



# EPA Puget Sound Financial and Ecosystem Accounting Tracking System (FEATS) v. September 2012 for Lead Organization Subawardees

*Photo by Rebecca Pirtle, Editor, Kingston Community News (Doe-Kag-Wats Estuary of the Suquamish Tribe)*

## PROJECT INFORMATION

<b>1. Federal Grant Number</b>	PA-00J322-01	<b>*2a. Reporting Period Start Date:</b>	4/1/2015	<b>*2b. Reporting Period End Date:</b>	9/30/2015
<b>3. Subaward Organization (Name and complete address including zip code)</b> Name: Muckleshoot Indian tribe Address 1: 39015 172 <sup>nd</sup> Avenue S.E. Address 2:			<b>4. Subaward Project Manager Contact Information</b> Name: Steve Maurer Phone: (253) 876-3138 Ext: Fax: (253) 939-5311 Email: smaurer@muckleshoot.nsn.us		
<b>5a. EPA Program</b> <b>LO - Tribal</b>		<b>5b. Subaward Project Title and Contract No.</b>  Soos Creek Juvenile Salmonid Outmigration Monitoring / 12EPA PSP410		<b>*6. Collaborating Organizations/Partners</b>  Washington Department of Fish and Wildlife	

<b><u>Subawardee Submission Instructions:</u></b>  LO fills in the white boxes. Subawardee fills in the yellow boxes (boxes with asterisks). Refer to guidance document for how to fill out the boxes. After filling out the yellow boxes, save and e-	<b>LO Project Manager:</b> Tiffany Waters <b>LO:</b> Northwest Indian Fisheries Commission <b>Phone:</b> 360.528.4318 <b>email:</b> twaters@nwifc.org  <b>LO Program Coordinator:</b>	<b>*7a. Name/Title of Person Submitting Report</b>	Mike Mahovlich Manager, Harvest Management
		<b>*7b. Date Report Submitted</b>	10/30/2015

<p>mail it to your LO Project Manager for approval. LO will roll up the information and submit to EPA for approval.</p>	<p><b>LO:</b> <b>Phone:</b> <b>email:</b></p> <p><b>EPA Project Officer:</b> Lisa Chang</p>
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## FUNDING/COST ANALYSIS

8a. Total Assistance Amount Awarded:	\$165,400.00	8b. Funding Year (Federal Fiscal Year Funds Appropriated)	FY 2012 ----- ----- -----	*9. Amount Spent To-Date:	\$165,400.00	*10. Amount Reimbursed To-Date:	\$165,400.00
11. Match Amount Required	\$0.00	*12. Total Match Amount Spent and Documented To-Date:	\$0.00	*13. Have you experienced any cost overruns or high unit costs?	n/a		
*14. What issues or questions do you need the LO Project Manager to respond to?		None at this time.					

## BUDGET UPDATE

	15a. APPROVED BUDGET			*15b. SPENT TO-DATE		
	LO (EPA) Funds	MATCH	TOTAL	LO (EPA) Funds	MATCH	TOTAL
Personnel	\$118,472.00	\$0.00	\$118,472.00	\$121,011.49	\$0.00	\$121,011.49
Fringe Benefits	\$34,090.00	\$0.00	\$34,090.00	\$27,103.54	\$0.00	\$27,103.54
Travel	\$4,334.00	\$0.00	\$4,334.00	\$4,201.49	\$0.00	\$4,201.49
Equipment	\$3,500.00	\$0.00	\$3,500.00	\$6,635.00	\$0.00	\$6,635.00
Supplies	\$3,004.00	\$0.00	\$3,004.00	\$5,881.81	\$0.00	\$5,881.81
Contracts	\$0.00	\$0.00	\$ 0.00	\$0.00	\$0.00	\$ 0.00
Other	\$2,000.00	\$0.00	\$2,000.00	\$566.67	\$0.00	\$ 566.67
<b>TOTAL DIRECT CHARGES</b>	\$165,400.00	\$0.00	\$165,400.00	\$165,400.00	\$0.00	\$165,400.00
Indirect Charges	\$0.00	\$0.00	\$ 0.00	\$0.00	\$0.00	\$ 0.00

<b>TOTAL</b>	\$165,400.00	\$0.00	\$165,400.00	\$165,400.00	\$0.00	\$165,400.00
<b>*Explain Any Discrepancies:</b>						

**ECOSYSTEM GOALS ADDRESSED**

<b>16a. Primary Goal</b>	Healthy Species
<b>16b. Additional Goals</b>	-----

**DIRECT THREATS ADDRESSED**

<b>17a. Primary Threat</b>	-----
<b>17b. Secondary Threat(s)</b>	-----

**LINKAGES TO PUGET SOUND ACTION AGENDA (Version Adopted August 2012)**

<b>18a. Primary Strategic Initiative</b>	Tribal Habitat Priorities
<b>18b. Sub-Strategies Employed</b>	A.1 A.6 D.4
<b>18c. Near-Term Actions Supported</b>	

**LINKAGES TO EPA PUGET SOUND PERFORMANCE MEASURES**

<b>19. Measure(s)</b>	-----
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**LINKAGES TO PUGET SOUND DASHBOARD INDICATORS**

20a. Primary Indicator	Wild Chinook Salmon
20b. Secondary Indicators	-----

## PROJECT LOCATION

21a. Latitude	47.31156	21b. Longitude	-122.16692
21c. Hydrologic Unit Code	17110013 - Duwamish	-----	-----
21d. Action Area	South Central Puget Sound	-----	-----

## MEASURES OF SUCCESS (Key Outputs)

*22a. Description (e.g., "shellfish beds reopened")	*22b. Unit (e.g., "acres")	*22c. Project Target ("number")	*22d. Project Measure To-Date ("number")
Successful sub-yearling Chinook efficiency trials			29
Successful sub-yearling coho efficiency trials			25
Successful yearling coho efficiency trials			5
Smolt trap was continuously operated over the vast majority of the outmigration period			No days missed

## PROJECT MILESTONES

**Instructions:** In the tables below, please explain your progress toward meeting agreed outputs for the period, **reasons for slippages**, and any additional information including **reflections, lessons learned, and/or thoughtful analysis**. When appropriate, include analysis and information of **cost overruns or high unit costs**, and changes to work plan or budget not requiring prior approval from EPA. We encourage photo documentation - please attach to the report as a separate document.

**23a. Subaward Work Plan Component/Task:** Big Soos Creek Juvenile Salmonid Outmigration Monitoring Project

**23b. 2012 Action Agenda Near-Term Action(s) Supported:**

**\*23c. Estimated Costs:** \$165,400.00

**Actual Costs to Date:** \$165,400.00

**(If required to report – contact your Project Manager)**

<b>23d. Sub-Task No.</b>	<b>23e. Sub-Task Description (include due date)</b>	<b>*23f. Date of Status</b>	<b>*23g. Status</b>	<b>23h. Outputs/Deliverables</b>	<b>*23i. Remarks</b>
1.1	Develop QAPP for approval by 1/1/14	12/12/13	COMPLETED	EPA Approved QAPP	QAPP approved by EPA 12/12/13
1.2	Field project implemented and data collected by a full time biologist	10/27/2014	COMPLETED	Coordination with WDFW's Soos Creek Hatchery, staffing, purchase and assembly of equipment & supplies, staff & vehicle scheduling, technician training, and supervision	Began January 2014, completed July 2014
1.3	Install floating rotary screw trap, check and maintain trap, sampling and recording data	10/27/2014	COMPLETED	Fish catch and mark-recapture data for population estimation and other biological data collection	Completed September 2014.
1.4	Remove trap and on-site facilities to restore site to pre-project conditions	7/1/2014	COMPLETED	Compliance with provisions outlined in the project Hydraulic Project Approval permit issued by WDFW.	All provisions in HPA were followed including site restoration following trap removal at the end of the trapping season
1.5	Conduct spawning habitat assessment	8/2014-9/2014	COMPLETED	Identification of Chinook spawning reaches and estimates for a habitat-based spawning escapement for Chinook, including habitat unit types/rations, photographs, descriptions of stream conditions	Completed habitat field work in September 2014.
1.6	Conduct Chinook spawning surveys	9/2014-11/2014	COMPLETED	Chinook redd counts and locations using GPS, maps of redd locations, counts of live and dead Chinook observed, including any pre-spawning mortalities found	Completed analyses of data in November of 2014.
1.7	Analyze daily catch data and mark-recapture rates; perform error checks and analyze bio-sampling data; compile and analyze habitat inventory	7/2014-12/2014	COMPLETED	Calculated annual juvenile population estimates and egg-to-emigrant survival; Estimates of spawning ground	Completed analyses of data in December of 2014.

	data			capacity for Chinook salmon in subbasin streams developed based on habitat data and redd survey data collected	
1.8	Prepare final report(s)	9/2014-03/2015	COMPLETED	A draft and final report that describes the data collected, methods, juvenile out-migrant and egg-to-emigrant survival estimates. A separate report or appendix will be prepared focusing on the methods and results of the spawning ground surveys, habitat inventory, and related analyses and conclusions/recommendations	Report has been prepared, and is undergoing a peer review internally.

### CHALLENGES AND SOLUTIONS (specific to reporting period)

*24a. Task No., Sub-Task No.	*24b. Challenge	*24c. Solution
n/a	n/a	n/a

### HIGHLIGHTS/LESSONS LEARNED/REFLECTIONS

**\*25.**  
 The objectives of this project are to describe emigration timing, health, and condition of salmonids in the Soos Creek Basin. The Soos Creek rotary juvenile fish trap began operating continuously in mid-January 2014 from the onset of Chinook salmon fry out-migration, and continued through the end of June 2014. A total of 7,349 age-0 Chinook, 17,860 age-0 coho, 1077 age -1+ coho, 1098 age-0 chum, 126 age-0 pink, 42 age-1+ steelhead/rainbow, and 40 age-1+ cutthroat trout were captured.

This project estimated juvenile abundance and productivity of out-migrant Chinook and coho salmon in the Soos Creek Basin. Data generated from this project was used to calculate annual juvenile population estimates and egg-to-emigrant survival rates. An estimated 101,748 ( $\pm$  19,357; 95% CI) sub-yearling (age-0) Chinook emigrated from the Soos Creek Basin during the trapping period. Estimated Brood Year (BY) 2013 egg-to-emigrant survival was 18.5% with 692 emigrants per spawner. Sub-yearling coho were estimated at 245,130 ( $\pm$  30,417; 95% CI) emigrants from the Soos Creek Basin. Estimated BY 2013 coho egg-to-

fry survival was 14.4% with 270 emigrants per spawner. This estimate for sub-yearling coho was not an out-migrant population estimate, but rather a movement estimate for fry that emigrated to lower Soos Creek. An estimated 18,490 ( $\pm$  8,238; 95% CI) yearling (age-1+) coho emigrated from Soos Creek Basin during the trapping period. Estimated BY 2012 coho egg-to-smolt survival was 0.9% with 14.5 yearling emigrants per spawner. This estimate assumes all coho from BY 2012 reared above the trap for one year. All out-migrant estimates are based on successful efficiency trials using mark-recapture methods.

Some out-migrant salmonids were observed with external abnormalities and were tested to have high concentrations of *Nanophyetus salmincola*, a common intestinal parasitic trematode. Sub-yearling Chinook started showing visible external abnormalities consistent with *Nanophyetus* in April, and observations of infected Chinook progressively increased through the end of the out-migrant season. Yearling coho showed signs of *Nanophyetus* when the trap began catching them in early February. Enumeration of salmonids with external abnormalities consistent with *N. salmincola* will provide valuable baseline data to assess inter-annual variation in the number of fish visibly affected by this naturally occurring pathogen within the Soos Creek Basin. Having two years of baseline fish condition and health data on Soos Creek is one of many accomplishments of this juvenile trapping project.