R & E Grant Application 17-19 Biennium

Project #: 17-019

Necanicum River StW Evaluation Project

Project Information

Requested Cycle:	17-2
R&E Project Request:	$60,250
Other Funding:	$8,780
Total Project:	$69,030
Spending Start Date:	11/1/2017
Spending End Date:	6/30/2018
Project Start Date:	10/1/2017
Project End Date:	6/30/2018
Organization:	Oregon Department of Fish and Wildlife

Applicant Information

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Past Recommended or Completed Projects

This applicant has no previous projects that match criteria.

Authorized Agent

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Location Information

Where is it?

The project will not occur on any property

Project Summary

Project Summary

Please provide a couple sentence summary of the proposal.

Conduct spawning and creel surveys to develop an understanding of the distribution of hatchery winter steelhead in the Necanicum River, and the recreational fishery harvest under the current hatchery smolt release strategy. Set a baseline for comparison to future returns of differentially marked hatchery release groups, and alternate release strategies.

Overall Project Goals

Describe the primary goals or outcomes of the entire project, including elements not requesting funding from R&E.

To maintain or improve hatchery harvest opportunity and retention of winter steelhead in the Necanicum River.

To reduce the percent of hatchery origin spawners (pHOS) of winter steelhead in the Necanicum River basin, in compliance with the Coastal Multi-Species Conservation and Recovery Plan (CMP).

Primary objectives of R&E funding

Please describe the measurable objectives for the R&E portion of the funding request.

Survey winter steelhead spawning areas in the Necanicum River basin for the presence of hatchery fish, and to evaluate pHOS.

Evaluate recreational fishery harvest of Necanicum hatchery winter steelhead.

Current Situation/Justification

Please describe the current situation and explain why this funding is needed.

For the Necanicum River, the CMP identifies high levels of naturally spawning hatchery winter steelhead as a possible risk to wild steelhead in the basin. The CMP directs ODFW to develop a strategy to reduce the number of hatchery winter steelhead spawning naturally, while maintaining the sport harvest opportunity within the basin. Currently ODFW releases 40,000 hatchery winter steelhead into the Necanicum River. Releases are made at three mainstem locations. These releases are spread out into what could be roughly called the upper, middle, and lower river, and correspond to areas with public access, both via bank and boat. This spring ODFW will be releasing three equal groups of hatchery winter steelhead smolts that have been differentially marked. Conducting spawning surveys and creel during the winter 2017/2018, before adults from the new release strategy return, would create a base line which should allow us to detect changes relative to the current program.

Recreation and Commercial Benefit

This project will provide benefits to:

Recreational fisheries

Explain how this project will contribute to current (and/or potential) fishing opportunities, access, or fisheries management.

Through spawning surveys, and live steelhead capture on the spawning grounds, coupled with creel surveys, this project will create a baseline of the Necanicum River hatchery winter steelhead fishery performance, and hatchery steelhead spawning distribution in the Necanicum River basin. This baseline will allow us to accurately detect changes to fishery performance and pHOS when alternate hatchery smolt release strategies are implemented in the future. ODFW's goal is to maintain or improve fishery performance while reducing stray rates and pHOS.

Percent benefit split between Commercial and Recreational anglers:

0 % Commercial
100 % Recreational

Please explain, or justify, how the percentage split was determined:

There are no commercial fisheries for winter steelhead that would target Necanicum basin stocks.

This project has been identified as an ODFW priority for:

Basin/regional

Does this project directly support implementation of the ODFW Strategic Plan and/or current Fish Division priorities?

Please briefly explain when this was identified as a priority and what process or workgroup was used to identified this as an ODFW priority.

Identify any plan or other document that identifies this priority.

Coastal Multi-Species Conservation and Recovery Plan

Is this project part of an approved Salmon-Trout Enhancement Program (STEP) activity?

No

This project is intended to benefit the following species:

Winter Steelhead

This project will benefit anglers or fishery by providing:

Angling Opportunity
Monitoring/Research

Angling Opportunity

This project will:

Improve the opportunity for anglers to catch fish (better stocked fish, trapping)

Monitoring/Research

This project will be used to evaluate:

Hatchery releases and/or stray rates
Fishery contribution
Distribution (i.e. presence, abscence, abundance)

Has this project been reviewed or developed by an individual with appropriate qualifications (i.e ODFW biometrician, research professor)?

Yes

The plan has been reviewed by ODFW Conservation and Recovery Program staff and by the ODFW biometrician.

Is this study critical to fishery management decisions?

Yes

To determine if future changes in hatchery winter steelhead smolt release strategies will have an effect on the recreational fishery on the Necanicum River, while reducing stray rates and pHOS.

Yes

Changes to hatchery winter steelhead smolt release strategies are planned for the spring of 2017. This project will develop baseline information that ODFW can use to compare to future fishery performance and hatchery steelhead spawning distribution once those changes are implemented. Release strategy changes will be evaluated relative to the baseline information collected through this project.

Is there a plan to repeat this monitoring or research in the future?

Yes

Winter steelhead spawning surveys, and recreational fishery creel surveys are planned to be implemented beginning in the winter of 2019/2020, after new smolt release strategies have been implemented, and all age classes of differentially marked adult winter steelhead are returning. In addition, adult trapping at the tributary release site is planned.

Will the data be reported or published?

Yes

Results of this project will be developed into a completion report to the R&E board, and will be shared internally within ODFW. However, this project will produce the baseline for comparison and evaluation to inform future fish management decisions and the results of the broader scale work will be developed into a summary report to ODFW Fish Division and Hatchery Propagation.

Project Description

Schedule

Activity	Date	RE Funding
Start hiring process.	10/2017	No
Hire EBA's/obtain vehicles and equipment	12/2017	Yes
Start Spawning survey and creel work	12/2017	Yes
End Creel work	02/2018	No
End Spawning survey work	04/2018	No
Compile data	06/2018	No
Submit Completion Report	06/2018	No

Permits

Permit	Secured?	Date Expected
N/A	No	

Project Design and Description

Please describe in detail the methods or approach that will be used to achieve the project objectives.

The Coastal Multi-Species Conservation and Recovery Plan (CMP) recently adopted by ODFW provides guidance for management of fishery resources on the coast over the next several years. Among the management strategies outlined in the CMP is the use of hatchery fish to provide sport harvest opportunity while meeting conservation needs in locations where hatchery fish are released. Primarily, the CMP utilizes the percent of hatchery origin spawners (pHOS) in

natural spawning areas as the measurement to determine if the number of hatchery fish spawning in the wild are meeting objectives laid out in the plan.

For the Necanicum River, the CMP identifies high levels of naturally spawning hatchery winter steelhead as a possible risk to wild steelhead in the basin. The CMP directs ODFW to develop a strategy to reduce the number of hatchery winter steelhead spawning naturally, while maintaining the sport harvest opportunity within the basin. The following outlines the general approach the Tillamook District is proposing to implement this portion of the CMP.

For background, currently ODFW releases 40,000 hatchery winter steelhead into the Necanicum River. Releases are made at three mainstem locations. These releases are spread out into what could be roughly called the upper, middle, and lower river, and correspond to areas with public access, both via bank and boat. All releases are direct releases via liberation truck with no acclimation, and there are no recapture sites in the basin.

ODFW North Coast Watershed District is currently conducting exploratory spawning surveys for winter steelhead in the Necanicum basin in order to identify areas where hatchery and wild steelhead spawn. This information is being used to design a future strategy to monitor presence of hatchery fish on the spawning grounds, and preemptively deal with any access issues or other constraints. Work is being conducted by district staff as time and schedules allow.

Starting in December of 2017 R&E funds would be used to hire a crew of two temporary spawning surveyors, and one temporary creel surveyor to conduct surveys on the Necanicum River basin. Steelhead surveys will be conducted in winter steelhead spawning surveys identified by the district. Spawning surveys will consist of redd counts, live fish observations, and live fish captures using primarily dip nets and/or tangle nets to positively identify fin marks, and therefore proportions of hatchery vs. wild steelhead on the spawning grounds. Creel surveys will be designed with assistance from the ODFW staff biometrician to evaluate the recreational fishery and harvest of hatchery winter steelhead. This work will generate data to be used as a baseline to compare to future performance of the hatchery winter steelhead program in the Necanicum.

Engineering

Does the project involve capital improvement, engineering, site grading or other construction?

No

Project Management and Maintenance

What is the life expectancy of R&E funded construction, structures, equipment, supplies, data or fishery?

N/A

Who is responsible for long term management, maintenance, and oversight of the project beyond what is funded by R&E.

N/A

Will the project require ongoing maintenance?

No

Is there a plan to collect baseline data and to conduct monitoring efforts to measure the effectiveness of the project?

Yes

This work would provide the baseline data needed for future comparison.

Project Funding

Funding

Have you applied for OWEB funding for this project?

No

Has this proposal, or similar proposal for this project location, previously been denied by OWEB or other funding source?

[{"source":"ODFW","type":"In-Kind","secured":"Secured","dollarValue":7540,"comments":"Personnel/surveying"},{"source":"ODFW","type":"In-Kind","secured":"Secured","dollarValue":1240,"comments":"Personnel/Oversight"}]

Other Funding Source	Type	Secured	Dollar Value	Comments
ODFW	In-Kind	Secured	7540	Personnel/surveying
ODFW	In-Kind	Secured	1240	Personnel/Oversight
		Total	8780	

Budget

Item	Unit Number	Unit Cost	In-kind or non-cash contributions	Funding from other sources	R&E Funds	Total Costs
PROJECT MANAGEMENT						
ODFW NCWD Biologists	260	29.00	7540	0	0	7540
		SUBTOTAL	7540	0	0	7540
IN-HOUSE PERSONNEL						
ODFW Biometrician	40	31.00	1240	0	0	1240
ODFW Creel Sampler (Salary and Benefits)	3	4100.00	0	0	12300	12300
ODFW Spawning Surveyors (Salary and Benefits)	10	4100.00	0	0	41000	41000
		SUBTOTAL	1240	0	53300	54540
CONTRACTED SERVICES						
			0	0	0	0
		SUBTOTAL	0	0	0	0
TRAVEL						
Motorpool Vehicle Rental	3	400.00	0	0	1200	1200
Motorpool Vehicle Rental	5	400.00	0	0	2000	2000
Fuel	8	300.00	0	0	2400	2400
		SUBTOTAL	0	0	5600	5600
SUPPLIES/MATERIALS						
Field Gear	3	450.00	0	0	1350	1350
		SUBTOTAL	0	0	1350	1350
EDUCATION/OUTREACH						
			0	0	0	0
		SUBTOTAL	0	0	0	0
EQUIPMENT						
			0	0	0	0
		SUBTOTAL	0	0	0	0
FISCAL ADMINISTRATION						
			0	0	0	0
		SUBTOTAL	0	0	0	0
		BUDGET TOTAL	8780	0	60250	69030

Internal Review Results

Review Score: 2.1 out of 3

(0 = Do Not Fund, 1 = Strengthen Proposal, 2 = Recommend, 3 = Strongly Recommend)

Summary of Review Team Comments

The review team was generally supportive of this proposal as it directly supports implementation of the Coastal Multispecies Plan through decreasing pHOS while maintaining fisheries. However, the information in the application was not complete or thorough enough to fully explain the proposal. Review team scores included eight 2s, and one 3.

Specific Review Team Comments

Good baseline study that will enable a later study of later release strategies that will help compliance with CMP.

Specific Review Team Questions

Please further explain how this effort fits into the CMP?

Specifically, under "Hatchery Winter Steelhead Actions" on page 50 of the CMP, it reads: "Necanicum StW - in order to reduce pHOS; 1)identify a tributary for releases, 2)possibly use weirs to retain returning hatchery adults." Historically, hatchery Winter Steelhead have been released in the Necanicum River at three main stem release sites. This spring (2017) hatchery Winter Steelhead were released at a new tributary release site, in Volmer Creek and at two of the previous main stem release sites. This project would create a baseline for comparison to the future hatchery returns, released under the new strategy of including a tributary release. This information will be vital in identifying the effectiveness of the tributary release at reducing pHOS, and at evaluating the performance of the tributary released hatchery steelhead in the fishery.

Need further explanation of what the changes to release strategy will be, beyond just differentially marking the three release groups. What is the new release strategy? Was not explained. Part of study is to look at pHOS of hatchery StW. What will you plan to do if pHOS is too high? What are your options for this StW program, in this basin?

Previously 40K hatchery winter steelhead smolts have been released in the Necanicum River in three equal, main stem releases located in the upper (Black's bridge), middle (Klootchie County Park), and lower (Teevin Bros. Quarry) basin. This spring we implemented the new release strategy, by moving the mid basin hatchery winter steelhead smolt release from the main stem at Klootchie County Park to a tributary release in Volmer Creek. Volmer Creek is a small tributary to the Necanicum River, which enters the river just upstream of Klootchie County Park (still mid basin). The other two releases remained at the upper and lower basin main stem release sites. Each release group was differentially marked, so that in the future we will be able to make correlations between the release location and adult presence on the spawning grounds, as well as performance in the recreational fishery. Currently we believe that pHOS in this basin is too high, our hope is that the tributary release will return to Volmer Creek as adults, where they can be trapped and removed from the system before spawning naturally, thus reducing pHOS. The work outlined in this application will create a baseline for comparison to the adult returns from the tributary hatchery smolt release. Specifically, we want to know if the tributary release reduces pHOS, and also if the tributary released hatchery winter steelhead will contribute to the recreational fishery at a different harvest rate, then the main stem releases. We believe the tributary release is the most viable option for this StW hatchery program. Continuing

to release all hatchery StW smolts in the main stem will continue to leave pHOS at an undesirable level, and acclimation is not a financially or logistically viable option at this location.

"This baseline will allow us to accurately detect changes to fishery performance and pHOS when alternate hatchery smolt release strategies are implemented in the future. ODFW's goal is to maintain or improve fishery performance while reducing stray rates and pHOS." Will this grant request provide sufficient funding to see an improvement in "fishery performance"? When? If not, how much additional funding will be required? When will anglers see benefits? What will be the design of the subsequent study of the altered release strategy. What is the projected expense of that study?

The funding that would be provided by this grant, would create a baseline of fishery performance of adult hatchery winter steelhead in this basin from all main stem releases. This information is crucial to evaluating any changes, or improvements in fishery performance when we start getting adult hatchery StW returns back from this springs tributary release. Any changes would not be detectable until we get a complete cohort return from the Volmer Creek tributary, hatchery steelhead smolt releases, which began this spring. At that time, we will be interested in repeating the spawning and creel surveys outlined in this application. The methodology, and therefore cost, would be similar to the sampling outlined in this application.

How does a creel survey help reduce the percentage of hatchery origin spawners?

The change in release strategy, from three main stem hatchery StW smolt releases to two main stem and one tributary release (Volmer Creek), and the subsequent removal of hatchery StW adults which return to Volmer Creek will reduce pHOS which is our ultimate goal. However, the recreational fishery for winter StW in this basin is popular and it is important to the North Coast Watershed District that the change in release strategy (tributary release) does not have a negative effect on that fishery. It is our hypothesis that the tributary released hatchery StW will perform as well in the fishery as do the mainstem releases, but only by conducting creel surveys now to establish a baseline, and in the future when the tributary release returns as adults will we be able to detect changes in fishery performance.

Do the three marking strategies correspond to the three release locations? Are the spring 2017 releases from the same locations or different locations?

The three marking strategies used for this springs hatchery StW smolt releases do correspond to the three 2017 spring release locations. Upper basin main stem release group (ADRM), lower basin main stem release group (ADLM), and mid basin tributary release group (AD only). In the past hatchery StW releases were all main stem, and did not include the Volmer Creek tributary release. The 2017 spring releases utilize two of those main stem locations, but have switched the mid basin main stem release to a mid basin tributary release. This differential marking will allow us to evaluate whether the tributary release returns to Volmer Creek as adults, if the spawn naturally at a reduced rate, and if they perform differently in the recreational fishery. The work outlined in this application will create a baseline for comparison to those returns.

How are spawning survey locations being selected? GRTS, opportunistic, etc.?

Spawning survey locations are being selected opportunistically based on exploratory surveys conducted by District staff this past December and January. We have identified multiple location where high density natural StW spawning is occurring throughout the basin.

Will surveys be repeated with enough frequency to consider temporal overlap in calculation of pHOS (i.e., to account for differences in spawning timing between hatchery and wild fish)?

Yes they will; surveys will be conducted every 7 to 14 days. Furthermore, as the spawning survey methodology for this project include actual capture of adult spawners by dip net or tangle

net, positive identifications of hatchery vs. wild adult steelhead on the spawning ground will be made based on fin mark.

Additional Files

Budget Information

Maps

Necanicum Steelhead Distribution map	*Map of spawning survey areas on Necanicum River*

Photos

Design Information

Management Plans and Supporting Documents

Racial and Ethnic Impact Statement	*Racial and Ethnic Impact Statement*

Permits and Reviews

Partnerships

Public Comment

Administrative Documents

Applicant Signature Page	*Applicant Signature Page Fish R&E Program*

Completion Report

A completion report has not been submitted for this project.