along the shelf, the task described on page 37 does not have any budget assigned to this task. Who is conducting this analysis and is there a cost to this proposal?
3) Oceanographic Analyses (page 38) refers to the development of a predictive model integrating oceanographic and atmospheric data, but where is this identified in the budget and who would conduct this study? Other investigators are proposing similar models, so the ISRP should evaluate the need for each.
4) It has been identified that other programs in Alaska and GLOBEC are also sampling juveniles along the continental shelf. How does this proposal link with those projects, and/or does it support the multi-agency/national effort already underway? What is the unique contribution of this proposal?
5) While the ISRP does not normally address budget items there are some issues that should be responded to in this case.

- Personnel lists 5.1 FTE but time allocations and staff are not identified. Two of the investigators are post-doctoral fellows, has their support already been committed and will they be available through the duration of the project?
- As noted above, some tasks are not specified in the budgeted but we note that stock identification and scale analysis are included in another proposal (#30007). Are these proposals actually independent since both were submitted by Dr. Welch?
- Benefits and Indirect costs are not presented as usually done for U.S. agencies. Are these accepted cost estimates from the Canadian agency?
- The utility of a BPA commitment of funds would be contingent on continued support through CDFO. Are these likely to continue and could a Letter of Support be provided before final commitment of funds?
- The section on Cost Sharing indicates a significant allocation of senior staff time to this proposal. Since Dr. Welch is already the principle noted on the proposal, what other staff are participants? This is particularly relevant given the first bullet above.

ProjectID: 30007

An Acoustic Tracking Array for Studying Ocean Survival and Movements of Columbia River Salmon
Sponsor: Kintama Research Corporation
Province: Columbia Estuary
Subbasin: Columbia Estuary
FY03 Request: $2,930,535
5YR Estimate: $7,345,735
Short Description: Development of a skeleton acoustic array to demonstrate an approach to tracking movements of individual fish through the river and along the West Coast of North America. The project will initially be focused on salmon, but has much wider application.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. This proposal continues to be technically innovative and the investigators have completed portions of the Innovative Project (#200008000) tasks. These results are presented and relevance to the FWP is well described. However, the guidelines for the innovative project category require that sponsors complete the innovative study and submit a final report in order to be considered for additional funding. What is the status of completion of the final report?

The purpose of this proposal is "to expand research on the acoustic tag and develop a prototype array which will allow demonstrating the capabilities of the technology to establish both river and ocean movements of chinook salmon (page 5)." The author states that the basic technology is now commercially available and the efficiency of its components has been tested. However, he does also note that "the logistics of deploying the equipment and gathering the data from fish tagged at various locations will require extensive effort over a wide geographic area. Deployment of equipment in the ocean will require significant R&D design effort (in particular, we intend to place the entire array sub-surface so that surface floats vulnerable to vessel traffic, fishing activities, and "curious" individuals are eliminated). Designs have been developed and partially field-tested for deploying the equipment on a semi-permanent basis to withstand the severe conditions that may be encountered at various sampling sites."

Concerning the results presented, the ISRP did note that studies of the biological response of smolts to the acoustic tag implantation were conducted on steelhead and that the proposal focuses on spring chinook. The author may also be interested that there are yearling fall chinook reared in the Snake and upper Columbia River that would also be large enough for tagging.

Much of the proposal background is the same material presented in proposal #30010 and we will not repeat our comments. The importance of this technology is that it provides a means to actually measure migration rates (not necessarily migration paths, they will be inferred between two points), residency time in an area (e.g., within the Columbia River plume), and mortality rates. These are important questions for the Basin and merit support, but … in our assessment, this proposal is too large a next step in the development of the technology and the "proof in principle". Before expenditures in the millions for receivers etc., there is a responsibility to develop the arrays, deployment processes, and methods for data capture. There is little value in testing a hypothesis unless the uncertainties of the new technology can be addressed or eliminated. The ISRP continues to support this innovation and the efforts of this investigator but we recommend that a revised and reduced proposal be submitted. The development and testing of receiver arrays should be priorities in the short-term and then scaling up to a network of coastal arrays over time if demonstrated to be successful (i.e., re-profile costs over time and after demonstrated successes). This process may also allow for other organizations to contribute to the larger coastwide array and possible applications. However, the principles could provide important information to the Columbia Basin if the revisions first address in-river movements and then residence time in and around the Columbia plume.

Attention should be given to the basis for budget estimates, in particular who the investigators will be and their involvement, and the basis for certain cost estimates. In the current budget, it is hard to understand a basis for Section 7 (Monitoring and Evaluation) costs given that the majority of those costs would seem to be labor for analytical time.

ProjectID: 30009

Coastal Cutthroat Movements in the Columbia River Estuary
Sponsor: USFWS
Province: Columbia Estuary
Subbasin: Columbia Estuary
Short Description: Juvenile and adult cutthroat trout from four Columbia River tributaries will be tagged. Movements will be monitored by aerial surveys (radio tags) or a tethered array (acoustic tags). Data will be analyzed using the CORIE model for physical parameters.
Response Needed? Withdrawn. Funded though a non-BPA source.

ProjectID: 30014

Map Subtidal Large Woody Debris and Other Habitat Features in Relation to Fish Distribution in the Lower Columbia River Estuary
Sponsor: Battelle Marine Sciences Laboratory
Province: Columbia Estuary
Subbasin: Columbia Estuary
FY03 Request: $134,070
5YR Estimate: $409,688
Short Description: Map location and type of large woody debris (LWD) using side scan sonar and quantify conditions where it is most commonly found. Map fish distributions in relation to LWD using underwater video and a DIDSON acoustic camera.
Response Needed? No - Not Fundable
ISRP Preliminary Recommendation and Comments:
Not fundable. Much of this proposal is concerned with testing techniques. There is no assurance that the side scan sonar techniques will work in shallow water habitats. Nor is there any assurance that the DIDSON device will allow identification of fishes to species or separate salmonids from other fish taxa. To understand the importance of large wood as salmonid habitat, the work should be done in the context of an overall habitat assessment. The need and benefits to fish are not well justified.

ProjectID: 30018

Salmonid Population and Habitat Monitoring in the Oregon Portion of the Columbia Estuary
Sponsor: ODFW
Province: Columbia Estuary
Subbasin: Columbia Estuary
FY03 Request: $528,913
5YR Estimate: $2,922,578
Short Description: Implement fish population and habitat monitoring (EMAP) in the Oregon portion of the Columbia Estuary
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed for this and the related proposal (#31034), both are technically inadequate proposals. Both proposals request over $500,000 annual for important monitoring programs but these proposals are inadequate for review. Both proposals will apply the ODF&W EMAP procedures for monitoring and evaluation as has been presented in several previous Provincial reviews. While the ISRP has recommended this process in other Provinces, these proposals lack detail and any project history concerning the development of this process. The discussion of sampling design, sampling methods, and data analysis is inadequate. Although the methods are broadly referenced in the proposal, the ISRP is not sufficiently familiar with the methods in the Oregon Plan and consequently they need to be adequately summarized in the proposal. The proposal itself must be a complete and stand alone document.

Each task should be associated with a more detailed summary of the methodology. For example, there are concerns about each task in Objective 1:

Task 1: Is any biological data collected on the juveniles enumerated? What is the basis of the sampling protocol? Why is abundance of coho identified separately from the other salmonids?

Task 2: Is any biological data collected during these steelhead monitoring programs? Population status will be indexed through cumulative redd counts and time between surveys is presumably set based on the visible "life expectancy" of redds. How was the frequency of surveys established, how variable is the life of a redd within a stream and between streams? Should the visible life of a redd be calibrated in each geographic area or is there data to support using a fixed period between Provinces?

Task 3: same comments as for Task 2, except replace coho stream life for steelhead redd life expectancy. More information on coho assessments was presented at the briefing but nothing is included in the proposal.

Related questions to those above include: How was the number of sites selected? How will EMAP be used to select the actual sites? Which rivers will be sampled? What will be the frequency of sampling? What are the methods for sampling habitat and juveniles? How will juvenile abundance be determined? How will the sampling enable detection of trends in distribution and abundance? Will the sampling be adequate to detect range expansion due to habitat recovery? What exactly do the precision estimates mean? How will hatchery and wild spawners be differentiated? When the fish are alive or as carcasses? How will the data be analyzed? In using the AUC technique, what value for stream life is used and why? Is stream life assumed to be constant? If so, why? Why are coastal cutthroat and chinook not included in the monitoring? Is the sampling intensity proposed in these provinces comparable to other provinces? Further, results of surveys in these provinces were presented at the briefings but were not included in the proposal.

Again, the ISRP does not expect the sponsors to present the full text for the monitoring methods taken directly from the Oregon Plan, but rather a concise summary that is sufficient to allow us to judge the scientific credibility of the work and its merit in relation to provincial and the basin recovery.

ProjectID: 31034

Salmonid Population and Habitat Monitoring in the Oregon Portion of the Lower Columbia Province
Sponsor: ODFW
Province: Lower Columbia
Subbasin: Columbia Lower
FY03 Request: $532,648
5YR Estimate: $2,943,216
Short Description: Implement fish population and habitat monitoring (EMAP) in the Oregon portion of the Lower Columbia Province
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. See comments on project #30018.

ProjectID: 30015

Lower Columbia River and Columbia River Estuary Ecosystem Monitoring and Data Management
Sponsor: LCREP
Province: Columbia Estuary
Subbasin: Columbia Estuary
FY03 Request: $472,000
5YR Estimate: $3,268,000
Short Description: Develop protocols, procedures, and indicators for measuring habitat condition, assess exposure levels to toxic contaminants, develop ecosystem restoration information center for housing and accessing data specific to lower Columbia River and estuary.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. Is the Washington state data structure not appropriate for the estuary? How does this tie into NMFS work in the estuary? Is this consistent with protocols developed through SSHIAP? Is this a counterpart to StreamNet? How does this tie with the Council and NMFS discussion on creating a regional data management system? What does Washington Department of Ecology have and plan for toxic monitoring? What is the agency commitment to use this as a data warehouse?

Why is this so expensive?

ProjectID: 30016

Implement the Habitat Restoration Program for the Columbia Estuary and Lower Columbia River
Sponsor: LCREP, CREST
Province: Columbia Estuary
Subbasin: Columbia Estuary
FY03 Request: $5,236,200
5YR Estimate: $29,036,200
Short Description: Establish program to identify and prioritize on-the-ground habitat restoration projects and plan their monitoring and evaluation. Take action on six restoration projects already processed and approved through regional and local workgroups.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. The proposed property acquisitions need to be better justified. How did these specific projects meet the selection criteria? How much are the small-acreage efforts going to benefit fish and wildlife? What is current fish use and what is potential fish use? In Gray's Bay what is the sedimentation doing to that habitat? Another proposal is for an assessment of the Gray's subbasin (proposal 30005), why shouldn't that assessment include the bay? Doesn't disruption of the upper watershed have a large effect? For the response, proponents should refer to the programmatic section of this report on watershed assessments and prioritization of habitat restoration and acquisition projects.

What is the justification for the budgeted costs for FTE and fringe? How does the budget relate to particular tasks?

ProjectID: 199306000

Select Area Fishery Evaluation Project
Sponsor: WDFW, ODFW, CEDC
Province: Lower Columbia
Subbasin: Columbia Lower
FY03 Request: $2,290,844
5YR Estimate: $12,075,011
Short Description: Develop and enhance fisheries in the lower Columbia River utilizing hatchery stocks; while protecting depressed wild stocks through application of net-pen rearing; and monitor and evaluate rearing effects on habitat at net-pen sites.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is required due to the technical deficiencies of this proposal. As stated by the ISRP during the 2000 review "Annual reports are cited in the proposal, but there is little summary material to aid reviewers. The proposal would benefit from a listing of results and accomplishments to date. While multi-year funding is viewed favorably, there should first be an extensive programmatic review of the project by ISRP or ISAB." While many complimentary statements are made about the program there is nothing for the ISRP to review or comment on. ISRP comments from the past review were not addressed and yet there is a request for a 40% increase in funding and a stated intention to proceed to Phase 3 full production at several sights. Another ISRP comment in FY00 was that methods were not well described. This proposal lists objectives and tasks with no description of methods. Tasks are listed in very general form (e.g. maximize coho production", "develop spring Chinook fishery").

The purpose of this project is to use hatchery stocks to develop and enhance fisheries in the Lower Columbia River and to use net-pen rearing of wild stocks. The project has been in existence since 1994. The proposal requests $2.3 million for FY2003 and outyear budgets range from $1.7 to $2.0 million. Net-pen sites which have been feasibility tested with positive results are moved into "phase 3", which includes the establishment of additional net pens, expanding production and expanding fisheries. The proposal states that to date little effort has been invested in moving to phase 3, but that now several sites are deemed suitable for this expansion. The project has modified release strategies to minimize straying. Three strategies to eliminate straying are described.

This project is a major deviation from the original statements made about developing terminal fisheries to better protect ESA stocks. Diverting fishing pressure to new locations could be a very effective conservation program (as has apparently been appreciated in past reviews and reports referred to). However, biological concerns about the expansion of these new fisheries will be related to the ultimate magnitude of these releases, their ecological impact and competition with other populations and species, and about the adequacy and accuracy of the assessments conducted. For example, how would you know that 99-100% harvest rates were accomplished in terminal fisheries? A statistically rigorous assessment of these values would require an extensive survey of other populations and habitats, but none of the information is provided. Further, how are the magnitudes of Phase 3 releases determined, what impact is acceptable, and who makes these determinations?

Other concerns noted in the proposal are:
1) Monitoring refers to sampling for coded-wire tags but where are the costs for tagging accounted for and what M&E is actually conducted? The proposal lists tasks but provides no other insights. Further, several objectives in Sections 5,6, and 7 are very expensive without adequate description or justification.
2) Section 9g refers to supporting "two state hatcheries completely" but the budget only includes "In-kind" contributions for these hatcheries. Is BPA paying for the management of these hatcheries or what was meant in that section?
3) An economic analysis should be done on the costs and benefits of this project or portions of it. For example, the development of spring chinook rearing at Tongue Point seems exceedingly expensive for this one location and the investment may be better place in another activity.

While this program has demonstrated success to date, a significant expansion of the releases and fisheries could generate other impacts or issues. An independent monitoring or periodic review of the program (biological assessment and cost effectiveness) may be a recommendation for NWPPC and BPA to consider, and could assist the proponents of the program.

ProjectID: 31031

Clatsop County Fisheries Restoration Project
Sponsor: CEDC Fisheries
Province: Lower Columbia
Subbasin: Columbia Lower
FY03 Request: $455,250
5YR Estimate: $817,250
Short Description: Recolonize eight Columbia River tributaries in Clatsop County with appropriate stocks of winter run coho and chum salmon using otolith-marked eyed eggs out-planted in natal streams where remnant runs exist, or using introduced stocks when necessary.
Response Needed? No - Not Fundable
ISRP Preliminary Recommendation and Comments:
Not fundable. This proposal would recolonize 8 Columbia River tributaries in Clatsop County with winter-run coho and chum. It will initiate a captive brood stock program to evaluate sites for rearing coho. The primary strategy will be to out-plant eyed eggs from a central incubation facility (Klaskanine Hatchery) to various reaches of selected streams. Otolith mass marking will be done during early incubation. Egg planting will be done using a method developed in Alaska in the 1980's. Eight Clatsop County streams will be surveyed in 2002-2003 for remnants of late-run coho and chum. Streams will also be evaluated for the suitability as spawning and rearing habitat. The progression of outplanted eggs will be monitored. The proposal seeks funding from federal, state and private sources. The BPA request is for 50%.

Young's Bay historically supported a strong population of chum, and there is likely some value in getting chum into these systems, but this proposal is not adequate to the research need.

The salmon egg planting device (gas powered water pump pushing water through pipe into gravel, eyed eggs introduced into stream) was developed and used with mixed success in Alaska in the 1980's. None of the performance history of the device is reviewed in the proposal.

The objectives and tasks are presented in abbreviated form. The proposal is vague about the techniques of egg planting and of thermal marking. The proposal says nothing about the methods of recovery of marked fish and includes no budget for thermal marking. Even if the number of embryos is modest the cost of energy (fuel oil) for marking will not be small.

The captive broodstock part of the project is poorly developed. No one has ever been successful rearing chum salmon to maturity in captivity, and the proposal does not suggest how the proponents intend to do it. The fish are susceptible to vibrio.

HABITAT RESTORATION PROPOSALS

This set of proposals deals with habitat restoration in the lower Columbia River and estuary. Most propose to open new habitats by reconnecting the river to side channels, improving access for salmonids, and allowing for increased floodplain connectivity. This work would appear to return the river to more natural and historic conditions, but most proposals in this set were not able to provide quantified background information on pre-restoration conditions. These conditions include the status and current use of the habitat by native and exotic species, including predator species and listed species, and prey consumption by predators. The presence of predators in the habitats targeted for restoration and reconnection could present a serious bottleneck for native fish survival. Other pre-restoration conditions that, for the most part, were not well quantified are conditions of the physical habitat, potential bottlenecks for passage into and out of the habitat including restrictions imposed by tidegates, and predicted flows patterns and whether greater flows would achieve the objectives of the project.

ProjectID: 30004

Blind Slough Restoration Project - Brownsmead, Oregon
Sponsor: CREST
Province: Columbia Estuary
Subbasin: Columbia Estuary
FY03 Request: $173,550
5YR Estimate: $193,550
Short Description: Restoration of tidal exchange between the Columbia River Estuary and Blind Slough in the community of Brownsmead, Oregon. BPA funds will be used to match U.S. Army Corps Section 1135 funding for 25% of the total project costs.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
This project is to restore tidal exchange between the Columbia River estuary and Blind Slough. BPA funds will be used to cost-share USACE funding, as well as to pay for project planning, design, and effectiveness monitoring. Blind Slough is in an important area for reconnection because of its proximity to a biologically productive island network and its location in the oligohaline zone where young salmon acclimate to salt water. Proposed activities under this project are connected to needs identified in other programs and documents. The project is tied to other projects on juvenile salmonid behavior and builds on some locally initiated reconnection projects. It was evident that the project has excellent local involvement and support.

The objectives of the project are to conduct feasibility studies, restore connectivity of the Slough in seven places, and to conduct both pre-and post-project monitoring to evaluate changes in water quality and level of fish use for rearing, foraging and spawning. Overall, the objectives and tasks seem appropriate to the goal, but more information could be provided about how and why the seven reconnection sites were chosen and whether these seven reconnection sites are expected to be sufficient. The monitoring is hypothesis driven, but hypothesis 2 isn't really testable in this form. This hypothesis needs to be written in a more testable way. The proposal recognizes the value of effectiveness monitoring but should likely solicit statistical advice on survey designs before monitoring begins and establish sampling methods and protocols. For the response, proponents should refer to the programmatic section of this report, specifically on monitoring and evaluation.

The proposal shows good potential for benefits to fish and wildlife, but a response is requested on a few issues:
1) There was concern whether the tidegates are going to provide adequate access at both the upper and lower ends of the Slough. The Corps should seriously consider how they are going to get enough flow and fish into the system. How will effectiveness of these gates be assessed?
2) Pre-project monitoring should address the current fish populations and in particular the predator populations. In these slow moving tidal environments this could be a significant limitation to the benefits of the program.
3) This proposal could be developed into an important habitat restoration experiment. Activities similar to this are likely to become increasingly important and would benefit from a well-executed study. The involvement of other research organizations could provide staff for monitoring and expansion of investigations. For example, the installation of PIT detection arrays at the inlet and outlet of the Slough could provide important additional information on survival, duration of use, habitat use versus flow rates, etc.
4) If the objectives of the proposal are met and salmonids utilize the slough for rearing, the next step in this restoration would be the reconnection of land with the waterway. Is there any associated acquisition plan or program that could build on this initiative?

ProjectID: 31014

Evaluate juvenile salmonid use of restored floodplain wetlands in the Lower Columbia River Estuary
Sponsor: DU
Province: Lower Columbia
Subbasin: Columbia Lower
FY03 Request: $150,000
5YR Estimate: $450,000
Short Description: Evaluate benefits and effects of wetland habitat restoration on juvenile salmonids rearing and migrating through the Lower Columbia and implications for restoration and salmon recovery.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed that better describes and clarifies the research question and the study design.

ProjectID: 30011

Preserve and Restore Columbia River Estuary Islands to Enhance Juvenile Salmonid and Columbian White-tailed Deer Habitat.
Sponsor: USFWS & CLT & USGS
Province: Columbia Estuary
Subbasin: Columbia Estuary
FY03 Request: $719,437
5YR Estimate: $1,372,687
Short Description: Purchase 626 acres on Crims and Walker Islands and restore tidal emergent marsh and riparian forest habitat by enhancing tidal channels to provide juvenile salmonid rearing/ foraging habitat and to achieve the recovery of the Columbian white-tailed deer.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. The proposal needs to include a biological (demographic) description of a sub-population and a better justification of why acquiring the additional islands would lead to delisting. Will the acquisition enable the population to reach a minimum viable size? How was it determined that there was sufficient habitat on the islands to support a viable population of whitetails? Was historic Columbian white-tailed deer habitat inundated by federal hydrosystem projects? Is recovery of white-tailed deer a BPA responsibility?

The applicants need to better justify the proposed physical channel changes? Were the proposed changes based upon a hydrologic assessment to ensure that the actions are likely to achieve the desired objectives? If so, who did the assessment? Have the plans for restoring tidal channels etc., been subject to a hydrologic review?

ProjectID: 31015

Sturgeon Lake/Dairy Creek Restoration
Sponsor: WMSWCD
Province: Lower Columbia
Subbasin: Columbia Lower
FY03 Request: $121,000
5YR Estimate: $256,000
Short Description: Reopen the Dairy Creek channel to Upper Sturgeon Lake, construct a rock spur jetty in the Columbia River, re-construct and replace an existing debris boom, and repair an existing culvert.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed; although the proposal did not warrant a response, the habitat in Sturgeon Lake and Dairy Creek is potentially very valuable and some survey work is warranted.

The proposal describes a potentially worthwhile project that could significantly improve mainstem holding and rearing capacity for salmonids. This project will reopen a channel to Upper Sturgeon Lake and make a jetty, debris boom and repair a culvert for the purpose of reopening habitat. The 3200-acre Sturgeon Lake on Sauvie Island in the Columbia River is owned by the State of Oregon and managed by ODFW. The lake is used by out-migrating juvenile salmonids for off-channel feeding. Federal levees and sediment plugs block water flow into the lake. The proposal states that construction of a stable entrance channel into the Sturgeon Lake ecosystem offers a significant opportunity for backwater feeding and refugia for salmon.

The project history details a number of actions taken to clear the channel, control erosion, and control sedimentation. However, sand migration continued. USACE continues to be involved and may fund the reconfiguration of a jetty once landowner concerns about flooding are addressed. The proposal suggests a 75% ACE/25% FWP cost-share.

The proposal does not describe objectives tasks, or methods. Monitoring is not described. No information is given on the nature of the habitat, current fish use, potential fish use, predators, etc.

A proposal should be prepared for baseline work that provides a more thorough documentation of lake system use by salmonids. What species are using the habitat now? What are the expected biological benefits from opening habitat? What is the evidence that opening Dairy Creek will be sufficient to flush accumulated sediments? How much flushing of sediments can be expected and over what time frame will this occur? How much improvement in salmonid rearing habitat can be expected from opening Dairy Creek? Is this or could this be quality juvenile habitat? How susceptible are the fish to waterfowl predation?

ProjectID: 31019

Fish Passage Assessment and Prioritization Program
Sponsor: DLUT
Province: Lower Columbia
Subbasin: Columbia Lower
FY03 Request: $72,432
5YR Estimate: 143681.$75
Short Description: Develop fish passage barrier assessment methodology for road / stream crossings, inventory and assess county owned facilities on a 5th field HUC basis, prioritize passage barriers to core habitat areas for threatened and endangered fish species.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. This proposal addresses the need for an inventory of fish passage barriers in the Tualatin River system, which according to the proposal is dominated by productive habitat, has no hatchery releases, and therefore offers the potential for wild stock benefits from reestablishing habitat connectivity. The proposal cites the first step to reconnecting habitat as the identification of road-stream crossings that act as passage barriers. Proposers argue that because of the Tualatin's location in an area of rapid population growth, active watershed management will be necessary to retain habitat quality. They see the road-stream crossing barrier analysis as critical to filling gaps in knowledge of how to prioritize restoration actions.

The proposal shows good connection Willamette Basin plans and projects. It is a reasonable project that could open new habitat to colonization by salmonids. The plan for assessing and prioritizing fish passage barriers makes efficient use of time and information.

However, the concept of habitat quality above barriers, which is one of the assessment criteria, needs to be more thoroughly discussed. Applicants should meet with ODFW staff to determine the habitat and fish data that are available and enlist ODFW assistance in assessing habitat quality during the project. An additional consideration is whether migratory fish historically could access the area above the culvert. Indigenous, genetically unique stocks that have been isolated for many years could exist above the barriers. Additional criteria for assessing culvert removal should be whether migratory fishes likely had access to the habitat above the culvert historically and whether current stocks above the barrier have unique genetic and ecological qualities that should be preserved.

The proposal describes a culvert assessment protocol that uses surrogates to measure and assess barriers. This approach appears to make sense, and would also appear to be well developed. Based on these methods an inspection protocol handbook would be developed for use in the field. A priority plan would be developed using the inventory of barriers weighted by factors that represent potential benefits to passage from barrier removal. The proposers should review culvert assessment protocols developed in Washington *Fish Passage Barrier and Surface Water Diversion Screening Assessment and Prioritization Manual (WDFW 2000)* and other projects: (e.g. project 27022 in the Grand Ronde Subbasin) to see if methods already developed are applicable to the Tualatin. Consequently, the response should justify why development of a new handbook is necessary.

This project appears to provide needed and valuable preparation work for the restoration of fish passage in the Tualatin River system. Overall, it is well justified, systematic, and cost effective.

ProjectID: 31021

Reduction of gravel road sediment production & interruption of sediment delivery to streams
Sponsor: DLUT
Province: Lower Columbia
Subbasin: Columbia Lower
FY03 Request: $238,436
5YR Estimate: $510,674
Short Description: Decrease sediment produced by gravel roads and interrupt delivery systems that hydrologically connect the road to the stream systems.
Response Needed? No - Not Fundable
ISRP Preliminary Recommendation and Comments:
Not fundable. Given the myriad of land use problems in the Tualatin River, the sponsors have not adequately demonstrated that deposition of fines in the streambeds of tributaries to the Tualatin is a significant factor limiting egg to fry survival for salmonids.

ProjectID: 31024

Protect, Enhance and Maintain Wetland, Riparian and Upland Habitat on the Shillapoo Wildlife Area
Sponsor: WDFW
Province: Lower Columbia
Subbasin: Columbia Lower
FY03 Request: $0
5YR Estimate: $515,310
Short Description: Maintain and implement measures to restore and enhance wetland, riparian, and upland habitat in the Vancouver Lake Lowlands area.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. This proposal requests no additional money in 2003 but does request funding for 2004 and 2005 to maintain and implement measures to restore and enhance wetland, riparian and upland habitat in the Shilapoo Wildlife Area (SWA) for various species of birds. The bird species were identified as 'indicator species" in the construction and loss assessments for Bonneville, The Dalles, and John Day dams. The SWA now receives O&M funding from BPA.

The SWA is located in the Vancouver Lowlands, and is intended to provide riparian, wetland, and oak woodland habitat. A former lakebed was drained and developed as agricultural land. A goal of the WDFW acquisition program is to acquire the entire former lakebed and restore it to its former species diversity and wetland functions for wintering waterfowl.

This appears to be a worthwhile project that will benefit wetland-dependent species in the Vancouver Lowlands. Areas targeted for restoration and specific restoration actions are clearly identified. An extensive M&E component includes five types of surveys. Monitoring of habitat and of wildlife response to changes in habitat will be done. The project has measurable indicators of success. The rationale for this project and significance to regional programs is clear. A complete history of land use in the area is provided. A HEP analysis was conducted in 1994-95.

The objectives and tasks are measurable and appear to have appropriate strategies, but a hydrologist should assess the re-watering techniques described. There appears to be a master plan for the vegetation desired. The proposal should address the degree of sensitivity of the master plan to its components: if one parcel of land is not acquired, or if cooperative agreements with Vancouver Parks are not achieved, how is the master plan affected?

The proposers should also discuss the predation threat to salmonids and potential for temperature traps represented by opening the connection to Shillapoo Lake, which is currently behind dikes.

ProjectID: 31033

Restoration of Columbia River Floodplain Functions to Steigerwald Lake
Sponsor: USFWS
Province: Lower Columbia
Subbasin: Columbia Lower
FY03 Request: $373,000
5YR Estimate: $2,262,000
Short Description: Reconnect Columbia River flows, restore riparian/wetland ecosystem functions, and improve salmon habitat on Steigerwald Lake and associated floodplain habitat.
Response Needed? No - Fundable
ISRP Preliminary Recommendation and Comments:
Fundable. This proposal has good potential for FWP benefits and would effectively reconnect a substantial wetland and lake with the Columbia River. The proposal has excellent cost sharing arrangements and would build on significant past investments by BPA for land acquisitions. The program structure is logical with assessments and planning leading to possible construction of flow controls in 2005. The costs for these activities are reasonable and a comprehensive monitoring and evaluation plan is outlined (to address pre- and post-development periods).

One point not emphasized in the proposal is the potential to restore another chum population in the lower Columbia River (Gibbons Creek). Chum salmon in this area exist as several population fragments and a restored population in this section of the river could be an important connection between populations below Bonneville Dam and those further downstream.

ProjectID: 199902500

Sandy River Delta Riparian Forest, Wetlands, and Anadromous Estuary Restoration
Sponsor: USFS-CRGNSA
Province: Lower Columbia
Subbasin: Sandy
FY03 Request: $162,000
5YR Estimate: $1,246,000
Short Description: Restore 600 acre island of rare Columbia River floodplain "gallery" riparian forest. Restore 200 acres wetland/associated upland habitat.
Remove 1930's dike from original Sandy River channel to restore hydrology and increase anadromous habitat.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. What is the current status of the fish populations in the old channel? A plan for monitoring fish utilization of the old channel following reconnection to the Columbia needs to be developed. The sponsors are asking for $800,000 for dike removal and access, yet the NEPA documentation and consequently approval for removal of the dike has not been granted. What is the prospect that dike removal would be approved?

ProjectID: 199206800

Implement Willamette Basin Mitigation Program
Sponsor: ODFW
Province: Lower Columbia
Subbasin: Willamette
FY03 Request: $1,567,500
5YR Estimate: $5,659,528
Short Description: Mitigate for impacts caused by hydroelectric facilities through enhancements, easements, acquisitions, restoration, and management of wetlands and other NWPPC target habitat types and species in the Willamette Basin in Oregon.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. The proposal is for a large-scale effort in habitat acquisition, enhancement, restoration and management in the Willamette Basin. The expectation is to add 200-300 HUs each year for 5 years through the implementation of 2-3 mitigation projects.

The background and significance to regional programs is clear and thorough. The project history provides some assessment of progress that the ISRP requested last year, although not quantified or presented in tables. Objectives list a rather complicated series of tasks related to project planning, implementation, O&M of existing projects, and monitoring and evaluation.

The response should discuss the appropriateness of the evaluation methods described. Past results should be quantitatively presented with more evaluation of progress. The response should also explain the budget numbers for tasks under Objective 1, which seem high.

ProjectID: 31013

Investigate Re-establishing Anadromous Fish Populations Above man-made Barriers
Sponsor: ODFW
Province: Lower Columbia
Subbasin: Willamette
FY03 Request: $221,977
5YR Estimate: $1,419,768
Short Description: Investigate the possibilities of re-establishing spring chinook and winter steelhead populations into historic habitat above impassable man-made barriers in the Willamette basin to link them with existing populations below barriers.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. Like the upper Cowlitz watersheds (proposals #31005, 31017) this proposal could have exciting research opportunities and utilize extensive habitats for re-establishment of spring chinook and winter steelhead production. A response is needed, however, as the proposal is technically inadequate and very short on details of methods and the budget (basis of the estimated values?). The presentation was slightly more informative but a technical review will require information on the availability of habitat, availability of fish for transport and release above the barriers, an experimental design to the research program, and a monitoring and evaluation program to assess effectiveness.

Numerous questions come to mind that are not addressed in the proposal:
How would “trapped-and-hauled” hatchery surplus adults be chosen with respect to adaptedness of run timing, spawn timing, embryo development, egg size, etc.? What is the genetic background of the surplus hatchery fish and would their release be consistent with ESA limitations? By what criteria would “best” potential reintroduction sites be chosen? By what criteria would available habitat be identified? How would re-establishment priorities be set? What impacts could these outplants have on resident fishes and where would risk of impacts be greatest?

These habitats that have been barren of Pacific salmon for years provide an important opportunity for study. Researchers could investigate several important issues including the role of marine derived nutrients in the ecosystem, reproductive success of hatchery-reared stocks in the natural environment, hatchery and wild interactions in the natural environment. However these studies would be seriously limited if downstream passage of the smolts were not effective. If naturalized fish cannot return to spawn then it limits what we can learn about the re-introduction of Pacific salmon. The ability to collect and transport smolts and adults may be a major factor in prioritizing study sites and programs. Is there any commitment by ODFW (or others) to establish smolt collection programs or will these fish simply pass over the dams or through the turbines? We need to know this before proceeding.

ProjectID: 31016

Calapooia River Flow Acquisition and Fish Passage Assessment
Sponsor: ODFW
Province: Lower Columbia
Subbasin: Willamette
FY03 Request: $53,500
5YR Estimate: $110,500
Short Description: Improve upstream passage for ESA-listed fish on the Calapooia River by reimbursing the owner of Thompsons Mills to not divert flows for power generation. Evaluate the effect of flow manipulation on upstream passage and fish survival.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. This project would improve fish passage around the hydroelectric facility at Thompson's Mills. The project proposes to improve flows through and below the fish passage facility at Thompson's Mills by paying the owner of the facility to not divert water during the late spring and early summer. This would improve passage for spring chinook and other species. The ISRP's central concern is the uncertain nature of the acquisition of Thompson's Mill. Unless the Mill or its water right is acquired, the money invested in the project would appear to have little long-term benefit to fish. What is the risk to native fishes if the passage improvement and water diversion is postponed until the Mill or its water right is acquired? Much of the documentation of the fish passage and survival problems presented in the proposal is anecdotal. Has there been some attempt to quantify the passage problems, status of populations in the basin, the availability of high quality spawning and rearing habitat above Thompson's Mills, and utilization of the Sodom ditch by migrating fishes. This information would provide useful background for the ISRP's review of the proposal. The applicants also need a more thorough description of how the success of the project will be evaluated.

ProjectID: 199205900

Amazon Basin/Eugene Wetlands Phase Two
Sponsor: TNC
Province: Lower Columbia
Subbasin: Willamette
FY03 Request: $60,650
5YR Estimate: $1,363,800
Short Description: Continue the restoration and enhancement of existing mitigation lands. Habitats being protected or restored include riparian zones of seasonal streams, wet prairie, upland prairie, forested wetland, oak woodland, and dry coniferous forest.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. This proposal is to continue enhancement of wildlife and aquatic habitat in the Willow Creek Natural Area. This 429 acre tract is part of a larger protected area totaling 1200 acres. The

proposal asks for funds to manage and restore habitats on a 99 acre parcel acquired in 2001 and to continue restoration on the remaining (earlier acquired) 330 acres.

The management goal is to maximize wildlife and biodiversity values on the site. The objectives address this overall goal but in a very general way. The response should present objectives that are more specific and measurable. The tasks, however, do contain measurable targets and specific methods.

Results of part restoration actions are briefly summarized. A more evaluative presentation of results assessing successes and failures would be more informative and should be presented. Reports documenting results are cited, but summaries of information contained in these reports should be included in the proposal. The presentation included graphs of results.

ProjectID: 200001600

Protect and Enhance Tualatin River National Wildlife Refuge Additions
Sponsor: USFWS/USGS
Province: Lower Columbia
Subbasin: Lower Columbia
FY03 Request: $256,000
5YR Estimate: $874,100
Short Description: Provide riparian, forested wetland, and off-channel emergent wetland backwater habitats for salmonid rearing and predator avoidance areas adjacent to the main stem Tualatin River. Acquired and restored lands are protected and maintained in perpetuity.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. This proposal is to acquire 20 acres, restore 230 acres, and conduct a research and monitoring program to determine off-channel habitat use of listed salmonid species. The proposal will also restore habitat by reversing hydrological alterations by installing levees and water control structures in off-channel areas to mimic natural conditions. The Tualatin River is a low-gradient shallow river whose riparian and wetland habitats have been significantly affected by heavy agricultural and urban use.

The proposal represents partnerships among various groups and organizations. A brief summary of work done to two parcels acquired in 1999 and 2000 is provided

The response should describe the additional benefits to fish and wildlife provided by these new parcels. What is the relative value of these parcels to salmonid habit in the TNWR? What is the justification for their acquisition? The photographs provided suggest that these parcels are situated to provide significant additional habitat benefits, but the proposal should detail the specific benefits expected.

The response should include more details of the restoration actions taken to date, and the methods in use to collect data to support a monitoring plan. Restoration methods under Objective 2 should be described in more detail. E.g. "…according to plans and designs…." (Task 2) is not adequate detail to understand the methods to be used. What are the components of the restoration plans?

Overall, good detail is provided on monitoring and evaluation. However the should address whether baseline data (pre-restoration) exist, and whether restoration objectives exist in a form that the M&E can assess progress toward their achievement. For the response, proponents should refer to the programmatic section of this report on prioritization of habitat restoration and acquisition projects, and on monitoring and evaluation, specifically with regard to use of standard regional protocols.

ProjectID: 199107800

Burlington Bottoms Wildlife Mitigation Project
Sponsor: ODFW
Province: Lower Columbia
Subbasin: Willamette
FY03 Request: $110,000
5YR Estimate: $772,610
Short Description: This project protects, maintains and enhances a diverse array of wetland habitats for many species of fish and wildlife including the state listed western painted and pond turtles and ESA species including bald eagles and salmon.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. This proposal is to implement the five-year management plan (completed in 2001) for fish and wildlife wetland habitats at the confluence of the Columbia, which is likely the most critical habitat in the Portland metropolitan area.

The proposal is well written, containing adequate detail of the water management plan and various aspects of monitoring. However, several ISRP FY00 comments remain unaddressed; specifically, provision of data summarizing the plant and wildlife surveys, a discussion of the value of the site to fish species, and an evaluation of the length of time requiring funding for the control of non-native species. These questions should be addressed in the response. Additionally, the response should provide more detail on the species that will be affected by opening more wetland habitat. For the response, proponents should refer to the programmatic section of this report on monitoring and evaluation, specifically with regard to use of standard regional protocols.

ProjectID: 31010

Re-open Off-channel Habitat for Lower Columbia ESU
Sponsor: ESA Program
Province: Lower Columbia
Subbasin: Willamette
FY03 Request: $449,000
5YR Estimate: $589,000
Short Description: Eliminate velocity barriers to off-channel habitat, facilitate passive restoration for listed species within the Lower Columbia ESU
Response Needed? No - Not Fundable
ISRP Preliminary Recommendation and Comments:
Not fundable. The proposal does not provide details on objectives, tasks and methods. The presentation provided some information on monitoring but the monitoring tasks should have been described in the proposal. The benefits to fish and wildlife appear marginal and are not justified in the proposal. The baseline conditions are not established. The impacts on existing species are not adequately described.

ProjectID: 31011

Renaturalize Functional Floodplain Habitat within the Portland Reach of the Lower Willamette River
Sponsor: COP
Province: Lower Columbia
Subbasin: Willamette
FY03 Request: $524,500
5YR Estimate: $865,500
Short Description: Restore river/floodplain habitat diversity in an urbanized, channelized reach of the Willamette River by adding river alluvium, plant materials and large wood in an existing shallow depositional area. This is one component of a larger project.
Response Needed? No - Not Fundable
ISRP Preliminary Recommendation and Comments:
Not fundable. The potential benefits to fish and wildlife are not apparent. The risks to migrating salmon associated with the proposed project are probably as likely as any benefits. The survival rates of salmon transiting through the City of Portland are not provided and no case is made that salmon would benefit from the project. There is no quantification or summarization of the environmental, social, and economic benefits from the proposed private-public partnership.

COWLITZ PROPOSALS

ProjectID: 31005

Incorporating Pit Tag Technology to Evaluate and Monitor the Reintroduction Effort for Anadromous Salmonids in the Upper Cowlitz Watershed
Sponsor: WDFW
Province: Lower Columbia
Subbasin: Cowlitz
FY03 Request: $257,130
5YR Estimate: $971,730
Short Description: We propose to update pit tag system to basin ISO standards at the Cowlitz Falls Dam and Fish Facility and use pit tags to monitor and measure collection, collection efficiency, smolt production, and a prototype surface collector entrance.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. This proposal is part of a larger initiative to improve collection and passage efficiency of salmonids at the Surface Collection and Fish Facility at the Cowlitz Falls Dam. BPA funded the completion of this facility in 1996 marking the beginning of a unique opportunity to restore anadromous salmonids to an estimated 240 miles of productive habitat in the upper Cowlitz and Cispus watersheds. Based on recent success in juvenile production from those watersheds, the proposal states "upper Cowlitz and Cispus Rivers clearly are still capable of producing significant numbers of salmonid smolts. Pathological examinations of smolts have found them healthy, robust, and typically disease free." However, downstream of the Cowlitz Falls dam, the downstream passage of smolts is blocked by Riffe Lake and two more dams. Smolts are collected at Cowlitz Falls dam and transported to the lower Cowlitz for release. If smolts are not collected they are likely lost to production in Riffe or Scanewa lakes. Collection efficiency at the Fish Facility though is well less than the target of 95% and efforts are planned to re-design the entrance of the surface collector. Installation of the pit tag detection system would enable the researchers to use pit tags to:
1. Reduce our sampling rates to monitor and enumerate the smolt collection to low levels and reduce the numbers of fish exposed to the stresses of handling and sampling;
2. Monitor smolt emigration, timing and smolt yields from the upper watershed;
3. Measure collection efficiency and estimate total smolt production from the upper watershed, critical to monitor the reintroduction effort over time;
4. Measure the response to modifications and improvements to the collection system, which are critical to achieving self-sustaining populations in the upper watershed.

The upper Cowlitz watershed apparently shows excellent potential for the Anadromous Fish Reintroduction Program. This proposal would provide an assessment tool for development of an improved surface collection design and for assessment of production from the upper basin. The combination of the collection system and the need to transport all adults into the upper basin for spawning provides a unique opportunity to examine salmon restoration and the productivity of "hatchery" based brood stock allowed to spawn naturally in a barren habitat (Section 9c in proposal). The system for study would be essentially "closed" (no input or output without monitoring), provides highly productive natural habitat, and would have good evaluation capability with this PIT development at the Fish Facility.

The following comment also applies to project 31017 and a joint response is likely warranted. A response is requested on how the Anadromous Fish Reintroduction Program is being evaluated. This project could potentially be very worthwhile but its value needs to be assessed within the context of the evaluation, what are the objectives of the evaluation, what are the results of the evaluation to date? The ISRP would strongly recommend the development of an experimental design to utilize this unique opportunity. Further, the PIT equipment would provide the tool for assessing collector designs but what is being done to re-design this system for improved efficiency?

BPA has already invested heavily in the Cowlitz watershed by building the Fish Facility ($22 million) but this proposal has good cost sharing and local support. There is an opportunity for exciting and informative research programs concerning salmon restoration, role of nutrients in the ecosystem, and hatchery versus wild comparisons in the upper Cowlitz watershed.

ProjectID: 31017

Monitor and evaluate the success of hatchery salmonid reproduction for reintroduction of anadromous salmonids to the upper Cowlitz Basin
Sponsor: WDFW
Province: Lower Columbia
Subbasin: Cowlitz
FY03 Request: $183,661
5YR Estimate: $1,100,161
Short Description: Monitor the success of the reintroduction of anadromous salmonids to the upper Cowltiz Basin, including distribution, timing and success of reproduction of hatchery adults and success of upper basin seeding.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. This project has potential to answer basin-wide questions about the efficacy of supplementation strategies in the restoration of salmonid populations. One strategy for establishing salmon above the dam is to transport mature adults above the dam. Some of these fish will be offspring of naturally spawning fish above the dam (NORs) but some will be offspring of hatchery spawnings (non-"acclimated" [sic], HORs). Why wouldn't a strategy of relying strictly on NOR adults be more successful?

A source of mortality for these fish is recreational harvest. What is the justification for allowing harvest of these fish transported above the dam if their purpose is to establish a reproducing, naturally adapted population? Isn't the harvest of NOR adults particularly detrimental to the strategy? What is the experimental design for estimating the proportion that fall back below the dam? What will be the power to estimate the loss rate of the single-season-per-species telemetry studies?

One of the goals is to establish index sites for estimating spawning escapements, particularly of steelhead and coho; why wouldn't a random sampling scheme (e.g. EMAP) provide a more accurate estimate of spawning escapements?

Another strategy for establishing salmon above the dam is to transport fry and fingerling produced in a hatchery above the dam, a version of supplementation strategies in other parts of the basin. These HOR

salmon may, probably do, interact detrimentally with NOR fry and parr above the dam. What is the rationale for inducing these detrimental interactions? What is the extent of these interactions? How is the continued introduction of HOR fry and parr justified when NOR salmon are present?

See also comment in 31005: "The following comment also applies to project 31017 and a joint response is likely warranted. A response is requested on how the Anadromous Fish Reintroduction Program is being evaluated. This project could potentially be very worthwhile but its value needs to be assessed within the context of the evaluation, what are the objectives of the evaluation, what are the results of the evaluation to date? The ISRP would strongly recommend the development of an experimental design to utilize this unique opportunity..."

ProjectID: 31020

Monitor Coweeman River Salmonid Populations
Sponsor: WDFW
Province: Lower Columbia
Subbasin: Cowlitz
FY03 Request: $277,962
5YR Estimate: $1,009,366
Short Description: determine freshwater productivity and marine survival of wild tule fall chinook and wild winter steelhead to develop risk assessments and recovery actions for these ESA listed populations
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. The sponsors propose to install traps to obtain a more accurate estimate of the abundance of adult fall chinook and steelhead, and production of smolts. This goal seems worthwhile because the Coweeman stock of fall Chinook is used as an index stock for developing harvest rates for Lower Columbia ESU fall Chinook salmon. The stock is managed for natural production and has very few hatchery fish noted; the stock of Tule fall chinook in the Coweeman River is apparently genetically distinct from other Tule chinook. If this is truly a natural population of fall chinook, it is one of only two in the lower Columbia River (Lewis River is the other). Justifications for the program seem appropriate, and there are excellent multi-species returns for a small system. This proposal could become one of the better assessment programs in the lower Columbia.

It is unclear how adult steelhead will be monitored. The sponsors mention, in passing, something about a temporary weir. The genetic aspects of the proposal are particularly perplexing, and the methods for distinguishing naturally spawning hatchery fish from “wild” fish are unclear. The sponsors propose to develop a stock-recruitment relationship by measuring smolt production over a ten-year period and estimating recruits from the smolt production data using marine survival estimates. The sponsors need to justify why a reliable stock-recruitment relationship can be developed with this method using only ten data points, especially given variability in marine survival. How will the age structure of the recruits be estimated from the smolt production data? What evidence is there (or feasibility test) that sufficient natural chinook smolts can be coded-wire tagged via a screw-trap program?

In the budget, why would Planning and Design costs remain inflated for each of 5 years.

OTHER LOWER COLUMBIA PROPOSALS

ProjectID: 31029

Clark County ESA Outreach Program
Sponsor: Clark County, Washington
Province: Lower Columbia
Subbasin: Columbia Lower
FY03 Request: $205,000
5YR Estimate: $813,000
Short Description: Work with willing landowners to develop, record and implement stewardship plans on 5 to 20 acre rural residential parcels in priority watersheds.
Response Needed? No - Not Fundable
ISRP Preliminary Recommendation and Comments:
Not fundable. This proposal is to work with landowners to implement stewardship plans for riparian habitat restoration on small rural residential parcels in Clark County priority watersheds. It extends the Clark Conservation District's farm plan project into rural residential areas. Currently, Clark County habitat protection ordinances are applied only when landowners voluntarily change land use and become subject to development permitting requirements. Many parcels are already developed to the limits of the zoning code. There are approximately 3700 of these parcels over 1500 miles along priority streams.

The goal of the project is to create a series of functional riparian areas that generate more riparian habitat. It will develop stewardship plans along 100 of the 1500 stream miles. The proposal does not indicate whether this is enough to establish connectivity.

Objective 4 is to develop an incentive package to encourage landowner participation. The proposal does not make a convincing case that this approach is the only or best alternative. It lacks detail as to the nature of the incentives and is not specific about what "review the possibilities" to determine political and fiscal implications means. If tax or permitting incentives are a possibility, wouldn't an ordinance change also be possible?

According to the proposal, The Lower Columbia Fish Recovery Board is charged with developing a recovery plan for listed fish in this region, and will assign the responsibility for various actions to the entities with authority over those actions. Clark County has authority over land use decisions but rather than create new land-use requirements it is taking the more politically feasible approach of offering financial incentives for improved riparian practices.

ProjectID: 31022

Establish a Water Cleanup Plan (temperature TMDL) for the East Fork of the Lewis subbasin
Sponsor: Ecology
Province: Lower Columbia
Subbasin: Lewis
FY03 Request: $118,000
5YR Estimate: $168,000
Short Description: Expedite development of a water cleanup plan-TMDL for the East Fork Lewis to identify sources of pollution related to temperature, DO and pH; allocate maximum allowable pollution from various sources; and develop strategies to improve salmonids habitat.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. The sponsors propose to assess thermal heterogeneity using FLIR, validate the FLIR results using in-stream temperature data loggers, and input the data into a heat source model. The results will be used to inform stakeholders and develop a plan to improve water quality. The sponsors propose to involve stakeholders in plan development. The proposal would benefit from more detailed documentation of the problem. The sponsors should report what is known about thermal patterns in the East Fork and any

evidence (data) they have that temperature is a major factor limiting salmonid production. The methodology needs to be more detailed. Why is FLIR needed rather than just using instream data loggers? When and often will the FLIR flights be undertaken? How many data loggers will be placed in the river and for how long? More detail is needed on the modeling component. What temperature model will be used? What are the inputs and outputs and how do these relate to the data that will be collected? At what spatial scale will the model be applied? What, specifically, will the model be used for? Some discussion of the potential for improving water temperature within the East Fork also would be helpful. Will it be practical to institute the needed land use and management changes? Is there a commitment from the USFS and private landowners to make the necessary changes?

ProjectID: 31023

Stream Gaging Installation and Operations in the Lewis, Salmon/Washougal, and Gray/Elochoman Subbasins
Sponsor: Ecology
Province: Lower Columbia
Subbasin: Cowlitz
FY03 Request: $395,000
5YR Estimate: $593,000
Short Description: Purchase and install eight continuous, real-time, telemetered stream flow gages, and six staff gages, at critical reaches and tributaries in each of the three subbasins.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. This proposal is to purchase and install 14 stream gages in 3 subbasins critical to anadromous fish. The gages will put on 8 continuously measured sites and 6 instantaneously measured sites in each subbasin. They will fit into and expand the network of WA stream gages to provide data needed to support a variety of water and salmon initiatives. The single objective of the project is to provide stream flow data with a resolution appropriate to water and salmon protection and restoration initiatives and proposals.

The proposal appears to be a reasonable request to improve quantification of stream flow in these rivers. The strategy is described as providing gages at critical reaches and tributaries in each of the three subbasins.

However, more information should be provided as to how the critical reaches/tributaries will be chosen, the marginal addition in monitoring they will provide, and why the combination of 8 continuous/6 staff gages was chosen. How will the eight flow gages and six staff gages be distributed among the subbasins? How will the sites be chosen? Is there a priority plan already in place? Are the monitoring sites selected based on existing fish use or potential fish use? Do other gages in place also provide continuous data? What is the relevance of the 6 cross-channel measurements to be taken annually? What are the potential fish benefits?

ProjectID: 31004

Salmon Carcass Enrichment -- Willamette (Clackamas) & Sandy Subbasins
Sponsor: USFS
Province: Lower Columbia
Subbasin: Willamette
FY03 Request: $509,858
5YR Estimate: $1,607,327
Short Description: Multi-year salmon carcass enrichment project applied over entire 5th field watersheds (with replicates and controls) aimed at restoring native runs of salmon and steelhead in the Clackamas and Sandy rivers.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. The sponsors should address the following questions:

1. What is the unique contribution of this project compared to the other projects on carcass placement and nutrient enrichment? Such as those in Canada, Washington, and those funded through the Fish and Wildlife Program's innovative review process. Go to www.nwcouncil.org/innovative and see projects 200105500, 200101300. Is there some attribute of this project, some synergy, that makes it very fundable? The "innovative" projects are pilot studies to test the efficacy of nutrient supplementation before proceeding with other studies and implementation.

2. What is the direct evidence suggesting that nutrient deficiencies in these streams are a major limitation for salmon production?

3. The sponsors propose to compare smolt production before and after carcass addition. Pre-treatment evaluations occurred over 1-5 year period, depending on the watershed. Given inter-annual variability in smolt production that could arise from variation in stream conditions and adult returns, is the pretreatment evaluation of sufficient duration to provide meaningful comparison with post-treatment smolt production?

4. Although the "control" and "treatment" watersheds were randomly selected, they are few in number (five treatments and three controls). How do the watersheds compare with respect to physical parameters such as watershed size, stream size, gradient (long profile), hydrograph, land use patterns, and especially nutrient loads, and biological parameters such as adult returns, juvenile growth and survival, rearing areas, and smolt size and production?

5. How far from estimated carrying capacity are the current populations of anadromous fish?

6. How will carcasses be dispersed throughout the watersheds? Will they be dispersed evenly, systematically or clumped in particular locations? How long are the treatment reaches?

7. The sponsors wish to achieve a saturation level of N15 enrichment. What is the evidence that these streams were saturated historically?

8. The sampling design needs to be described in more detail. Where will the biological samples be taken within each watershed? How many sampling locations in each watershed? How many samples will be taken at each location?

9. What will be the impact of nutrient addition on fish species other than salmon such as cutthroat trout? Are there exotic species in these watersheds that could benefit from nutrient addition?

10. How will the data be analyzed?

ProjectID: 31012

Leveraging Conservation Easements for Fish and Wildlife in the Willamette Basin
Sponsor: CPRC&D
Province: Lower Columbia
Subbasin: Willamette
FY03 Request: $68,090
5YR Estimate: $374,660
Short Description: Leveraging conservation easements for fish and wildlife protection in the Willamette Basin
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. The proposal cites a lack of adequate state and federal programs to provide options and incentives for landowners to enroll in conservation easement programs. It proposes to develop a conservation easement program along the Willamette River from Corvallis to Harrisburg, an area of large-scale farms with low enrollment in USDA CREP and WRP. This proposal is to have a landowner-developed easement program that protects long-term farming interests while meeting riparian protection objectives.

The program proposed would differ from USDA programs in several ways: it would operate under a sliding scale of value according the uses allowed of the land. The land closest to the river would be placed into permanent native vegetation, with land away form the river allowed to be used for some farming. The gradient of uses would vary from farm to farm. A variety of funding sources is identified. The rationale for the Corvallis to Harrisburg target area is that this area has been identified as the most important for biodiversity given historical river patterns.

The main objective of the proposal is to develop an easement and acquisition program that will be used by landowners in the identified reach to enhance and protect riparian buffers. Once an easement program is developed, the project will implement the program with at least four landowners. Monitoring and evaluation of the project will be funded by a grant from the National Fish and Wildlife Foundation.

The proposal should better explain why this program is necessary given that the opportunity exists for landowners to participate in incentive programs such as CREP. The major reason given in the proposal is landowner distrust of government, but a more thorough justification should be provided. Many landowners across the state participate in state and federal programs. What attributes of the USDA riparian protection programs are deemed inadequate for this area? How would the proposed approach address those inadequacies? How will this program differ from CREP and other state and federal landowner incentive programs? How will the proposed program meet conservation objectives? What are the oversight and easement requirements?

What are the benefits to fish and wildlife? Will the standards for participation in the program be comparable to those of federal and state programs? Will the program be more flexible than state and federal programs? What sort of oversight will occur? The sponsors also need to provide a general statement of the guiding principles and standards for the landowner-developed program.

ProjectID: 31025

Construct Fish Screen and Fish Passage Improvements at Lebanon Diversion Dam on South Santiam River
Sponsor: City of Albany, Oregon
Province: Lower Columbia
Subbasin: Willamette
FY03 Request: $420,000
5YR Estimate: $3,544,000
Short Description: Design and construct an intake fish screen to prevent fish from entering the unprotected Albany-Santiam Canal, and modify existing Lebanon Diversion Dam on South Santiam River to improve fish passage.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. The project proposes to screen the intake of a water diversion canal and improve the 80-year-old fish passage facilities at the Lebanon dam. What data is available demonstrating fish use of the diversion canal and fish passage problems? How many smolts are currently being entrained in the diversion canal? Has smolt survival in the canal been measured? The sponsors need to provide more information on the fish runs that would benefit from the improvements. In particular, what is the status of the naturally spawning populations and their habitats in the section of river above the diversion dam? Will this project mostly benefit hatchery runs of summer steelhead and spring chinook? Does the current fish ladder meet NMFS standards?

ProjectID: 31028

Replace Upper and Lower Bennett Dam Fish Ladders in the North Santiam River at Geren Island (Stayton Island)
Sponsor: City of Salem, Oregon, a municipal corporation
Province: Lower Columbia
Subbasin: Willamette
FY03 Request: $200,000
5YR Estimate: $400,000
Short Description: Replace two fish ladders to improve fish passage. Provide: updated fish collection/counting facility at each, supplemental flow at entrance of each fish ladder to improve attraction for fish, and additional entrances to fish ladders at base of dam.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. The sponsors propose to replace the ladders, with a provision for improving the fish trapping/counting facility. Given the apparently large runs on the North Santiam, what evidence suggests that there is a passage problem? Do the fishways meet NMFS standards? A better technical justification of the need for this project needs to be provided. The sponsors also need to provide more information on the fish runs that would benefit from the improvements. What is the status of the naturally spawning populations and their habitats in the section of river above the Bennett Dam? Will this project mostly benefit hatchery runs of summer steelhead and spring chinook?

ProjectID: 31030

Santiam Water Control District Fish Screen and Passage Project
Sponsor: SWCD
Province: Lower Columbia
Subbasin: Willamette
FY03 Request: $350,000
5YR Estimate: $350,000
Short Description: Protect fisheries resources, especially threatened and endangered species by planning, design, construction, and maintenance of a fish screen, fish bypass and fish barrier on the SWCD canal (N. Santiam River) in Stayton, Oregon.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. While the proposal indicates that substantial planning for the construction of the facilities have been conducted, the proposal provides no information on the scale of the problem for FWP to be addressed by this proposal. A response is needed concerning what makes this a priority screening project (stated top 5 priority in Oregon)? The proposal requests funds for construction and refers to monitoring and evaluation but no methods are described. The proposal does show excellent cost sharing. Unfortunately, there is nothing for the ISRP to review technically and to comment on … until we receive a revised and more informative proposal.

ProjectID: 31018

Willamette Basin Riparian Project
Sponsor: Marion SWCD
Province: Lower Columbia
Subbasin: Willamette
FY03 Request: $784,765
5YR Estimate: $2,341,435
Short Description: Implement riparian buffering program using cost-share provided by USDA, state of Oregon and private landowners, including urban areas trials. Conduct restoration project planning and implementation with watershed councils, landowners and other interests.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. This proposal is to implement a riparian buffer program in the Willamette lowlands, with cost-share from USDA, Oregon, and private landowners. The project goal is to establish 500 planting projects on targeted streams over three years to redress riparian habitat problems on private lands. The projects will also address other causes of degraded habitat and fish populations beyond those remedied by the riparian planting. The overall objective is riparian restoration of the lowlands, where agriculture is the predominant land use, through immediate buffering and longer-term cooperative restoration planning.

Good background to the problem is given. More than 90% of the riparian land in the basin is privately owned, valuable agricultural land. The basin holds 69% of Oregon's population, expected to double in the next 25-50 years. Critical problems for fish habitat include water pollution, increased peak and reduced base flows, channel erosion, channelization, reduced habitat complexity and availability. Problems include riparian and aquatic habitat loss, sedimentation and erosion, water quality (temperature) and a loss of off-channel habitat. Much of the mainstem and its tributaries are 303(d) listed as impaired due to high summer water temperatures.

The proposal provides a convincing rationale for the benefit of both riparian buffering and project-level restoration planning, and their connection to various basin-level needs identified in numerous plans. In addition to riparian buffering of agricultural lands through USDA incentive programs, the proposal also describes pilot project riparian buffering of rural residential and urban lands for which USDA CRP And CREP programs do not exist.

The proposal describes an ambitious, well-networked project, coordinated among several Willamette Valley SWCD's, with compelling leverage of funds.

One objective of the project is to enroll about 375 landowners in the CREP covering 75 stream miles. How was this target number identified? Were the riparian sections prioritized? What proportion of total riparian mileage in the Willamette Lowlands does 75 miles represent?

A second objective is to enroll 125 rural and urban landowners who are CREP/CRP ineligible in riparian buffer projects along about 20 stream miles. The proposal states that these sites will be "equitably distributed" – what does this mean? Were targeted areas identified through a priority setting process or do they depend more on the identification of willing landowners? If the latter, how can the benefits to fish and wildlife be anticipated? The presentation indicated that enrollment will be distributed across watershed councils. Will this approach result in fragmented, ineffective riparian buffers across the subbasin? How will the project address the need for habitat connectivity?

The M&E efforts need to be more thoroughly explained, particularly concerning responses of the fish community to restoration activities. It is difficult to see how the efficacy of riparian techniques will be demonstrated with respect to fitness of fish. For example, what will be the involvement of fish management agencies in M&E? The project, at least implicitly, seems to be relying on "active," engineered approaches to restoration. Will there be a role for more passive (i.e., operation of natural processes) restoration? How will the two modes of restoration be reconciled? For the response, the proponents are referred to the programmatic section of this report, specifically on monitoring and evaluation and prioritization of habitat restoration projects.

The proposal states that the restoration planning, because it takes place on rural/urban residential/agricultural private land, will place a premium on "developing socioeconomic insights": what specifically does this mean?

ProjectID: 199607000

McKenzie River Focus Watershed Program Coordination and Habitat Restoration
Sponsor: MWC
Province: Lower Columbia
Subbasin: Willamette
FY03 Request: $325,000
5YR Estimate: $1,945,000
Short Description: Continue McKenzie River Focus Watershed Program Coordination. Develop, coordinate, plan, design, implement and monitor habitat protection, restoration and water quality projects; improve resource stewardship through public outreach and education.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. This proposal is to continue to coordinate the McKenzie River Watershed Program. BPA funds are used primarily for coordination, with other funds used for a variety of implementation projects. Activities include the design, implementation and monitoring of habitat and water quality projects, as well as outreach education. Having completed a number of baseline assessments, the Watershed Council plans to increase its protection and restoration activities in 2003.

The proposal presents a clear and thorough description of the background to the watershed council and its significance to regional programs. The council's activities are well connected to those of related groups and projects. A good history of projects and achievements is presented.

Objectives are listed under planning and design, construction and implementation, operation and maintenance, and monitoring and evaluation. Part of the budget increase is to hire new staff to increase the number of implemented projects.

The description of monitoring and evaluation lacks specifics; for example, how will project implementation and effectiveness be monitored? Effectiveness monitoring - riparian planting (implementation, and how well are plants surviving) - does not seem to have fish monitoring, but should. For the response, the proponents are referred to the programmatic section of this report, specifically on monitoring and evaluation.

ProjectID: 31002

Wildlife Habitat Protection, Lower McKenzie Watershed (Jaqua)
Sponsor: TNC
Province: Lower Columbia
Subbasin: Willamette
FY03 Request: $2,321,025
5YR Estimate: $3,300,501
Short Description: Acquire a wildlife habitat conservation easement over 1240 acres of oak savanna and woodlands, Douglas fir forests, and grasslands to benefit listed and target species in the Lower McKenzie River Watershed.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. This proposal is to acquire conservation easements over 1240 acres to protect habitat for several bird and animal species. The land is in the Coburg Hills of the Lower McKenzie. An initial habitat assessment has been performed.

Reference is made to the 80000 HUs lost to hydropower in the subbasin. The proposal makes the point that the upper portion of the Basin has received significantly more wildlife habitat mitigation than the lower portion, even though the lower Basin is subject to rapid land use conversion. Restoration actions in the Willamette subbasin have concentrated on the lower elevations. However, oak savanna and prairie habitat, the focus of this proposal, have been identified as priorities for conservation. The proposal lists species to be protected by these easements, but indicates that detailed wildlife surveys have not yet been conducted. Fish habitat protection afforded by this project would be minor. The site is currently subject to subdivision, threatening to fragment the habitat.

Better justification for purchase of this property, the easement approach, and the price is needed. Why are conservation easements the best approach? What are the alternatives to spending $2.2 million? How is this value derived? At $1,815 per acre, shouldn't an outright purchase (rather than easement) be possible? What, exactly, is a wildlife mitigation easement? How much of the habitat type represented by the property still exists within the lower Willamette Valley? What will be the authorized uses of the parcel?

Other questions relate to how this proposal fits within the larger Willamette Subbasin context. Is the purchase of this land a part of a larger landscape-scale plan for wildlife habitat protection within the lower Willamette? If so, exactly how does purchase of this parcel fit into the plan? Is this an isolated patch of habitat or are there other patches of similar habitat nearby? Data should be presented documenting the occurrence and abundance of the species that will benefit from his purchase, especially the listed species. . What is the status of the potentially benefited species within the lower Willamette (the state and federal designations given in the table need to be explained)? Where are the four viable populations of Fender's Blue located? Is there connectivity between the populations? Has a VPA been performed on any of the species to formally assess their status? How much area is needed as a buffer?

The restoration goals for the parcel are unclear. The oak savanna and dry prairie appear justified in terms of rarity, but better justification needs to be provided for the acquisition of oak and pine forest which do not appear to be scarce. Monitoring needs to be better described in terms of how it will lead to evaluation of progress toward stated habitat objectives, rather than monitoring for unauthorized uses.

ProjectID: 31007

Distribution and seasonal habitat use of ESA-listed salmonid species in City of Portland tributary streams
Sponsor: COP
Province: Lower Columbia
Subbasin: Willamette
FY03 Request: $62,000
5YR Estimate: $124,000
Short Description: Determine the distribution and seasonal habitat use of listed salmonids in City of Portland watersheds. Use information to guide development of a recovery plan, determine necessary protective measures, and monitor effectiveness of protective measures.
Response Needed? Yes
ISRP Preliminary Recommendation and Comments:
A response is needed. The sponsors need to provide a better description of the reaches that will be sampled, their size, and location. What is the rationale for selecting the sampling reaches? Will the sampling design adequately determine the extent of utilization of the lower tributary reaches by juvenile salmon? How often will each reach be sampled in each season? What will be done with the information once it is collected? Will presence/absence and abundance be related to habitat conditions? A more thorough description of the habitat sampling design, methods, the kinds of data collected, and the scale of the data (i.e., valley segment scale, reach scale, channel unit scale, etc.) is needed. Will habitat be sampled concurrently with fish sampling or will the information from habitat sampling in 2001 be used? Strong justification is needed for relating habitat data collected in 2001 to fish abundance data collected in 2002, especially at the channel unit and microhabitat scale. Sampling (both fish and habitat) in fall, winter, and spring is essential to determine utilization by juvenile migrants. Although there are logistical difficulties and safety concerns involved with sampling streams in the fall, winter, and spring, as the proposal acknowledges, the ISRP is uncertain about the City's commitment to fall, winter, and spring sampling. Sampling in the fall (e.g., October), especially, should not be problem. A thorough discussion of how the data will be analyzed is needed. The method of estimating abundance will be based on correlations of abundance with surface area. How will the correlations be used to decide which method to employ to estimate abundance? Will correlations of abundance and sampling unit volume be examined? Why not estimate abundance in several different ways (habitat unit, area, volume)? What does an IBI in a highly disturbed habitat provide?