

Lower River Tribe MOA--Existing Projects with In-Lieu Issues* Last Updated: 5/7/09

* Attachment H addresses projects previously identified as having in lieu issues, and includes some new projects for which a preliminary assessment raised potential in lieu issues. Attachment H may be revised in the future to address any additional in lieu issues, as needed, for new activities funded under this agreement

Current Basin partners and funding										
Sub-basin	Title	BPA Project #	Organization	Type	BPA est. funding (10 year Annual average)	Entity	Project/ Action	Type	Funding	Frequency
Deschutes	Deschutes River Sockeye Development	200830700 * NEW	CTWSRO	RME	\$167,455	CTWSRO	Implement habitat projects for chinook and steelhead recovery in the Shitike and Warm Springs watersheds. Funds include OWEB, PRB, ATI settlement.	Habitat	\$454,000	over 5 years
	Deschutes River Fall Chinook Research and Monitoring	200830600 * NEW	CTWSRO	RME	\$198,716	CRITFC, PCSRF, SBF	CRITFC (\$50K), PCSRF (\$69K) and SBF(\$132K) work on developing biologically based escapement goals for Deschutes R. fall Chinook.	RME	\$251,000	spread over two years
						PCSRF	PCSRF funding for current spring Chinook habitat projects in the Deschutes Basin.	Habitat	\$87,000	average per year
						PCSRF	Currently, there is partial funding with PCSRF to collect recovery plan information on the Deschutes westside summer steelhead population.	RME	\$80,000	for two years
						USFWS	USFWS funding current spring Chinook projects in the Deschutes Basin.	Habitat	\$250,000	spread over 5 years
						USFWS	For bull trout genetic analysis in the Deschutes Basin.	RME	\$14,000	one time
						USFWS	Partnership HCP planning grant for habitat conservation plan funding for steelhead and bull trout above the Pelton-Roundbutte complex.	Administration	\$306,000	for 1 year study
						USFS	Improving habitat and passage on Federal lands for chinook, steelhead and sockeye and bull trout.	Habitat	\$721,777	to implement by 2009
						NRCS	Provides technical assistance for habitat projects on the reservation and varying watershed restoration implementation dollars.	Habitat	\$90,000	annually
						ODFW	ODFW spends \$50K for <i>O. nerka</i> management in the reservoir and partners with CTWSRO and PGE for escapement estimates on spawning grounds (\$20K).	RME	\$70,000	annually
						ODFW	ODFW currently operates a trap at Sherars Falls collecting information on fall chinook passing upstream of the falls for upriver escapement estimates (\$50K).	RME	\$50,000	annually
						Upper Deschutes Watershed Council	Upper Deschutes Watershed Council habitat and passage projects for improving spring Chinook habitat steelhead and sockeye habitat in Deschutes Basin above Pelton -Roundbutte hydroelectric facility (Funding primarily through Pelton Roundbutte Fund and OWEB Strategic investment program).	Habitat	\$2,640,000	spread over 4 years
						Crooked River Watershed Council	Habitat work in the Crooked River subbasin to improve steelhead production during the reintroduction above Pelton -Roundbutte Dam. (Funding primarily through Pelton-Roundbutte Fund and OWEB Strategic investment program).	Habitat	\$1,300,000	spread over 4 years
					Deschutes Basin Board of Control	Piping and screening irrigation canals throughout the Upper Deschutes by seven separate irrigation districts for protecting steelhead and chinook habitat for the reintroduction above Pelton-Roundbutte hydroelectric complex.	Habitat	\$20,000,000	five year implementation time frame	
					PGE	Working with PGE to reintroduce spring chinook above the Pelton Roundbutte complex. PGE contributing \$80M to build a fish transfer facility. Providing an additional \$250K annually for their staff to implement testing and verification studies for steelhead, chinook, sockeye, and bull trout.	Construction/ RME	\$ 80,000,000 + \$2,500,000 (over the ten year MOA period)	\$80 million for construction \$250,000 annually for 25 years	
					Deschutes River Conservancy	Deschutes River Conservancy, \$220K for instream flow rights along Whychus Creek; benefiting Deschutes westside steelhead population (funding primarily through Pelton-Roundbutte Fund and OWEB Strategic investment program).	Habitat	\$220,000	spread over 4 years	
					Deschutes Basin Land Trust	Deschutes Basin Land Trust (\$250K, easement purchases) along Whychus Creek (funding primarily through Pelton Roundbutte Fund and OWEB Strategic investment program).	Habitat	\$250,000	spread over 4 years	
John Day	Improved Escapement Estimation	200851300 * NEW	CRITFC	RME	\$70,000	WSU, OSU, UW, NOAA	Entities are conducting quantitative studies (\$250,000/year) of how genes are being expressed under different environmental conditions, such as thermal tolerance, toxicity, immune responses, etc. The cumulative results of individual studies will allow managers to develop genetically credible conservation strategies.	RME	\$250,000	estimate per year
Systemwide	Habitat Validation Monitoring (formerly Water Quality Monitoring)	200851200 * NEW	CRITFC	RME	\$175,000	ODFW, IDFG, WDFW, CRITFC	Agencies routinely sample commercial and sport catches of salmon to update run size estimations and catch composition and harvest rates. Analyzing these data and creating metrics for decision making involves 6-10 full and part time FTEs and costs the agencies at least \$500,000.	Harvest/ RME	\$500,000+	estimate per year
	Expression of Traits Related to Recovery	200851900 * NEW	CRITFC	RME	\$100,000	ODFW, WDFW, ID OSC	Agencies are measuring on-the-ground conditions in specific areas to validate estimates of habitat conditions derived from remote sensing and habitat models. The states of Oregon, Washington and Idaho spend an average of \$1,169,371 of PCSRF funds and \$461,507 of state funds (39% cost share) to restore and monitor habitat conditions in the Columbia Basin. Additional efforts will provide a broader baseline of current conditions to provide a benchmark against which to measure habitat improvement over time.	Habitat	\$2,000,000+	estimate per year
	Landscape Genetics (Ch & STHD)	200852100 * NEW	CRITFC	RME	\$40,000	NOAA, WDFW, OSU, ADFG, PSC	Agencies are cooperating to create a genetic baseline (\$600,000/year) for key salmon populations for mixed stock fisheries analyses at a coastwide scale. Additional work will allow mixed stock analyses at a finer spatial scale within the Columbia River Basin.	RME	\$600,000	estimate per year
	Power Analysis to Determine Catch Sampling Rates	200850800 * NEW	CRITFC	Harvest	\$50,000	NOAA, U of I, OSU	These entities (\$200,000/year) are correlating various landscape features with genetic structure of fish populations. This provides an understanding of the distribution of life history types across the landscape. The cumulative knowledge will be used to develop genetically credible genetic conservation and restoration strategies.	RME	\$200,000	estimate per year
	Genetic Baseline Expansion	200852000 * NEW	CRITFC	RME	\$150,000	NOAA, WSU, OSU, UW	Entities are conducting quantitative studies (\$250,000/year) of how genes are being expressed under different environmental conditions, such as thermal tolerance, toxicity, immune responses, etc. The cumulative results of individual studies will allow managers to develop genetically credible conservation strategies.	RME	\$250,000	estimate per year

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						PSMFC, state agencies, BIA	Catch sampling efforts are funded by State, Tribal and Federal sources including funds provided to implement the Pacific Salmon Treaty, the Columbia River Compact, and tribal fishing regulations. Funding sources include the Bureau of Indian Affairs (\$156K) and State Licensing programs (WA \$63K, OR \$25K).	RME, Harvest	\$244,000+	estimate per year
Umatilla	Develop Progeny Marker for Salmonids to Evaluate Supplementation	200203000 * Existing	CTUIR	RM&E	\$297,000	USFWS	\$50K over a 2-year period to assist with adult passage fixes at irrigation diversion dams.	Habitat	\$50,000	two years
	Pacific Lamprey Research and Restoration Project	199402600 * Existing	CTUIR	Lamprey	\$500,000	BOR	Anticipate funding starting in 2009 (\$50K per year?) to assist monitoring juv. impacts of irrigation screens.	RME (habitat)	\$50,000	estimate per year
	Freshwater Mussel Research and Restoration Project	200203700 * Existing	CTUIR	RM&E	\$233,000	USFS	\$50-100K per year goes towards western US mussel population genetics work which compliments BPA\$.	Mussels/ RME	\$50-100,000	per year
						UDWR (UT Div. of Wildlife Res.)	\$50K per year goes towards western US mussel population genetics work which compliments BPA\$.	Mussels/ RME	\$50,000	per year
							**Mussel cost shares should increase now that project has certainty of having at least a ten-year life.			
Upper Columbia	Status and Trend	200844700 * NEW	YN	Data management & Coordination	\$95,000	Yakama Nation	YN is primarily responsible for multiple monitoring surveys, both habitat and biological in nature. YN annually produces reports specific to these surveys.	RME	\$250,000	estimate per year
						USFWS	USFWS is primarily responsible for multiple monitoring surveys, both habitat and biological in nature. USFWS annually produces reports specific to these surveys.	RME	\$200,000	estimate per year
						WDFW	WDFW is primarily responsible for multiple monitoring surveys, both habitat and biological in nature. WDFW annually produces reports specific to these surveys.	RME	\$250,000	estimate per year
						Upper Columbia Salmon Recovery Board	The UCSRB has developed a Salmon Recovery Plan for ESA listed species and is in the initial stages of organizing and implementing the Plan. UCSRB Staffs are involved with helping to organize watershed groups in prioritization, implementation and monitoring of actions from the Implementation Strategy, which is a key component of the Recovery Plan.	Coordination	\$300,000	estimate per year
						Upper Columbia Regional Technical Team (RTT)	The RTT is a technical arm for the Upper Columbia Salmon Recovery Board and has been responsible for identifying biologically sound salmonid restoration and protection actions within the Upper Columbia Region. The RTT is also responsible for the development of monitoring strategies for each of the four subbasin within the Upper Columbia, closely associated with the CSMEP funding and strategies. The RTT, in coordination with the UCSRB will be key in helping to identify reach-scale and watershed monitoring strategies that associate restoration actions with biologic responses.	Coordination and RME	\$200,000	estimate per year
						Washington Governors Salmon Recovery Board	The Washington GSRO produces a biennial a "State of the Salmon" report that includes the Upper Columbia region. This report captures important activities the Governor's Office and state agencies have undertaken to recover salmon. This report provides an important backdrop of State-wide activities, but does not cover watershed and subwatershed scale activities at a high level of detail.	Reporting	Unknown	every 2 years
						Methow Recovery Council	The MRC is an ad hoc group of resource professionals and stakeholders that are assisting the Bureau of Reclamation and other restoration project sponsors in identifying and implementing projects. Currently this group is also exploring the ways and means for larger scale, long-term monitoring to help track restoration progress.	Habitat and Coordination	\$100,000	estimate per year
						Entiat Watershed Planning Unit	The EWPU has completed a Detailed Implementation Plan (DIP) in association with the Department of Ecology WRIA 46 Entiat Watershed Management Plan. The DIP was approved on February 2006. The DIP identifies water quantity, habitat and water quality implementation actions with associated strategies and timelines for achieving goals, and success measurements. The actions outlined in the DIP are based on recommendations contained in the Entiat WRIA 46 Management Plan (CCCD 2004) and subsequent documents that were based on the core content and actions recommended in the WRIA 46 plan, e.g. the Entiat subbasin plan (NPCC 2004) and draft Upper Columbia Salmon Recovery Plan (UCSRB 2005). The UC Salmon Recovery Plan references the Entiat Watershed Plan for many recovery actions.	Habitat and Coordination	\$300,000	estimate per year
						Wenatchee Watershed Planning Unit	The WWPU approved the Wenatchee Watershed Plan, completed in April 2006 and subsequently submitted to the county for approval. The plan includes a Water Resource Management Strategy to address concerns about protecting and enhancing flows for fish, while at the same time, providing a water reservation to accommodate future growth in the watershed. This strategy also includes many key habitat actions identified in the 2004 Subbasin Plans and proposed new instream flows on the mainstem if the Wenatchee River and several of the sub-basins. The UC Salmon Recovery Plan references the Wenatchee Watershed Plan for many recovery actions.	Habitat and Coordination	\$400,000	estimate per year
						Chelan, Douglas and Grant County Public Utility Districts	The three PUDs in the Mid-Columbia region operate under various HCPs, Settlement Agreements and/or Biological Opinions. Each of these entities are involved with improving mainstem passage survival for juvenile and adult salmonids, artificial production in the Upper Columbia and habitat enhancements. Annual reports are developed and provided to FERC and other interested publics on the activities and successes of their prospective programs.	Habitat, RME	\$5,000,000	per year
Walla Walla	Walla Walla River Fish Passage Operations	200003300 * Existing	CTUIR	Habitat	\$125,000	US Army COE, CTUIR and DOE	About \$ 1M per year goes to Walla Walla Flow Project Feasibility study which will compliment BPA FPO\$.	Habitat/ RME	\$1,000,000	per year
						US Army COE	Mill Creek passage facility operations at \$20 K per year.	Habitat	\$20,000	per year

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						NOAA- PCSRF	assistance to Walla Walla basin smolt outmigration monitoring \$55K per year.	RME	\$55,000	per year
						Landowners	Landowner in-kind O&M of 450 small irrigation pump screens at about \$45K per year.	Habitat	\$45,000	per year
Willamette	Willamette Falls Lamprey Escapement and Population Status Study	200830800 * NEW	CTWSRO	Lamprey	\$150,000	OWEB	OWEB funding \$6 million for Habitat in its Special Investments Partnership for restoration within the Basin for the period 2008 -2010, plus 3 other habitat projects in the Basin totaling \$1.3 million more.	Habitat	\$7,300,000	2008-2010
						PGE	Portland General Electric will be spend \$32 million on passage and flow control structures.	Habitat	\$32,000,000	total
						PGE	Portland General Electric will be spending \$1.25million annually on research for the next 3 years in the Willamette.	RME	\$1,250,000	per year
						PGE	In the Clackamas system (trib to Willamette) PGE will spend another \$75million in passage and collection facilities, habitat enhancement and studies.	Habitat & RME	\$75,000,000	total
						Eugene Water Electric Board	Eugene Water Electric Board is also spending in the subbasin; specifics unknown.	Habitat	TBD	*currently under FERC licensing process
Yakima	Yakima Klickitat Fisheries Project - Monitoring And Evaluation	199506325 * Existing	YN	RME	\$4,500,000	Yakama Nation	Yakama Nation funds expended in Yakima and Upper Columbia sub-basins on treaty trust resources.	RME and O&M	\$454,000	per year
						NOAA	Mitchell Act Funds.	O&M	\$185,000	currently funding
						BOR	Upgrades at Prosser Hatchery and Roza Dam; steelhead tracking study Report; steelhead tags; YN biologist.	RME, Facility upgrades	\$165,000	estimate per year
						BOR	Yakima Dam Fish Passage; Yakima Basin Salmon Recovery Plan Implementation.	Coordination; Passage	\$104,000,000	~2013 onwards based on future appropriations
						BOR/Washington Department of Ecology	Black Rock Reservoir and Alternatives Studies for Yakima Basin salmonid habitat enhancement.	Feasibility analysis and environmental review	\$18,000,000	estimated to date since 2003