



R & E Grant Application 13 Biennium

**Project #:
13-083**

N FK Nehalem R Steelhead Enhancement Project

Project Information

R&E Project Request: \$11,853.00
Match Funding: \$13,105.00
Total Project: \$24,958.00
Start Date: 11/1/2014
End Date: 6/30/2015
Project Email: ron.f.rehn@state.or.us
Project Biennium: 13 Biennium
Organization: ODFW - North Coast Watershed District

Applicant Information

Name: Ron Rehn
Address: 4907 East Third Street
 Tillamook, OR 97141
Telephone: 503-842-2741 x244
Fax: 503-842-8385
Email: ron.f.rehn@state.or.us

Past Recommended or Completed Projects

Number	Name	Status
09-196	Loren's Pond Enhancement Project Phase I (Design)	Completed
09-299	NCWD Equipment & Supplies	Completed
11-038	Rhoades Pond Restoration Project	Completed
11-076	Loren's Pond Enhancement Project Phase II	Completed
11-077	Lake Lytle Angling Dock Replacement Project	Completed
11-174	NCWD & TRH Equipment	Completed
13-048	Rhoades Pond Clipping Cover Restoration Project	Recommended

Project Summary

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

Activity Type: Monitoring
Summary: This project seeks funding to implement the second phase of a multi-year effort to evaluate and improve winter steelhead fishing opportunities on the North Fork Nehalem River. This began in response to a common observation and concern among anglers on the North Fork Nehalem River that returning steelhead pass through the primary fishery area (Aldervale to Nehalem Hatchery) quickly and provide limited harvest opportunity. The first phase was to characterize migration

habits of returning adults. To accomplish this, we used radio telemetry to identify baseline migration characteristics of adult hatchery winter steelhead returning to the North Fork Nehalem River over the last three return periods (2011-12, 2012-13 and 2013-14).

Results from Phase 1 showed average return rates (to the hatchery area) for steelhead captured and tagged in the lower river was similar among the three return periods 19 days (2011-12), 13 days, (2012-13), 13 days (2013-14). These results suggest that despite differences in flow regimes and water temperature among the three years, migration from tidewater to the hatchery often happens over of weeks and not days. The pooled three year average for all types that returned to the hatchery area is 31 fish for a pooled average of 15-days. Pooled average for fish straying in lower river is 16-days.

The next step will be to implement Phase 2 and evaluate the relationships between hatchery steelhead juvenile release location (hatchery volitional vs. two in-river sites) and subsequent adult catch by sport anglers (see map). While Phase 1 showed as generalized migration characteristics, information collected during Phase 2 will allow us to specifically determine which hatchery release method(s) optimize fishery performance, and as an added benefit, reduce stray rates. For this, existing winter steelhead hatchery production have been divided into three unique fin-clipped groups that are released as yearling smolts at three different points along the river (i.e. Hatchery, County Line, and Aldervale) (see attached map). As release groups return as adults, we will use creel surveys to evaluate their relative contribution to sport catch throughout the return period. Marking started with the 2011 brood that was released in 2012. Four years of differential marking and releases has occurred. Creel surveys would then be conducted commencing with the 2015-16 return year and continue for a period of three years. This will require returning to the R&E Board Cycle 1 of the 2016-18 Biennium to fund the two remaining years. The creel survey will follow an access-access design where both catch and effort will be estimated using access-based surveys. The creel clerk will wait at a predetermined location and record information from anglers as they exit the fishery. Data will be recorded on the origin (i.e., stocking locations) and number of fish harvested and released as well as the amount of time each angler fished. Total catch of each group of fish will be estimated be divided the observed catch by the sampling probability providing valuable information on catchability of these fish.

Differences in catch among each release group will be modeled using multinomial logistic regression. Model selection methods will be used to test for differences in catch among each group as well as effects of other covariates such as date, location of catch, and discharge. Stray rates relative to release location will also be documented where possible. Results from this work will help inform hatchery steelhead management in other basins. For example, the Alsea River hatchery steelhead program experiences many of the same issues as observed on the North Fork Nehalem. Fishery managers in both basins agree that monitoring in of this nature will provide for better decision-making well into the future

Objectives:

The objectives of this project are to:

- Evaluate performance of smolt release sites to subsequent adult catch rate
- Improve retention of hatchery winter steelhead in the lower North Fork Nehalem,
- Increase angler catch rates of hatchery fish.
- Reduce straying

**Fishery
Benefits:**

The North Fork Nehalem supports a popular winter steelhead fishery used by many anglers utilizing both boat, and bank for access. As stated in the Project Summary there is a common observation and concern among anglers on the North Fork Nehalem River that once returning hatchery steelhead pass through tide water they make a direct and rapid run to the hatchery providing very limited harvest opportunity. The goal of this project is to improve retention of winter steelhead in the lower North Fork Nehalem, and increase angler catch rates of hatchery fish. This project also encompasses two main Actions identified in the 25-Year Angling Enhancement Plan:

1. Evaluate Existing Fisheries and Identify New Opportunities (Goal 1, Strategies c, d, e, and f)
 2. Develop and Implement Actions within the Hatchery System to Enhance Angling Opportunities (Goal 1, Strategy b)
- Management practices to improve the efficiency of hatchery production in the fishery as a result of implementing this project will provide many benefits to the fishery.

Watershed Benefits:	As stated in the Objectives section, this project will evaluate performance of smolt release sites to catch rate to improve retention of winter steelhead in the lower North Fork Nehalem, and increase angler catch rates of hatchery fish. Achieving these objects would reduce hatchery stray rates and potential impacts to native stocks.
Current Situation:	Currently there is a common observation and concern among anglers on the North Fork Nehalem River that returning steelhead pass through the primary fishery area (Aldervale to Nehalem Hatchery) quickly and provide limited harvest opportunity. We recently completed a project identifying some baseline migration characteristics of adult hatchery winter steelhead returning to the North Fork Nehalem River. However, there is still more data needed to evaluate the relationships between hatchery steelhead juvenile release location (hatchery volitional vs. two in-river sites) and subsequent adult catch by sport anglers.
Alternatives:	Other alternatives for this project were: 1) Only release fish volitionally from hatchery. Though this could reduce potential straying of fish from smolts released in the lower river creel monitoring would still be required to evaluate both straying and fishery performance. (Not preferred) 2) Continue with the three release sites for smolts. Without effective monitoring this option would be very risky for fishery management. (Not preferred)

Designer: ODFW

Methods: Marking started with the 2011 brood that is scheduled for release in 2012. Creel surveys would then be conducted commencing with the 2015-16 return year, and continue for a period of three years. This will require returning to the R&E Board Cycle 1 of the 2016-18 Biennium to fund the two remaining years. The creel survey will follow an access-access design where both catch and effort will be estimated using access-based surveys. The creel clerk will wait at a predetermined location and record information from anglers as they exit the fishery. Data will be recorded on the origin (i.e., stocking locations) and number of fish harvested and released as well as the amount of time each angler fished. Total catch of each group of fish will be estimated by dividing the observed catch by the sampling probability providing valuable information on catchability of these fish.

Differences in catch among each release group will be modeled using multinomial logistic regression. Model selection methods will be used to test for differences in catch among each group as well as effects of other covariates such as date, location of catch, and discharge. Stray rates relative to release location will also be documented where possible.

Inspector: n/a

Funding Elements: R&E funds will be used for field gear, vehicle rental & maintenance, and hire a creeler. Personnel duties include: The creel clerk will wait at a predetermined location and record information from anglers as they exit the fishery. Data will be recorded on the origin (i.e., stocking locations) and number of fish harvested and released as well as the amount of time each angler fished

Partners: No

Existing Plan: Yes

This project also encompasses two main Actions identified in the 25-Year Angling Enhancement Plan:
1. Evaluate Existing Fisheries and Identify New Opportunities (Goal 1, Strategies c, d, e, and f)
2. Develop and Implement Actions within the Hatchery System to Enhance Angling Opportunities (Goal 1, Strategy b)

Affected Contacted: No

Affected Supportive: No

Project Schedule/Participants/Funding

Activity	Date	Participants
Start hiring process	10/15/2014	ODFW
Hire EBA/obtain vehicle & equipment	11/15/2014	ODFW
Start creel work	12/11/2014	ODFW
End creel work	2/28/2015	ODFW
Compile data	4/15/2015	ODFW
Submit Completion Report	6/15/2015	ODFW

Affected Species: Steelhead

Project Permits

This project has no permits.

Project Monitoring

Organization	Address	Activity	Frequency
ODFW	4907 Third St Tillamook, OR 97141	Fishery monitoring	Monthly

Project Maintenance

This project has no maintenance plans.

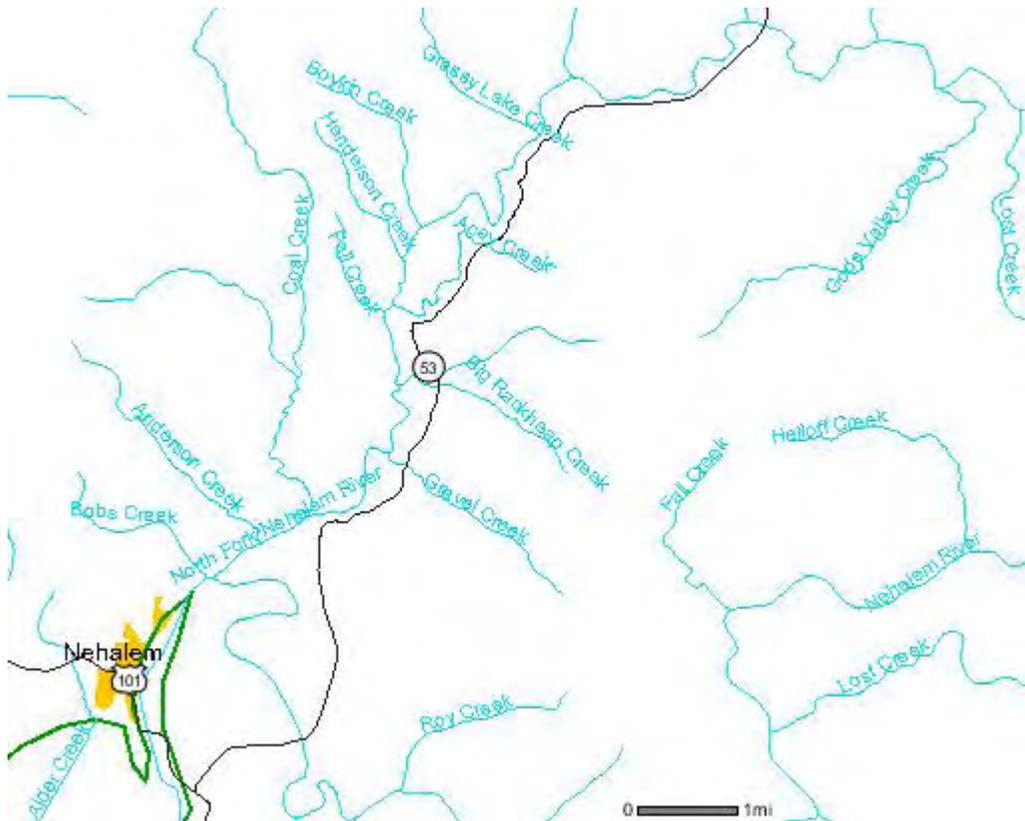
Project Match Funding

Funding Source	Cash	In-Kind	Other	Description	Total	Secured?	Conditions?	Comments
R&E Request	\$11,853.00	\$0.00	\$0.00		\$11,853.00	No	No	
ODFW	\$0.00	\$7,000.00	\$0.00		\$7,000.00	Yes	No	Max clips 2012-2015
ODFW	\$0.00	\$6,105.00	\$0.00		\$6,105.00	Yes	No	Personnel oversight/modeling
				Total Match Funding:	\$24,958.00			

Project Budget

Item	Item Type	Units	Unit Cost	R&E Funds	Match Funds	Total
Maxillary Clip/ 45K	Contracted Services	5	\$1,400.00	\$0.00	\$7,000.00	\$7,000.00
Field Gear	Equipment	1	\$300.00	\$300.00	\$0.00	\$300.00
Vehical Rental	Equipment	3	\$350.00	\$1,050.00	\$0.00	\$1,050.00
EBA Creel Sampler/OPE	Personnel	3	\$3,381.00	\$10,143.00	\$0.00	\$10,143.00
NCWD Biologists	Personnel	130	\$28.50	\$0.00	\$3,705.00	\$3,705.00
ODFW Biometrican	Personnel	80	\$30.00	\$0.00	\$2,400.00	\$2,400.00
Vehical Maintenance	Supplies/Materials /Services	3	\$120.00	\$360.00	\$0.00	\$360.00
					Total Budget:	\$24,958.00

Project Map



Additional Files

Click a link to view that particular file.

[Dist. letter of support](#)

[OHRC letter of support](#)

[Signature Page](#)

[Smolt Release Site Map](#)

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.

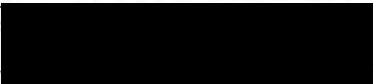
I understand that if my project proposal is approved for Restoration and Enhancement (R&E) Program funding, the following will apply:

- 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: N FK Nehalem R. Steelhead Enhancement Project

Applicant Name: Ron Rehn Title: STEP Biologist

Applicant Signature:  Date: 4-3-14

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: Rick Klumph Title: N.C. Watershed Manager

Manager Signature:  Date: April 3, 2014



Oregon

John A. Kitzhaber, MD, Governor

Department of Fish and Wildlife

North Coast Watershed District

4907 Third Street

Tillamook OR 97141

(503) 842-2741

FAX (503) 842-8385

www.dfw.state.or.us



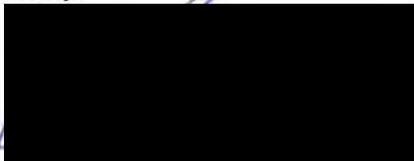
April 2, 2014

Restoration & Enhancement Board
Oregon Dept. of Fish & Wildlife
3406 Cherry Ave. NE
Salem, OR 973063

Dear R&E Board:

The Oregon Department of Fish and Wildlife (ODFW) is providing this letter in support of the NCWD (North Fork Nehalem River Steelhead Enhancement Project) R&E grant application to provide funding to evaluate the relationships between hatchery steelhead juvenile release location (hatchery volitional vs. two in-river sites) and subsequent adult catch by sport anglers. The objective is to evaluate performance of smolt release sites to catch rate in an effort to improve retention of winter steelhead in the lower North Fork Nehalem and increase angler catch rates of hatchery fish. Funds will be used to conduct creel survey. This project encompasses actions identified in the 25-Year Angling Enhancement Plan and addresses ODFW mission goals. We strongly urge your approval of this application.

Sincerely,



Chris Knutsen
North Coast District Fish Biologist
Oregon Dept. Fish & Wildlife
4907 East Third St.
Tillamook, OR. 97141





Oregon

Ted Kulongoski, Governor

Department of Fish and Wildlife
Oregon Hatchery Research Center
2418 East Fall Creek Rd
Alsea, OR 97324
(541) 487-5510
FAX (541) 487-5534



April 4, 2014

To Restoration and Enhancement Board Members:

The Oregon Hatchery Research Center (OHRC) is tasked with the mission to understand the mechanisms that create differences between hatchery and wild fish and develop management practices to maintain recreational fisheries while protecting native populations of fish. The OHRC has worked to support the research done on the Nehalem River for the past three years by providing radio telemetry receivers and antenna as well as a small number of radio tags. The behavioral research that has been completed to date has provided fishery managers a much better understanding of migration characteristics of winter steelhead returning to the Nehalem River.

The proposed work for phase 2 of this project will provide managers a better idea of practices that optimize fishery performance while reducing stray rates. These critical points are very much in line with the operational mission of the OHRC as well as the goals of the agency. The OHRC fully supports this steelhead research on the Nehalem as it supports the work at the OHRC as well as steelhead research currently underway in the Alsea River basin. Optimizing fishery performance and reducing hatchery stray rates are both extremely vital parts of this project and are both vital to responsible management of hatcheries in the future.

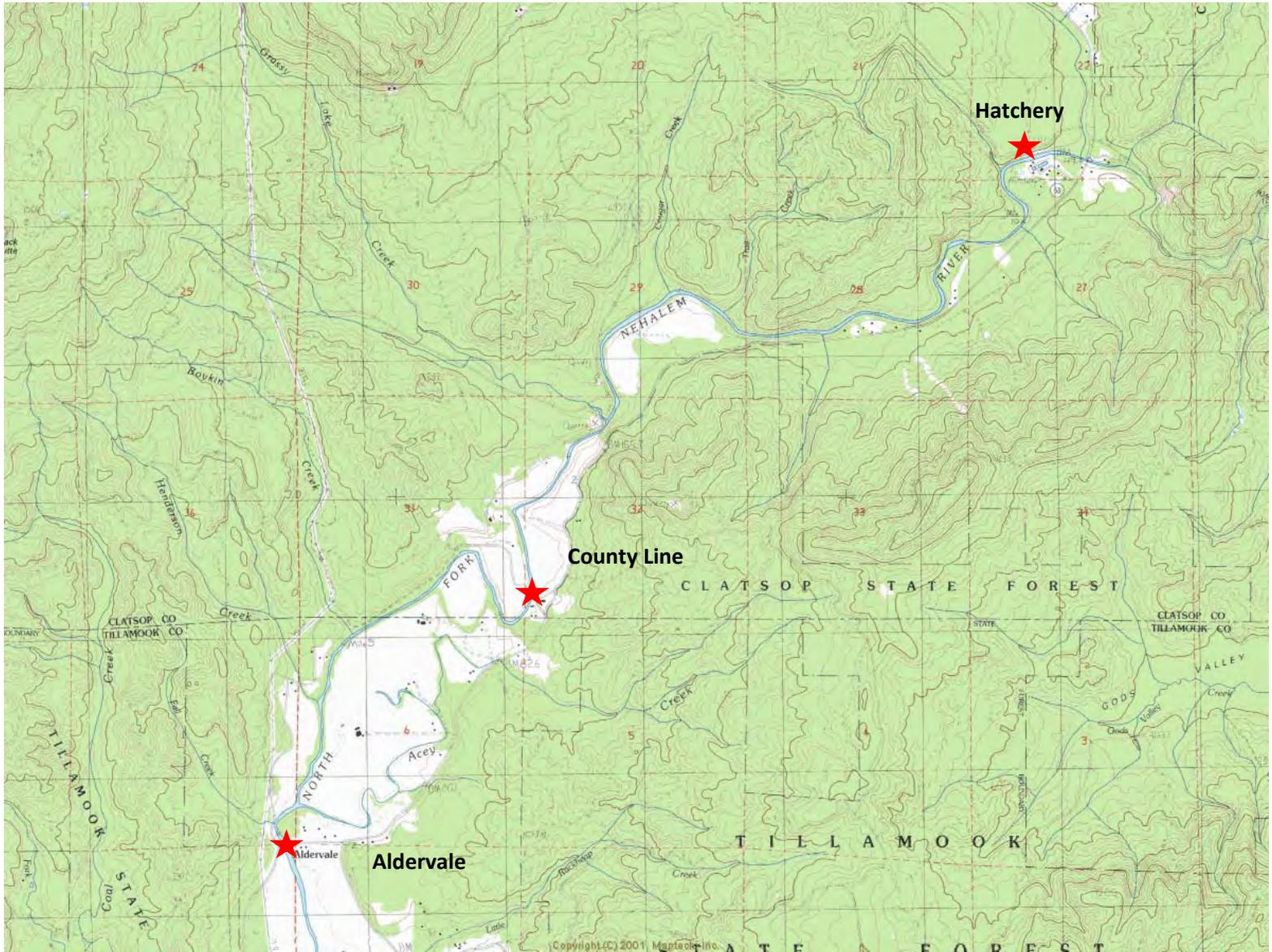
Thank you for considering this project for funding.

Sincerely,



Ryan Couture
Oregon Hatchery Research Center
Facility Manager
2418 East Fall Creek Rd
Alsea, OR 97324
541-487-5510 ex.100
Ryan.b.couture@state.or.us

Smolt Release Site Map



Hatchery Release: Smolts marked AD (adipose fin clip only)

County Line Release: Smolts marked ADLM (adipose fin and left maxillary clip)

Aldervale Release: Smolts marked ADRM (adipose fin and right maxillary clip)