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

1. Federal Grant Number	PA-00J912-01	***2a. Reporting Period Start Date:**	4/1/2016	***2b. Reporting Period End Date:**	9/30/2016

3. Subaward Organization (Name and complete address including zip code)

Name: Sauk-Suiattle Indian Tribe
Address 1: 5318 Chief Brown Lane
Address 2:
City: Darrington State: WA Zip Code: 98241-

4. Subaward Project Manager Contact Information

Name: Scott Morris
Phone: (360) 436-347 Ext:
Fax: (360) 436-647
Email: smorris@sauk-suiattle.com

5a. EPA Program

LO - Tribal

5b. Subaward Project Title and Contract No.

Sauk-Suiattle Knotweed Eradication and Sediment Research / 14EPA PSP426

***6. Collaborating Organizations/Partners**

Washington Conservation Corps
U.S. Geological Survey
Skagit Climate Science Consortium

Subawardee Submission Instructions:

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-mail it to your LO Project Manager for approval. LO will roll up the information and submit to EPA for approval.

LO Project Manager: Dani Madrone
LO: Northwest Indian Fisheries Commission
Phone: 360.528.4318
email: dmadrone@nwifc.org

LO Program Coordinator:
LO:
Phone:
email:

***7a. Name/Title of Person Submitting Report**	Scott Morris Water Quality Coordinator
***7b. Date Report Submitted**	10/31/2016

	EPA Project Officer: Lisa Chang

FUNDING/COST ANALYSIS

8a. Total Assistance Amount Awarded:	$112,450.00	**8b. Funding Year (Federal Fiscal Year Funds Appropriated)**	FY 2014 ---------- ---------- ----------	***9. Amount Spent To-Date:**	$53,125.14	***10. Amount Reimbursed To-Date:**	$0.00
11. Match Amount Required	$0.00	***12. Total Match Amount Spent and Documented To-Date:**		***13. Have you experienced any cost overruns or high unit costs?**	No.		
***14. What issues or questions do you need the LO Project Manager to respond to?**	No issues.						

BUDGET UPDATE

	15a. APPROVED BUDGET			***15b. SPENT TO-DATE**		
	LO (EPA) Funds	MATCH	TOTAL	LO (EPA) Funds	MATCH	TOTAL
Personnel	$0.00	$0.00	$ 0.00			$ 0.00
Fringe Benefits	$0.00	$0.00	$ 0.00			$ 0.00
Travel	$0.00	$0.00	$ 0.00			$ 0.00
Equipment	$0.00	$0.00	$ 0.00			$ 0.00
Supplies	$0.00	$0.00	$ 0.00			$ 0.00
Contracts	$112,450.00	$0.00	$112,450.00	$53,125.14		$53,125.14
Other	$0.00	$0.00	$ 0.00			$ 0.00
TOTAL DIRECT CHARGES	$112,450.00	$0.00	$112,450.00	$53,125.14		$53,125.14
Indirect Charges	$0.00	$0.00	$ 0.00			$ 0.00
TOTAL	$112,450.00	$0.00	$112,450.00	$53,125.14		$53,125.14
***Explain Any Discrepancies:**						

ECOSYSTEM GOALS ADDRESSED

16a. Primary Goal	Healthy Habitat
16b. Additional Goals	Healthy Species ---------- ---------- ---------- ---------- ----------

DIRECT THREATS ADDRESSED

17a. Primary Threat	Invasive Species - Terrestrial
17b. Secondary Threat(s)	Climate Change ---------- ----------

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

18a. Primary Strategic Initiative	**Tribal Habitat Priorities**

18b. Sub-Strategies Employed	**A.1 A.5 A.6 C.4 B.5 D.5**

18c. Near-Term Actions Supported	

LINKAGES TO EPA PUGET SOUND PERFORMANCE MEASURES

19. Measure(s)	Habitat Restored/Protected ---------- ----------

LINKAGES TO PUGET SOUND DASHBOARD INDICATORS

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

PROJECT LOCATION

21a. Latitude	48.311740	**21b. Longitude**	-121.544620
21c. Hydrologic Unit Code	17110006 - Sauk	----------	----------
21d. Action Area	Whidbey	----------	----------

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")
Area surveyed for knotweed in Sauk and Suiattle watersheds (knotweed summer only)	acres	4500	4000
Percentage of knotweed patches in survey area determined "dead" (ie: no resurgence)	percent	65	74
Suspended sediment concentrations (SSC) elaborated at three Sauk River sites	SSC concentrations	5	3
Total area of land cleared of knotweed since beginning of project	square feet	200000	215784

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: Sauk-Suiattle Knotweed Eradication

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

***23c. Estimated Costs:**
Actual Costs to Date:
(If required to report – contact your Project Manager)

23d. Sub-Task No.	23e. Sub-Task Description (include due date)	*23f. Date of Status	*23g. Status	23h. Outputs/Deliverables	*23i. Remarks
1.1	GPS survey knotweed in the Sauk River floodplain, by raft	8/30/15	COMPLETED	7 days of knotweed surveyed from RM 15 to RM 0; field data	Washington Conservation Corps crew covered all riparian habitat along the mainstem Sauk and some infested tributaries.
1.2	Complete additional knotweed surveys	8/30/15	COMPLETED	3 days of additional knotweed surveys; field data	see above.

1.3	Spray knotweed in the Sauk River floodplain, by raft	8/30/15	COMPLETED	4 days spent spraying knotweed from RM 15 to RM 0; field data	WCC crew sprayed all knotweed found in the survey area.
1.4	Conduct landowner outreach and spray knotweed in and near the Town of Darrington, by vehicle and foot	9/15/15	COMPLETED	10 days spent spraying and conducting outreach in Darrington; field data	WCC crew was redirected to fire suppression before Darrington sites could be treated. The major patches were treated instead by a Snohomish County crew. This task is as complete as it is going to be for this season, because of the personnel shortfall.
1.5	Conduct landowner outreach, GPS survey, and spray knotweed in the Sauk Prairie area, by vehicle and foot	9/30/15	CANCELLED	10 days spent spraying, conducting GPS survey, and conducting outreach in Sauk prairie area; field data	Forest fires cut short the time we had with our WCC crew, so none of the patches on Sauk Prairie were treated this summer. Priorities remained on the mainstem Sauk and Suiattle Rivers, where knotweed is more easily transported downstream and more damaging to salmon habitat than upland sites. Personnel shortfall caused us to cancel this task for the 2015 season, to resume next year.
1.6	Collaborate with SFEG, WCC, Snohomish County, and Skagit CWMA to review and assess previous field season and data	9/30/15	COMPLETED	Annual Skagit CWMA report detailing results (# of knotweed patches identified, # of acres sprayed, pesticide used, GIS data); Meeting minutes; field photos; data summaries	Colin Wahl, the SSIT Field Coordinator, reviewed and assessed the 2015 data for the end of season Skagit Coordinated Weed Management Area working group's meeting Oct. 29 in Padilla Bay.

23a. Subaward Work Plan Component/Task: Research How Sediment is Impacting Sauk and Suiattle Fish Runs

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

***23c. Estimated Costs:**
Actual Costs to Date:
(If required to report – contact your Project Manager)

23d. Sub-Task No.	23e. Sub-Task Description (include due date)	*23f. Date of Status	*23g. Status	23h. Outputs/Deliverables	*23i. Remarks

2.1	Develop a QAPP Addendum to update management, personnel, timelines, goals and protocols, as necessary.	4/30/15	COMPLETED	Updated QAPP, if applicable	QAPP only needed minor adjustments; daily Isco sampling was changed to storm-event triggered sampling, but the handling and analysis of samples has not changed from a quality assurance standpoint. We simply changed the Isco program to trigger sampling at 300 NTU instead of regularly sampling every 6 hours.
2.2	USGS and SSIT crews will maintain sensors measuring turbidity and temperature at three USGS river gages on the Sauk, including the new site established by this project, located at the Sauk Prairie Road bridge over the Sauk in Darrington. Continuous turbidity and temperature measurements will also be taken from the Suiattle River, near the Boundary Bridge on USFS 25 Road and from the White Chuck River at a bridge 5.7 miles up the USFS 23 Road. An automated sediment sampler will continue to be installed at the upstream-most gage on the Sauk River, as well as additional samplers at the Suiattle and White Chuck sites.	9/30/15	COMPLETED	Continuous turbidity and temperature data; Automated sediment samplers on all three rivers will provide laboratory results from the USGS Cascades Volcano Observatory to facilitate statistical correlation with daily turbidity data as well as periodic EDI/EWI samples.	Data was collected at the three Sauk River gages from fall of 2011 through Sept. 2016. Daily composite samples were sent to the CVO lab for each site, for the first few years, then the automatic sampler was changed to only sample during storm events (once a statistical correlation was established). Cross-sectional EWI samples were also sent to the CVO.
2.3	SSIT and USGS crews will conduct weekly field inspections to verify sensor measurements, calibrate and maintain the field sensors, with technical support from USGS.	9/30/15	COMPLETED	Field notes, audit logs.	Weekly visits were made .
2.4	SSIT crews will use portable instruments to collect samples and discrete measurements of various water quality parameters complementary to the fixed station sensors, as determined by USGS.	9/30/15	COMPLETED	Field notes, data, lab reports.	Weekly sonde measurements also were completed as scheduled.
2.5	Sauk-Suiattle and USGS crews will continue to collect six to eight suspended-sediment samples per year at all five sites using either the Equal-Discharge Increment (EDI) or Equal-Width Increment (EWI) methods.	9/30/15	COMPLETED	Channel cross-section samples; all suspended sediment samples analyzed for concentration and the 'percent fines' at the	A few more samples were collected this winter as the storm season produced several good swells.

				USGS Cascade Volcano Observatory sediment lab; Subset of samples analyzed for density at the CVO and an additional subset of samples used for mineralogical analysis using X-ray diffraction or similar methods; GIS landslide inventory to assess sediment methods; Daily record of suspended-sediment load at each gage.	
2.6	USGS will prepare a more detailed "Scientific Investigations Report" (SIR) by the end of the five-year work plan.	9/30/15	CURRENT	SIR, written by the USGS Hydrologist(s) and SSIT technical staff, reviewed by the USGS Hydrologist – Surface Water Specialist and then developed into an online report by the USGS in-house publishing office.	Chris Curran and others at USGS are still working on the SIR during this reporting period, updating data, reviewing and analyzing data and figures.
2.7	Distribute and discuss the study results with SC2 and other appropriate entities.	9/30/15	CURRENT	Minutes and/or meeting notes	We are in regular contact with SC2 and plan to continue doing so, particularly with this report. The link to the web-based publication for the first two years of data was sent to SC2.

23a. Subaward Work Plan Component/Task: Sauk Stream Habitat and Fish Assemblage Assessment

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

***23c. Estimated Costs:**
Actual Costs to Date:
(If required to report – contact your Project Manager)

23d. Sub-Task No.	23e. Sub-Task Description (include due date)	*23f. Date of Status	*23g. Status	23h. Outputs/Deliverables	*23i. Remarks

3.1	Lower Skagit Gridded Climate Data Corrected, DHSVM model setup, and historic analysis	9/30/15	COMPLETED	Gridded climate data corrected to drive DHSMV; Model setup and historic model analysis; A paper submitted to a peer-reviewed journal.	During the previous reporting period, the DHSVM-glacier model was set up with preliminary model outputs at eight selected streamgauge locations in the Sauk-Suiattle basin (North Fork Sauk, White Chuck River, South Fork Sauk, Sauk River above White Chuck, Sauk River above Clear Creek, Sauk River near Sauk, Big Creek, and Sauk River at Darrington). We have identified and processed 301 climate forcing grid cells (5 x 6 km) over the Skagit Basin extent, inclusive of the Sauk sites, for the time period 1950-2005, which were used for the historical analysis. A draft report "Hydrologic Impacts of Climate Change in the Skagit River Basin" was completed by Sept. 30 and the final report was completed and is accessible now on the Skagit Climate Science Consortium's website.
3.2	Future Streamflow Projections for the Skagit Basin with DHSVM	9/30/15	COMPLETED	Routed bias-corrected modeled streamflows at selected locations in the Skagit with daily resolution and aggregated to monthly values; Data as tables for each location and temporal resolution (e.g. daily, bi-monthly, and monthly) with streamflow (cfs) values for each individual climate model and a multi-model ensemble. The multiple climate model scenarios will be used to represent a range of potential future streamflow conditions;	The report assesses predicted streamflow and glacier distribution for the eight Sauk sites, as well as 12 other sites (supported by Swinomish Indian Tribe and Seattle City Light). Future climate data from 10 global climate models and two scenarios (RCP 4.5 and 8.5) have been selected for model simulations for the time period 2006-2099. RCP 4.5 assumes global carbon emissions begin to decline by 2040, while RCP 8.5 assumes emissions continue at current levels until 2080. The report finds that under RCP 4.5 assumptions, high-elevation glaciers would continue to store ice and provide snowmelt for the summer months, while

				An oral presentation of results to SITC staff.	RCP 8.5 emissions levels would lead to the disappearance of most Skagit glaciers by the end of the century.

CHALLENGES AND SOLUTIONS (specific to reporting period)

*24a. Task No., Sub-Task No.	*24b. Challenge	*24c. Solution
1.4, 1.5	WCC crews were redirected to fight fires in eastern Washington, cutting short the summer season originally scheduled for spraying herbicide on knotweed.	The Sauk River riparian sites received first priority, and all river sites were treated. This left the upland Darrington sites untreated this summer. So I contacted Snohomish County noxious weed crews in September to at least spray the three biggest patches in Darrington. By October the change in the weather and the plants going dormant makes treatment unreliable and inefficient, so we'll have to redouble our efforts next summer.

HIGHLIGHTS/LESSONS LEARNED/REFLECTIONS

*25.