

Tables

Tucannon River Programmatic Report

Project #: 2010-077-00

Annual Report
(Reporting Period January 2016 to December 2016)

Contract: # 72042

Tables 1-8



PA-14 2017 Winter Flows

Table 1: Tucannon Programmatic Habitat (2010-077-00) Objectives 2017 as defined in the 2010 project proposal in cbfish.org (<https://www.cbfish.org/Proposal.mvc/Summary/GEOREV-2010-077-00>)

Reduce channel confinement/increase floodplain connectivity so that no more than 30% river length is unnaturally confined. (OBJ-4)	The desired outcome of this objective is improved channel function, increase stream length and side channel habitat, restored hyporheic conditions and riparian survival.
Increase pool frequency to 15% of stream area (OBJ-3)	The desired outcome of this objective is to increase stream depth, habitat complexity, substrate sorting, and promote stable pool-out habitat for spawning.
Increase large woody debris to 2 or more pieces per channel width (OBJ-2)	Add LWD to increase pool quantity and quality, promote development of side channel and backwater habitat and streambed aggradation to increase floodplain connectivity.
Increase riparian function to 75% of maximum (OBJ-1)	Restore and protect riparian species composition and density to improve canopy cover, riparian area (acreage) and riparian structure.
Reduce maximum daily water temperature so that it does not exceed 72F at confluence of Pataha Creek (RM 11.8) (OBJ-5)	The outcome of this objective is to improve water temperature, increase useable habitat, and expand the geographic range of spring Chinook.
Decrease substrate embeddedness to 20% in all reaches above confluence of Pataha Creek (RM 11.8). (OBJ-6)	The outcome of this objective is to increase egg survival, improve invertebrate species diversity and abundance, and increase interstitial spaces.

Table 2: The Tucannon Subbasin Plan restoration objectives

Restoration Objectives outlined in the Subbasin Plan
I: Achieve less than 20% fine sediment
II: At least 2 pieces of LWD per channel width
III: 15% or more of the stream surface should be pools
IV: Riparian function should be at least 75% of maximum
V: No more than 25% of the stream bank length should be confined
VI: Water temperature above 72F no more than 4 days per year
VII: Flow should be increased where possible.

Table 3: Habitat restoration objectives as they are list in the Salmon Recovery Plan for South Eastern Washington for the Tucannon River from the mouth of Pataha Creek upstream above Panjab Cr. The objectives are listed by level of priority as identified in the 2012 plan. Imminent threats are always considered the highest priority when identified in project rounds.

Upper Tucannon River MSA (from Pataha Creek upstream to Tucannon headwaters)	
Imminent Threats: Fish Screens, Low Stream Flows	
I.	Riparian: > 40 to 75% of maximum
II.	Large Woody Debris: >1 key piece per channel width
III.	Channel Confinement: < 25 to 50% of stream bank length
IV.	Temperature: < 4 days > 72°F

Table 4: All Programmatic contracts FY11 through FY17 provided in cbfish.org, including project implementation, design, construction management, and program administration. Programmatic matching funds are provided on the far right for non BPA funds as they were matched against contracts. The recipient of each contract is also provided. In most cases contract totals are not reflective of total project costs due to the size of a project, (number of contracts to complete one project) or the partners involved with matching funds, and in some cases the number of FY a project may span; for a more true accounting of individual cost refer to table 6 in this document.

Fiscal Yr Budget(s) for the Programmatic 2010-077-00 Tucannon River Programmatic Habitat Project														
Expense Budget		Start	End	F2011 Bdgt	F2012 Bdgt	F2013 Bdgt	F2014 Bdgt	F2015 Bdgt	F2016 Bdgt	F2017 Bdgt	Sponsor	Year Implemented	Non/BPA Cost Share/project	
BPA Approved Expense Budget				\$596,063	\$1,268,560	\$1,268,560	\$1,462,298	\$1,375,800	\$1,369,195	\$1,369,195			Non-Habitat	Habitat
Total of BPA Expense Funding				\$562,995	\$1,267,714	\$1,284,028	\$1,462,245	\$1,305,001	\$1,439,994	\$347,000				
Total Contracted work under this project		1/28/11	3/31/19	\$562,995	\$1,267,714	\$1,284,028	\$1,462,245	\$1,305,001	\$1,439,994	\$347,000				
Contracts to Date (FY11-FY17)	51166 EXP TUCANNON RVR PROGRAMMATIC HABITAT	1/28/11	1/31/12	\$70,217	-	-	-	-	-	-	WWCC	2011-12	\$4,092	
	54636 EXP WDFW LWD & BLDG REMOVAL IN THE TUCANNON	9/15/11	9/30/12	\$492,778	-	-	-	-	-	-	WDFW	2012		\$613,734
	56233 EXP TUCANNON RVR PROGRAMMATIC HABITAT	2/1/12	1/31/13	-	\$137,720	-	-	-	-	-	WWCC	2012-13	\$8,231	
	58777 EXP TUCANNON (AREA 14) REMOVE HARD BANK & ADD WOOD	9/16/12	12/31/14	-	\$1,057,795	-	-	-	-	-	WDFW	2014		\$576,000
	58975 EXP TUCANNON (AREA 15) DESIGN - CHANNEL COMPLEXITY	9/25/12	12/31/13	-	\$72,199	-	-	-	-	-	WWCC	2012-13		
	60562 EXP TUCANNON (PARENT) HABITAT PROGRAM: ADMIN & MANAGE	2/1/13	3/31/14	-	-	\$168,522	-	-	-	-	WWCC	2013-14	\$10,043	
	39881 REL 4 TUCANNON AREA 14 PROJECT	3/29/13	5/10/13	-	-	\$4,148	-	-	-	-	BPA	2013	\$0	\$0
	62573 EXP TUCANNON (AREA 15) BUILD - CHANNEL COMPLEXITY	9/16/13	12/31/14	-	-	\$616,917	-	-	-	-	CCD	2014-15	\$0	\$100,000
	62642 EXP TUCANNON (AREA 3) BUILD - ADD LWD AND BOULDERS	9/16/13	12/31/14	-	-	\$494,440	-	-	-	-	CTUIR	2014		\$4,000
	63605 EXP TUCANNON (AREA 1) BUILD - HABITAT COMPLEXITY	11/1/13	12/31/14	-	-	-	\$400,000	-	-	-	CTUIR	2014	\$0	\$110,000
	64003 EXP TUCANNON (AREA 11) LWD: DESIGN-SITE PREP-MATERIAL	1/1/14	3/31/15	-	-	-	\$347,262	-	-	-	WDFW	2014-15	\$0	\$0
	64018 EXP TUCANNON (AREA 24) DESIGN - FUNCTION & COMPLEXITY	1/1/14	12/31/14	-	-	-	\$78,071	-	-	-	WWCC	2014	\$0	\$0
	65148 EXP TUCANNON (AREA 15) PHASE II BUILD: HAB COMPLEXITY	4/1/14	3/31/16	-	-	-	\$481,699	-	-	-	CCD	2015	\$0	\$0
	65249 EXP TUCANNON (PARENT) HABITAT PROGRAM: ADMIN & MANAGE	4/1/14	3/31/15	-	-	-	\$155,213	-	-	-	WWCC	2014-15	\$10,043	\$0
	66844 EXP TUCANNON (AREA 24) BUILD: FUNCTION AND COMPLEXITY	10/1/14	3/31/16	-	-	-	-	\$677,071	-	-	CCD	2015	\$0	\$231,000
	68810 EXP TUCANNON (PARENT) HABITAT PROGRAM: ADMIN & MANAGE	4/1/15	3/31/16	-	-	-	-	\$203,277	-	-	WWCC	2015-16	\$13,043	\$0
	68874 EXP TUCANNON (WDFW) PA-11 BUILD: ADD LWD & COMPLEXITY	4/1/15	3/31/16	-	-	-	-	\$424,653	-	-	WDFW	2015	\$0	\$200,000
	72042 EXP TUCANNON (PARENT) HABITAT PROGRAM: ADMIN & MANAGE	4/1/16	3/31/17	-	-	-	-	-	\$208,419	-	WWCC	2016-17	\$13,043	
	72044 EXP TUCANNON (WDFW) ADMIN: PA-13 (DESIGN), CONST-PREP	4/1/16	3/31/17	-	-	-	-	-	\$154,301	-	WDFW	2016-17	\$0	\$400,000
	72405 TUCANNON (PA-28) PHASE 1-A: ADD FUNCTION & COMPLEXITY	5/1/16	3/31/19	-	-	-	-	-	\$210,000	\$154,957	CCD	2016	\$0	\$304,775
73343 EXP TUCANNON (PA-6, 8-9) BUILD: ADD LWD & COMPLEXITY	8/1/16	3/31/18	-	-	-	-	-	\$357,930	-	WDFW	2017	\$0	\$0	
73400 EXP TUCANNON (PA-17/18) BUILD-I: ADD LWD & COMPLEXITY	8/1/16	3/31/18	-	-	-	-	-	\$509,344	\$865,009	CTUIR	2017		\$408,000	
CR-301318 EXP TUCANNON (PARENT) HABITAT PROGRAM: ADMIN & MANAGE	4/1/17	3/31/18	-	-	-	-	-	-	\$194,928	WWCC	2017-18	\$4,092	\$0	
CR-301319 EXP TUCANNON (WDFW) ADMIN: PA 6-9 BUILD, PA-13 DESIGN	4/1/17	3/31/18	-	-	-	-	-	-	\$154,301	WDFW	2017-18			
									Sum FY11-16	\$7,321,976	\$1,369,195		\$62,587	\$2,947,509

Table 6: Project implementation 2011-2017 for the Tucannon River spring Chinook priority areas identified in the Tucannon Geomorphic Assessment (Anchor QEA 2011 April). All project implemented during the time period were identified in the Tucannon Conceptual Restoration Plan (Anchor QEA 2011 Nov) as one of the 28 projects located in the Tucannon Programmatic. Projects highlighted in green were supported financially through the Programmatic while project highlighted orange were provided technical support only. The project metric table displaying # of LWD key pieces (>6m long and 0.3m dia), pool counts, and side channel improvements for all projects complete projects. Additionally, Work to be completed in 2017 has been included in the table denoted as pre-construction estimates(~). The calculations of increased perennial reach length is represented in the pre/post project change in perennially wet stream length including both main channel and side channels. The programmatic has estimated costs to the Programmatic and matching funds either Non-BPA or from other BPA projects where available to the Programmatic, provided in the last five columns. Total project costs reflect the cost of achieving the associated project but are not in all cases complete with non-Programmatic funded projects.

Project Area (PA)	Treated Length miles aa	# of Key Pieces			# of Pools			Miles of Side Channel			Increase in Perennial Reach Length (Miles)			BPA Programmatic Costs Est by Programmatic		Match All Sources Including Other BPA Projects		Total Project Costs
		Pre Project bb	Post Project dd	% Increase	Pre Project	Post Project	% Increase	Pre Project	Post Project	% Increase	Pre Project	Post Project	% Increase	BPA Project Cost to Date	BPA-FY	Project Match Grants	Donated Trees	
1	0.81	44	248	464%	14	17	21%	0.19	0.55	65%	0.78	1.14	32%	\$400,000	FY14	\$70,000	\$100,000	\$570,000
3	1.36	101	441	337%	29	51	76%	0.4	0	0%	1.76	1.76	0%	\$495,815	FY13	\$70,000	\$53,769	\$619,584
10	2.03	100	468	368%	N/A	N/A	N/A	0.62	1.83	66%	2.18	2.68	19%	\$492,778	FY-11	\$400,000	\$100,000	\$992,778
11	2.35	96	657	584%	23	85	270%	1.1	1.39	21%	2.66	2.86	7%	\$688,969	FY-14 & 15	\$200,000	\$100,000	\$988,969
14	1.64	64	697	989%	30	43	43%	0.23	1.61	86%	1.87	2.64	29%	\$1,170,960	FY12	\$312,023	\$0	\$1,482,983
15	0.89	55	472	758%	18	54	200%	0.2	0.46	57%	0.36	0.62	42%	\$1,115,847	FY12, 13 & 14	\$68,171	\$0	\$1,184,018
22^	1.01	10	46	360%	14	14	0%	0	0	0%	0	0		N/A	N/A	N/A	N/A	N/A
23^	0.98	35	86	146%	N/A	N/A	N/A	0	0	0%	0	0		N/A	N/A	N/A	N/A	N/A
24	0.99	43	377	777%	13	30	131%	0.1	0.54	81%	0.96	1.25	23%	\$763,476	FY14&15	\$344,571	\$0	\$1,108,047
26^	0.76	N/A	78	—	N/A	N/A	N/A	N/A	N/A	—	N/A	N/A		N/A	N/A	N/A	N/A	N/A
28*	0.52	41	169	312%	10	34	240%	0.57	0.95	40%	0.57	0.95	40%	\$364,000	FY16/17	\$618,000	\$0	\$982,000
PA-6-9**	1.78	112~	672~					1	1.25~					\$954,000	FY16&17	\$400,000	0	\$1,354,000
PA-18**	1.26		400~											\$700,000	FY16/17	\$546,000	\$0	\$1,246,000
Sums ^^	10.59	544	3529		137	314		3.41	7.33		11.14	13.9		\$7,145,845		\$3,382,534		\$10,528,379
Sums ^/^	16.38	589	3739		151	328		4.41	7.33		11.14	13.9		\$7,145,845				\$10,528,379



aa	Miles treated refers to the stream mile layer generated in the Geomorphic Assessment 2011	*	Work metric shown completed but work remains on project in 2017
bb	# of Key LWD Pieces >6m long & > 30cm dia	**	Work metrics not completed and estimated based on design
dd	total number of post project wood in reach >6m long & >30cm dia	***	LWD key piece used in the as built condition including that which is not above grade
ee	# of medium LWD >6m long & 15-30cm dia	****	LWD key pieces counted during rapid habitat survey (above grade)
^	Projects supported by Programmatic but not with implementation funding	~	Pre-construction estimate
^^	Sums for the Programmatic funded projects		Projects Funded by the Programmatic
^/^	Sums for Programmatic supported non-funded		Project Funded by Partner and supported by Programmatic
1	Pre-construction estimates not included in sums for programmatic or partner projects		

Table 7: Habitat actions completed in the Tucannon River between 2011 and 2016 including those funded by Programmatic and also partners. Column one shows metrics implemented through Programmatic funds in 2016, column two for the duration of the Programmatic and column four is an estimate of work planned in 2017. Column three provides all the work completed in the spring Chinook priority area on projects 1-28 identified in the Conceptual Restoration Plan (Anchor QEA 2011 April) by the partners and the Programmatic.

Updated:12/25/16	2016 Programmatic	Programmatic Total 2011-16	Total Chinook Domain 2011-2016	2017 Est. Total
Main Channel Treated (mile)	0.10	8.31	13.30	4.99
Placed LWD (mile)	0.52	10.50	12.64	4.99
LWD Key Pieces added (bb)	135	3379	3544	>1000
Med LWD Debris Added (ee)	40.00	841	860	~300
# Structures added (cc)	23	413	450	~170
# of single logs added (bb)	0	134	134	~50
Natural Key Pieces (bb)	34	394	446	~260
Natural Medium (ee)	34	222	340	~100
Rapid Hab/Post Survey (#of key pieces) (dd)	169	3529	3752	N/A
Levee Removed (ft)	310	2187	11278	~150
Levee Set Back (ft)	3158	3168	18205	0.00
Side Channel Enhance (mile)	0.28	1.96	1.96	1.59
Side Channel Created (mile)	0.00	2.89	2.89	1.56
Side Channel Reconnect (mile)	0.26	1.26	1.26	2.03
New Floodplain (ac)	0.0	36.7	164.9	~35

bb	# of Key LWD Pieces >6m long & > 30cm dia
cc	# of multiple log structure added
ccc	# of multiple log structures present in recent survey
dd	total number of post project wood in reach >6m long & >30cm dia
ee	# of medium LWD >6m long & 15-30cm dia
^	Projects supported by Programmatic but not with implementation funding
*	Miles of main channel treated based on Conceptual Report Design RM lengths (Anchor QEA 2011 Nov).
**	Miles of LWD Key Piece placed > 2/per bank full width including main and side channel.
***	LWD key piece used in the as built condition including that which is not above grade
****	LWD key pieces counted during rapid habitat survey (above grade)
~	Pre-construction estimate

Table 8: The following table lists the data on channel confinement produce from the LIDAR information and is reproduced from the Geomorphic Assessment (Anchor 2011 April). The table lists the proportion of river channel confinement by river reach.

Reach	River Mile		Length (mi)	Degree of Confinement, Length (mile)			Degree of Confinement, (%)		
	Begin	End		Confined	Moderate	Unconfined	Confined	Moderate	Unconfined
10	50.2	44	6.2	1.5	4.7	0	24.20%	75.80%	0.00%
9	44	40	4	0	2	2	0.00%	50.00%	50.00%
8	40	32.1	7.9	0.9	6.4	0.6	11.40%	81.00%	7.60%
7	32.1	27.5	4.6	2.4	2.2	0	52.20%	47.80%	0.00%
6	27.5	20	7.5	0.4	5.1	2.1	5.30%	67.10%	27.60%
5	20	13.2	6.8	3.7	1.8	1.3	54.40%	26.50%	19.10%
4	13.2	8.9	4.3	0.6	1.9	1.8	14.00%	44.20%	41.90%
3	8.9	4.5	4.4	4.3	0	0.1	97.70%	0.00%	2.30%
2	4.5	0.7	3.8	0.5	1.6	1.7	13.20%	42.10%	44.70%
1	0.7	0	0.7	0.7	0	0	100.00%	0.00%	0.00%
			Sums	<i>15</i>	<i>25.7</i>	<i>9.6</i>	<i>29.80%</i>	<i>51.10%</i>	<i>19.10%</i>