



R & E Grant Application 13 Biennium

Project #:
13-084

Recovering Coded Wire Tags in the Sandy Basin

Project Information

R&E Project Request: \$11,250.00
Match Funding: \$59,572.25
Total Project: \$70,822.25
Start Date: 8/1/2014
End Date: 6/30/2015
Project Email: luke.whitman@oregonstate.edu
Project Biennium: 13 Biennium
Organization: ODFW - Corvallis Research Lab

Applicant Information

Name: Luke Whitman
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Past Recommended or Completed Projects

This applicant has no previous projects that match criteria.

Project Summary

This project is part of ODFW's 25 Year Angling Plan.

Activity Type: Research

Summary: In recent years, a large number of spring Chinook salmon of hatchery origin have been returning to the upper Sandy Basin to spawn in areas with wild salmon. To meet the management goal of reducing the number of hatchery spawners, hatchery smolts were acclimated and released in the Bull Run River, a tributary in the lower Sandy Basin. These acclimated fish were marked with Coded Wire Tags (CWTs) to differentiate them from other hatchery release groups and are expected to return to the Bull Run River instead of spawning in the upper basin. Spawning surveys will be conducted throughout the basin, although specialized wands are needed to scan all carcasses for CWTs so we can evaluate this release strategy.

Objectives: To evaluate an acclimation and release strategy for hatchery spring Chinook

salmon in the Sandy Basin by detecting Coded Wire Tags (CWTs) in adult salmon returning to spawn. Results will determine if acclimating and releasing hatchery fish in the Bull Run River will cause hatchery adults to home back to Bull Run and the lower Sandy River, reducing the number of hatchery fish spawning in the upper basin. This strategy was chosen because other studies indicate that hatchery fish will likely return to the area where they were acclimated. Reducing the proportion of hatchery origin spawners (pHOS) is an important management goal and Marmot Dam is no longer available to exclude hatchery fish from the upper basin. The objective of this study is a key component of the overall management goal to reduce pHOS for the Sandy Basin to protect wild spring Chinook salmon. Adult spawners from the group released in the Bull Run River will continue return in later years. These CWT wands last for many years and can be used to recover tags from spawners for many more spawning seasons.

Fishery Benefits:

The NOAA permit for hatchery operations in the Sandy Basin requires pHOS of 10% or less, although this goal has only been met during one spawning season since Marmot Dam was removed in 2007. This is done primarily by excluding hatchery fish from the upper basin where most wild fish spawn. By achieving this management goal, hatchery operations can continue to provide fish for recreational anglers. This release strategy would cause hatchery fish to home in on the lower river where they are more likely to be caught.

Watershed Benefits:

Reducing pHOS of spring Chinook salmon applies directly to fishery management goals in the basin. This project will inform managers about the benefits of using certain areas to release hatchery fish so that they will not spawn with wild fish. If successful, these results can provide more opportunity for anglers to catch hatchery salmon with less risk of affecting native fish that are listed under the endangered species act.

Current Situation:

Habitat and water quality is good overall in the upper basin where most wild spring Chinook salmon spawn. The U.S. Forest Service continues to improve spawning habitat in the upper basin by adding logs, gravel, and other in-stream structures.

Alternatives:

We've explored options to borrow CWT wands from other agencies and have had some success doing so in the past. However, we now survey a larger area in the Sandy Basin later into October. We need more CWT wands for a longer period of time. We were unable to borrow any the last couple seasons and other surveys need them in October, when we will recover many salmon carcasses. We do not want to miss the opportunity to evaluate this strategy this spawning season and still require funding to secure at least three CWT wands for our survey crew. CWT wands are durable products that will help this study for many seasons.

Designer:

Luke Whitman will design this project with input from Todd Alsbury, the district biologist.

Methods:

Spring Chinook smolts from the Sandy Hatchery were separated into two groups and implanted differentially with CWTs. The first group was held in net pens in the lower Bull Run River to acclimate them to this spawning tributary, then they were

released. The second group was released in the Sandy River during the same period. We expect some proportion of the acclimated fish to return to the Bull Run River in a manner similar to that described by Schroeder et al. 2001.

The first adult salmon from the differentially marked groups will return to the Sandy Basin to spawn in 2014. Four, five, and six year old adults will return in 2015, 2016, and 2017. Staff from the Corvallis Research Lab will conduct spawning surveys in all spawning habitat in the Sandy Basin each of these years, following stand survey methods used from 2002 through 2013. Methods and results from earlier surveys can be found in Schroeder et al. 2013. All Chinook carcasses recovered during spawning surveys will be scanned to detect CWTs with specialized wands developed for this purpose. Snouts will be taken from each carcass with a CWT. In addition, staff at the Sandy Hatchery will scan all returning adults for CWT, taking snouts for analysis. All snouts and CWTs will be delivered to the ODFW in Clackamas where a specialized lab will remove and read the CWTs. Codes on each CWT will determine the group of smolts that these adult salmon came from. Spawning surveys will continue in 2015, 2016, and 2017 to determine the number of all adult fish returning from the two release groups. The CWT wands requested in this proposal are durable products that last for many years and the same wands will be used for surveys from 2014 through 2017.

Preliminary results from the 2014 will be summarized and reported to the R & E board in the spring of 2015. Results from the first two return years can still help guide management and release strategies in the basin, before all years have returned. Final results, after all groups of adults have returned, will be reported in the winter of 2018.

Schroeder, R. K., R. B. Lindsay, and K. R. Kenaston. 2001. Origin and straying of hatchery winter steelhead in Oregon coastal rivers. *Transactions of the American Fisheries Society* 130:431-441.

Schroeder, K., B. Cannon, L. Whitman, and M. Walker. 2013. Sandy Basin spring Chinook salmon spawning surveys – 2012. Annual Progress Report F-163-R-17/18. Oregon Department of Fish and Wildlife, Salem.

Inspector: Results of the release strategy will be reviewed internally by ODFW managers and the district biologist for the Sandy Basin. We will present our findings to the Restoration and Enhancement Board before distributing them to the general public.

Funding Elements: R&E funds will be used only to purchase three CWT wands for spawning surveys. We have already implanted hatchery spring Chinook salmon with CWTs, acclimated them, and released them. Personnel time for ODFW spawning surveys is already budgeted and will be paid for by the Sportfish Restoration Fund. Analysis and reporting will be completed by ODFW staff at the Corvallis Research Lab that are currently funded by the Sportfish Restoration Fund.

Partners: Yes
 District and hatchery staff have already marked, acclimated, and released hatchery smolts in the Bull Run River. We will work closely with them to evaluate the results of this strategy. In addition, we coordinate spawning surveys with staff from the Portland Water Bureau. The ODFW office in Clackamas will read all CWTs recovered and provide data on the origin of the spawning adult salmon. Time and support provided by these partners greatly reduces the amount of funding needed to evaluate this acclimation and release strategy.

Existing Plan: No

Affected Contacted: Yes

Affected Supportive: Yes

Affected Comments: We work closely with district staff to coordinate our spawning surveys and sample adult salmon at weirs in the upper Sandy Basin. They fully support our activities and the district biologist will help analyze CWT return data. The Sandy Hatchery will provide data on any tagged fish from the release groups that return to the hatchery. The Portland Water Bureau knows that we will be conducting spawning surveys in the Bull Run River in 2014 and we work with them on many surveys. They currently support ODFW operations in the Bull Run Basin.

Project Schedule/Participants/Funding

Activity	Date	Participants
Purchase CWT wands with R&E funds	8/1/2014	Luke Whitman (ODFW)
Spawning surveys for spring Chinook salmon	8/15/2014	EBA suveyors (ODFW)
Scan all adult Chinook salmon returning to spawning areas for CWTs	8/15/2014	EBA suveyors (ODFW)
Read CWTs and identify origin	11/10/2014	Clackamas CWT Lab (ODFW)
Analyze CWT return data	12/1/2014	Luke Whitman (ODFW)
Report on results of release strategy	4/15/2015	Luke Whitman (ODFW)
Continue spawning surveys to detect CWTs from future return years	8/15/2015	EBA suveyors (ODFW)

Affected Species: Chinook Salmon

Project Permits

Name	Issued By	Secured?	Date Secured	Date Expected
ESA Section 7 Take Authorization	NMFS	Yes	1/1/2014	8/1/2014
Oregon Scientific Take Permit	ODFW	Yes	1/1/2014	8/1/2014

Project Monitoring

Organization	Address	Activity	Frequency
Oregon Department of Fish and Wildlife	28655 Highway 34 Corvallis, OR 97333	Spawning surveys to monitor the population of Chinook salmon in the Sandy Basin	Annually since 2002, August 15th through October 31st.

Project Maintenance

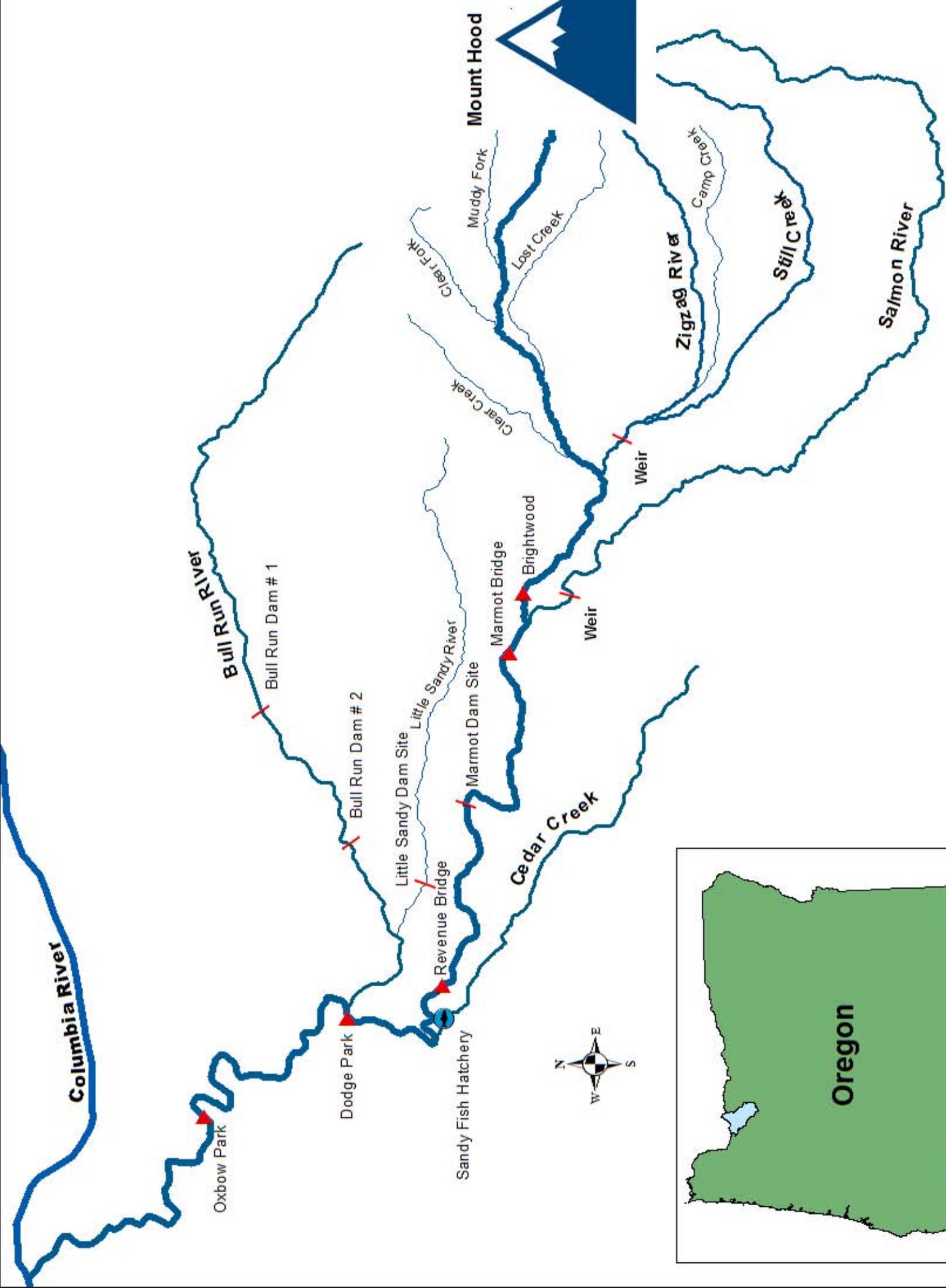
This project has no maintenance plans.

Project Match Funding

Funding Source	Cash	In-Kind	Other	Description	Total	Secured?	Conditions?	Comments
R&E Request	\$11,250.00	\$59,572.25	\$0.00		\$70,822.25	No	No	
				Total Match Funding:	\$70,822.25			

Project Budget

Item	Item Type	Units	Unit Cost	R&E Funds	Match Funds	Total
T-wand detector for coded wire tags	Equipment	3	\$3,750.00	\$11,250.00	\$0.00	\$11,250.00
ODFW EBA spawning surveyors	Personnel	13	\$3,968.25	\$0.00	\$51,587.25	\$51,587.25
ODFW NRS-3; Data analysis and reporting	Personnel	1	\$7,985.00	\$0.00	\$7,985.00	\$7,985.00
					Total Budget:	\$70,822.25



Mount Hood

Columbia River

Bull Run River

Bull Run Dam # 1

Bull Run Dam # 2

Little Sandy Dam Site

Sandy Fish Hatchery

Revenue Bridge

Little Sandy River

Marmot Dam Site

Marmot Bridge

Cedar Creek

Brightwood

Weir

Weir

Clear Creek

Muddy Fork

Lost Creek

Zigzag River

Camp Creek

Still Creek

Salmon River



Oregon

Applicant Signature Page
Fish Restoration and Enhancement Program
(Oregon Department of Fish and Wildlife Applicants)

I hereby make an application for financial assistance under the terms and conditions of the Fish Restoration and Enhancement Program as described in my project application. I acknowledge that:

- This proposal is an identified priority at the district, region, and/or state level and has been identified as such in the application (check box for appropriate level).
- This proposal is consistent with any applicable goals, policies, rules, species or basin management plans adopted by the F&W Commission and this has been explained in the application.
- This proposal will not be used to cover, back fill, or fund shift elements that have been cut or defunded as part of agency budget reductions. Approved deferred maintenance or projects with division approval are exceptions.

I understand that if my project proposal is approved for Restoration and Enhancement (R&E) Program funding, the following will apply:

- Applicants must sign an agreement containing the terms and conditions for the project implementation, release of funds, and documentation of completion. Non-compliance may impact future funding opportunities.
- The R&E Program will not pay for expenses which occur before the approved start date or after the end date.
- Funding is available one biennium only without prior authorization by the R&E Board.
- Applicant agrees to notify the R&E Program of all funds not needed for the project upon determination.
- Any inappropriate expenses using R&E funds will be corrected by the applicant immediately. By the close of the biennium any expenses exceeding, or not identified in, the grant approval will be reverted to a local cost code.
- Copies of all landowner, monitoring and maintenance agreements must be submitted to the R&E Program.
- Educational products resulting from projects are public domain.
- Information collected is subject to Oregon Public Records Law.
- As applicable, the project will be consistent with all federal, state, and local regulations, including the State Land Use Planning Goals & Local Land Use Plans, prior to any on the ground work.

By signing this application, I certify to the best of my knowledge that the information contained in the application are true, complete and accurate. If awarded funding the applicant agrees to follow all terms and conditions outlined in the agreement.

Project Title: Recovering Coded Wire Tags in the Sandy Basin

Applicant Name: Luke Whitman Title: Acting Project Leader

Applicant Signature:  Date: 4/4/2014

Manager Certification:

To be completed by Watershed Manger, Hatchery Coordinator, Program Manager, or higher level manager.

- I concur with the statements above and the applicant has permission to request these funds.

Manger Name: Kelly Moore Title: PEM-D Research Program Mgr

Manager Signature:  Date: 4/7/2014