PROJECT: 17-1304 MON, ASOTIN IMW MONITORING 2017

Sponsor: Asotin Co Conservation Dist Program: Salmon Federal Activities Status: Active

Project Start Date: 01/19/2018 Agreement End Date: 03/31/2022

Final Report Status: Accepted 12/23/2021

Description

PROJECT AGREEMENT DESCRIPTION

The Asotin County Conservation District is requesting funding is to support ongoing monitoring in the Asotin Creek Intensively Monitored Watershed project (Asotin IMW). The project was started in 2008 and is expected to run until 2019. The funds are being requested to support i) juvenile steelhead PIT tagging and mark-recapture surveys and replac damaged PIT tag array equipment, and ii) habitat monitoring using the Columbia Habitat Monitoring protocol (CHaMP). These two monitoring efforts are being used to assess th effectiveness of large woody debris restoration at increasing juvenile productivity in Asotin Creek. Three tributaries in Asotin Creek need to be monitored: Charley Creek, North Fork Asotin Creek, and South Fork Asotin Creek. extent of fish monitoring is 12 sites 300-500 m in length, 4 in each tributary (see attached map). The extent of the habitat monitoring is 12 CHaMP sites (length 160-200 m) in Charley and North Fork Creek ??? Tetra Tech is funding CHaMP monitoring in South Fork Creek in 2017. This project will support the ESA listed summer steelhead recovery. All of the fish and habitat data collected will be made publically available in the PTAGIS (ptagis.org) and on the CHaMP webs (champmonitoring.org). Analyses of the data will be conducted with other funds provided to the Asotin IMW by PSMFC.

FINAL PROJECT DESCRIPTION

The Asotin Creek Intensively Monitored Watershed project (Asotin IMW) has been running since 2008 with the goal to test the effectiveness of low-tech process-based restorati structures at improving riverscape health and summer steelhead productivity. The project is coordinated by the Snake River Salmon Recovery Board and funded by the Pacific States Marine Fisheries Commission. This report summarizes the final design and as-built construction details for increasing wood densities in the Asotin IMW funded by RCO Grant 17-1304. Grant 17-1304 was originally developed to support monitoring and analysis efforts for the IMW, but was amended to focus more on maintenance and enhancem actions in the IMW treatment sections and updating enumeration of emigrating steelhead smolts, adult escapement, and smolts per spawner for each IMW stream and treatmen and control section. Originally, we installed 654 post-assisted log structures (PALS) between 2012-2016 and have seen some positive geomorphic and fish population response As part of our adaptive management plan, we have conducted annual structure surveys and have thresholds that trigger the addition of more wood if the density in treatment sections does not remain high. We added additional wood to increase the treatment wood density in 2016, 2018, and 2020 based on the annual surveys. We increase wood density by adding more wood to structures that lost wood, rebuilding structures that were washed downstream, and other low-tech restoration approaches like harvesting trees c site or using grip-hoists to move downed wood into the stream. Surveys in spring 2020 and 2021 identified areas in each original treatment that could be enhanced with more wood. In this report, we document enhancing 131 structures with the addition of over 300 pieces of LWD, whole trees, and small woody debris. Most of the large wood and tree was added to the North Fork Asotin Creek using wood harvested onsite to rebuild or enhance 39 PALS. We also built 25 BDAs in Charley Creek and connected over 500 m of side-channels. We took advantage of abundant SWD that was available along South Fork from fire line construction and added brush and small trees to over 60 existing structu in South Fork Creek. This report includes the final restoration design and as-built descriptions of the methods, structure locations, construction actions, and a summary of analy methods and estimates of steelhead smolt emigration and adult escapement from 2008-2020 for the IMW streams and treatment and control sections. Interpretation of the smolt and adult estimates will be presented in the IMW annual report for 2021 (SRFB Project 19-1545C). Costs of the two project elements were: Analysis = $12,045 and Restoration Maintenance and Enhancement = $44,018 for total of $56,063.

Narrative

This project was developed as part of the adaptive management plan of the Asotin Creek Intensively Monitored Watershed Project (see Grant 21-1386). The project takes place entirely on WDFW property and we worked with WDFW to coordinate and get approval of the restoration actions. The concept for the project is to maintain and enhance the existing IMW restoration actions completed between 2012-2016 to test the effectiveness on a novel restoration action called low-tech process-based restoration. Some funds fro this project were also used to support IMW data management and analysis of smolt emigration and adult escapement. The design process was simply to assess the existing restoration structures and determine how many needed to be rebuilt or enhanced to continue to promote key geomorphic processes of erosion, deposition, and floodplain connection. All design, planning, construction supervision, and as-built surveys was conducted by Stephen Bennett of Eco Logical Research Inc. and all construction was conducted by Eco Logical Research Inc. Juvenile steelhead abundance appears to be increasing in treated areas compared to untreated areas and adult steelhead reads are regularly observed in new gravel bars formed by the structures. We are learning that the maintenance is relatively easy and efficient when we can harvest material onsite and th the maintenance and enhancement does help to promote greater and continued geomorphic processes. This was also the first time we built beaver dam analogues (BDAs) in th IMW project, and we learned that they can be more effective than post-assisted log structures (PALS) at reconnecting side-channels and floodplain habitat during base-flow conditions. Other projects should consider using a combination of BDAs and PALS when the goals are to reconnect floodplain habitats and increase channel complexity.

Worksites

Worksite #1: Asotin

Worksite Address (Optional)
Street Address
City
State, Zip

Worksite Details

Worksite #1: Asotin

Worksite Name Asotin

WORKSITE DESCRIPTION

The project will take place within the Asotin Creek watershed in the IMW study area, which includes Charley Creek, North Fork Asotin Creek, and South Fork Asotin Cree Monitoring is the only activity occurring. E.1.c.1

Geographic Coordinates

From mapped point:	Latitude	46.272599	Longitude	-117.294001
For Directions:	Latitude	46.273756	Longitude	-117.292299

SITE ACCESS DIRECTIONS

The Astotin Watershed and IMW study area can be accessed from the town of Asotin by heading up Asotin Creek Road.

Properties

The selected project has no properties

Monitoring Metrics

Worksite: Asotin (#1)

	Current Agreement	Final
Targeted salmonid ESU/DPS (A.23)	☐ No Salmon ESU or Steelhead DPS ☑ Chinook Salmon-Snake River Spring/Summer-run ESU ☐ Chinook Salmon-unidentified ESU ☑ Steelhead-Snake River DPS ☐ Steelhead/Trout-unidentified DPS	☐ No Salmon ESU or Steelhead DPS ☑ Chinook Salmon-Snake River Spring/Summer-run ESU ☐ Chinook Salmon-unidentified ESU ☑ Steelhead-Snake River DPS ☐ Steelhead/Trout-unidentified DPS
Targeted species (non-ESU species)	☑ None Unknown Brook Trout Brown Trout Bull Trout Cutthroat Forage Fish Kokanee Lamprey ☑ Rainbow Searun Cutthroat	None Unknown Brook Trout Brown Trout ☑ Bull Trout Cutthroat Forage Fish Kokanee ☑ Lamprey Rainbow Searun Cutthroat

Priority in Recovery Plan	This project is identified as a high priority in the 3-year regional workplan and occurs in a major spawning area for steelhead in a priority restoration reach as identified in the Snake River Salmon Recovery Plan.	*Not Collected at Closure*
Number of Reports Prepared (E.0.e.1)	2	1 **Note:** the IMW has produced several reports including plann restoration, adaptive managem and monitoring, and analysis reports which are all publicly available SRSRB website and Prism
Name Of Report (E.0.e.2)	Asotin IMW interim and annual reports for 2018	Bennett S, Keksi E, Bouwes N 2020. Asotin Creek Intensively Monitored Watershed annual progress report: 2008-2020 da summary and adaptive management update. Prepare Recreation and Conservation Office, Olympia, Washington. Prepared by Eco Logical Research, Providence, Utah.
Project Identified in a Plan or Watershed Assessment (E.0.c)	Snake River Salmon Recovery Board (2011 Version). Snake River Salmon Recovery Plan for SE Washington. Dayton, WA. Snake River Salmon Recovery Board (2017 Version). Snake River Salmon Recovery Region Provisional 3-5 Year Work Plan. Dayton, WA.	SRSRB. 2011. Snake River salmon recovery plan for SE Washington: 2011 version. Prepared by Snake River Salm Recovery Board for the Washington Governor's Salmo Recovery Office. SRSRB. 2017. Snake River salmon recovery plan for SE Washington: 20
Number of Cooperating Organizations (E.0.d.1)	2	7
Name Of Cooperating Organizations (E.0.d.2)	WDFW and ELR.	WDFW, ACCD, SRSRB, RTT, USFS, NOAA, Nez Perce
Complement Habitat Restoration Project (E.0.b)	Astoin IMW Restoration Treamtments (11-1573, 12-1637, 15-1321)	Asotin IMW Restoration Treatments (11-1573, 12-1637 19-1499)

Monitoring

Acres of watershed area monitored (E.1.b.2)	180.0	1,000.0
Record Name Of Strategy/Program (E.1.d)	Seber, G.A.F. 1982. The estimation of animal abundance, 2nd Edition. Charles Griffin and Company, London. CHaMP. 2014. Scientific protocol for salmonid habitat surveys within the Columbia Habitat Monitoring Program.	CHaMP. 2016. Scientific proto for salmonid habitat surveys w the Columbia Habitat Monitorir Program. Prepared by the Integrated Status and Effectiveness Monitoring Prog and published by Terraqua, In Wauconda, WA
Stream Miles Monitored (E.1.b.1)	25.00	22.00

Intensively monitored watershed (E.1.c.15)

Total cost for Intensively monitored watershed	$177,000 **Note:** The total SOW includes Admin/Grant Management, Monitoring, Data Management, Reporting, PIT tagging, and array maintenance and replacement. The SRFB component is scheduled to go towards the replacement of 3 PIT tag arrays, with the matching PSMFC funding covering the rest of the SOW.	*Not Collected at Closure*
# acres (to nearest 0.1 acre) Intensively monitored watershed (E.1.c.15.c)	180.0	1,000.0

# miles (to nearest 0.01 mile) Intensively monitored watershed (E.1.c.15.a)	25.00	22.00

Agency Indirect Costs

Agency Indirect

Total cost for Agency Indirect	*Not Collected at Closure*

Overall Metrics

	Current Agreement	Final
Completion Date		
Projected date of completion	12/31/2019	12/31/2021
Project Goals		
Goals, purpose, and expected benefits (A.17)	To support ongoing monitoring in the Asotin Creek Intensively Monitored Watershed project (Asotin IMW).	This project supported the ongoing monitoring for the Asc IMW and to increase the wooc density in existing treatment ar and promoted increased chan complexity and floodplain connection

Monitoring Costs

Final amounts include a pending bi
Date of Last Released Billing 12/10/2

Worksite: Asotin (#1)

	Proposed	Final
SPLIT OUT FINAL TOTAL BELOW	$177,000	$177,000
	$177,000	$177,000
Monitoring Costs (E.1.a)		**Note:** this is really complicate because $$ were taken out to WDFW to buy pit tag equipme and $56,063 was spent on restoration for IMW
Agency Indirect Costs		$0
Difference		$0

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Billed Summary

Final amounts include a pending billi
Date of Last Released Billing 12/10/20

Category	Project Agreement RCO	Project Agreement Total	Totals To Date Expended	Totals To Date Non Reimbursable	Totals To Date Total Bille
Non-Capital					
Non-Capital Costs			150,110.00	26,890.00	177,000.0
Equipment					
Non-Capital Total	**150,110.00**	**177,000.00**	**150,110.00**	**26,890.00**	**177,000.0**
Total	150,110.00	177,000.00	150,110.00	26,890.00	177,000.0

Sponsor Match

	Proposed	Final
Project Funding		
Federal Funds	$150,110.00	$93,777.77
State Funds (A.11)		
Pending Billing - RCO Share Approved	*Collected at Closure*	$41,321.23
Retainage - RCO amount retained	*Collected at Closure*	$15,011.00

Match Details

Match Category	Match Type	Proposed	Final
Other Monetary Funding	Grant - Federal		
Amount		$26,890.00	
Funding Organization			
Grant Program			
Other In-Kind Contributions	Donated Services		*Unable to tie Billed match t Proposed match.*
Amount		*N/A*	$26,890.00
Funding Organization			ELR

	Proposed		Final	
Project Funding Total	$150,110.00	84.81 %	$150,110.00	84.81 %
Sponsor Match Total	$26,890.00	15.19 %	$26,890.00	15.19 %
Project Total	$177,000.00	100.00 %	$177,000.00	100.00 %
Total Billed			$177,000.00	
Difference			$0.00	

Attachments

PHOTOS (JPG, GIF)

Photos (JPG, GIF)

PROJECT DOCUMENTS AND PHOTOS

Project Documents and Photos

File Type	Attach Date	Attachment Type	Title	Person	File Name, Number Associations	Sh
	11/22/2021	Final project report	Final_Design_&_As-built_Report_IncreaseWoodDensity_17-1304.p	StephenB	Final_Design_&_As-built_Report_IncreaseWoodDensity_17-1304.pdf, 491586 Final Report, 12/23/2021, Accepted	

Certify & Submit

Status History

Report Status	Date	User	Note
Accepted	12/23/2021	Keith Dublanica	thanks for a successful completion to this project
Submitted	12/23/2021	Megan Stewart	
Returned	12/21/2021	Keith Dublanica	due to a cost metric edit needed I cannot accept/ approve this. Please edit as needed and resubmit once all edits have passed. THANKS
Submitted	12/17/2021	Megan Stewart	
Draft	11/17/2021	Stephen Bennett	