



R & E Grant Application 13 Biennium

**Project #:
13-110**

ODFW Klamath Watershed Fish Management Equipment

Project Information

R&E Project Request: \$21,833.82
Match Funding: \$36,936.00
Total Project: \$58,769.82
Start Date: 12/31/2014
End Date: 6/29/2015
Project Email: william.r.tinniswood@state.or.us
Project Biennium: 13 Biennium
Organization: ODFW - Klamath Watershed Offices

Applicant Information

Name: William Tinniswood
Address: 1850 Miller Island Road
 Klamath Falls, OR 97603
Telephone: 541-883-5732
Email: william.r.tinniswood

Past Recommended or Completed Projects

Number	Name	Status
09-020	Wood River Redband Trout Habitat	Completed

Project Summary

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

Activity Type: Monitoring

Summary: The goal of this application is to improve and preserve fisheries in the Klamath Watershed District (Lakeview and Klamath offices). Many monitoring obligations have been ignored, neglected, or ineffective over the last several years because equipment is broken or ineffective. Our objective is to purchase and replace this equipment so we can collect the information needed to adjust fish stocking schedules, make fair rule changes, and improve angling opportunities for trout and warmwater fish. New equipment is needed to sample fish, tabulate and analyze data efficiently, and to implement restoration activities. The district needs new data tablets, trap nets, gill nets, electrofishing nets, electrofishing batteries, aerators, cameras, and miscellaneous field items.

Objectives:

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New sampling equipment is needed to collect the information necessary for adjusting stocking schedules, testing the performance of various hatchery strains, adjusting angling regulations, and preserving or improving fisheries. The district needs new data tablets, trap nets, gill nets, electrofishing nets, electrofishing batteries, aerators, cameras, and miscellaneous field items.

Trap nets

Trap nets allow biologists to catch fish and release them alive. Many of the lakes managed from Lakeview are small; terminal gear such as gill nets can desiccate small lake fisheries. Several of the lakes managed out of the Klamath office provide trophy opportunity; gill nets can reduce trophy opportunity significantly. Information on warmwater fisheries in Crump and Heart Lakes is lacking; endangered Warner suckers inhabit both lakes and gill nets are not an option. The Klamath and Lakeview offices need three trap nets each to sample fragile fisheries in their areas.

Light-weight gill nets

Department biologists started using sterile trout in the high lakes to prevent intermixing with wild stocks in 2005; anecdotal evidence suggests these fish are not surviving. High lakes in the Sky Lakes and Mountain Lakes wilderness are highly remote and have not been sampled effectively for nearly 10 years. It is imperative that we determine the success of our high lake stocking; however, large and heavy trap nets or large gill nets are not an option. The Klamath District needs six packable gill nets to assess its high lake fisheries to make sure we are providing a return to our anglers.

Data tablets (GPS-enabled)

The Klamath office uses a GPS-enabled data tablet to collect data; our one unit is malfunctioning and cannot be distributed among its four biologists. The data tablet has proven to save several days a year from transcribing data and interpreting errors. Additionally, it allows us to collect geographic data required by the agency standard. Tablet technology has advanced to the point that we could purchase tablets for each of our biologists for the same price as our current unit. Our objective is to purchase four gps-enabled tablets to improve data quality, improve efficiency of analysis, and improve management.

Electrofishing components

The Lakeview and Klamath field offices electrofish weekly to monitor sportfish populations, determine presence-absence of fish, and to salvage fish. The information helps us improve fisheries and preserve native fish. Our electrofishing units are malfunctioning, batteries will not hold charges, and we do not have

enough nets. Our objective is to repair two electrofishing units, buy new batteries, and replace dip nets.

Miscellaneous gear

Several pieces of miscellaneous equipment are critical for implementing fisheries studies. Our objective is to purchase new measuring boards, two flight suits, aerators, & wading cleats.

Bull trout and Fish Identification

Bull trout (threatened species) were once prevalent throughout the Klamath Basin. Unfortunately, they have been extirpated and replaced by brook trout throughout most of the Basin. The Department and its partners have been successful at expanding their populations in some streams. Our goal is to preserve bull trout as we provide angling opportunities for brook trout. We hope to purchase signs to easily show anglers the differences between bull trout, brook trout, brown trout and redband trout.

**Fishery
Benefits:**

Fishery benefits

Trap Nets

Lake of the Woods – The Klamath District will implement a tag reward study in 2015. The study will measure the return of rainbow trout and largemouth bass to the creel. Trap nets will allow us to release tagged fish alive. The study will improve stocking of Lake of the Woods and nearby lakes.

Warner Basin lakes - Many of the lakes in the Warner Basin are extremely small or contain endangered species. Trap nets will allow us to sample our small trout lakes without removing significant portions of the fishable population. We will also be able to monitor lakes with endangered Warner Suckers.

Miller Lake - Miller lake provides opportunity for rainbow trout, kokanee, and trophy brown trout; the lake is also the sight of the Miller Lake lamprey reintroduction. Monitoring of lamprey reintroduction efforts requires intense monitoring of trout species for scarring. Trap nets will allow us to release all of the fish we catch for anglers to recapture.

Light-weight gill nets

Sky Lakes and Mountain Lake Wildernesses - Light-weight gill nets will allow us to remote high lakes thoroughly to determine survival of various strains. We will use information to replace poorly performing or poorly surviving rainbow trout strain with strains that return at a high rate.

Data tablets (GPS-enabled)

Data tablets have proven to save several days a year from transcribing data and interpreting errors. Additionally, it allows us to collect geographic data required by the agency standard. The data tablet will allow us to synthesize more data more accurately, which translates into improved management at a lower cost.

Electrofishing Gear:

Monitoring via electrofishing assists managers with development of limiting factors for game fish populations. Monitoring can show no game fish present, lack of flow, riparian disturbance, lack of fish passage, stunted brook trout populations, etc. Fisheries can be improved by rectifying hypothetical limiting factors to game fish populations. In the Klamath Basin electrofishing monitoring is essential to show whether redband trout show a response to restoration activities funded by National Fish and Wildlife Foundation. Funding of 1 million dollars a year can result in improved redband trout fisheries.

Fish Identification Signs:

Fish identification signs will be utilized primarily in areas of high fishing pressure

and areas with potential for bull trout. Recently, a significant change in the angling regulation allowed for the harvest of two brown trout in areas that were historically primarily catch and release streams for all trout. In addition these streams have no limit on brook trout. Catch and release is required for redband trout for most of the year. Signs will be placed in the Wood River, Williamson River and Sevenmile Creek that display the difference between redband trout, brown trout, brook trout and bull trout. These signs will improve the survival of trophy redband trout by reducing the mistaken harvest of these fish.

In addition signs will be placed on bull trout streams that receive some angling pressure such as Sun and Long Creeks. ODFW has been under pressure in the past to close streams to angling that have bull trout. These signs will ensure that these streams remain open for anglers to continue to enjoy.

**Watershed
Benefits:**

Monitoring is essential to improving and prioritizing habitat restoration projects. The adfluvial redband trout spawning surveys have resulted in extensive spawning habitat restoration projects in Williamson River and tributaries Sunnybrook and Spring Creek as well as Wood River and tributaries Fort, Short and Crooked Creek. Intensive spawning surveys document the utilization of spawning habitat. Spawning habitat has been identified as a limiting factor for redband trout as well as Chinook salmon once reintroduced.

ODFW developed a limiting factor analysis for redband trout production for the Sevenmile Creek watershed in 2005. Klamath Basin Rangeland Trust has implemented numerous habitat restoration projects (riparian, large wood, screening, fish passage, gravel augmentation) that have rectified most of the limiting factors. ODFW monitors this population utilizing extensive electrofish and snorkel surveys. To date the primary limiting factor has not been identified that has resulted in an increase in abundance of redband trout.

Monitoring of NFWF projects for redband trout response is essential for continuation of significant funding. This funding has been utilized to make significant strides in Klamath watershed habitat restoration.

In summary monitoring assist managers with fine tuning limiting factors to significantly benefit fisheries.

**Current
Situation:**

Trout and warmwater fisheries provide angling opportunities for our constituents on a consistent year-round basis; consequently, these fisheries are a consistent source of revenue for the Department. Unfortunately, intensive management of these fisheries was neglected for several years because equipment was broken or ineffective; management of our eight federally listed species interfered; and the Klamath Lake trophy fishery demanded an urgent conservation and fishery focus. Although the district continues to focus on its listed species and conservation needs, it is directing additional focus towards its lake fisheries. New sampling equipment is needed to collect the information necessary for adjusting stocking schedules, testing the performance of various hatchery strains, and adjusting angling regulations while continuing to preserve the districts wild trout fisheries.

Alternatives: Alternatives considered were to purchase this equipment with District funds. District funds are limited and can't be utilized due to recent budget constraints.

Other alternatives were to borrow equipment. Due to the distance to the nearest ODFW office and since some equipment will be utilized year long the borrowing of equipment is economically inefficient.

Designer: Klamath Watershed District in consultation with Native Fish Investigations, Inland Trout Working Group, and Biometrician in Salem (ODFW).

Methods: All equipment to be purchased meets the standard specifications recommended by the American Fisheries Society.

Bonar, S.A., W.A. Hubert, and D.W. Willis, editors. 2009. Standard methods for samplings North American Fresh Water Fishes. American Fisheries Society, Bethesda, Maryland.

Johnson, D.H., B.M. Shrier, J.S. O'Neal, J.A. Knutzen, X. Augerot. T.A. O'Neil, and T.N. Pearsons, 2007. Salmonid field protocols handbook: techniques

Inspector: ODFW

Funding Elements: R&E funds will be utilized to purchase fish management supplies. Staff time will be used for inkind match. No R&E funds will be used for staff time.

Partners: Yes

Klamath Basin Rangeland Trust-acquire funds for habitat restoration and implement restoration projects. Assist with monitoring activities

USFS- assist with monitoring activities

Klamath Tribes- assist with monitoring activities.

Karl Wenner- assist with Rock Creek redband trout restoration

USFWS-implement habitat restoration activities and assist with monitoring

Clearwater Bio Consultants-Primary researcher with water temperature monitoring in Upper Klamath Lake and cold water refugia habitat

Lake of the Woods Resort-angler education regarding tag reward

Crater Lake Park-assist with monitoring and treatment projects.

Chris Engle-volunteer who conducts Wood River AUC surveys and operates Sun Creek Trap

Existing Plan: Yes

Klamath Basin Fish Management Plan (1997)
Bull Trout Recovery Plan (2014)
Redband trout Assessment (2012)
Native Fish Conservation Policy (2003)
Warmwater Fish Management Plan (1988)
Klamath Basin Anadromous Fish Reintroduction Plan (2008)
Miller Lake Lamprey Management Plan (2005)

Affected Yes
Contacted:

Affected Yes
Supportive:

Affected The landowners of all the projects have been contacted and provided support for
Comments: the various projects.

Project Schedule/Participants/Funding

Activity	Date	Participants
Start Trophy Redband Trout Monitoring	10/30/2014	ODFW, USFS, Klamath Tribes
End Trophy Redband Trout Monitoring	8/1/2015	ODFW, USFS, Klamath Tribes, Volunteers
Lake of the Woods Tag Reward Start	5/1/2015	ODFW
Lake of the Woods Tag Reward End	10/31/2015	ODFW
High Lakes Inventory Start	7/21/2015	ODFW
NFWF Redband Distribution Surveys Start	7/1/2015	ODFW, KBRT
NFWF Redband Distribution Surveys End	10/1/2014	ODFW and KBRT
Rock Creek Redband Salvage	8/3/2015	ODFW, Crater Lake Park, KBRT, USFS
Rock Creek rotenone treatment	8/5/2014	ODFW
Fish Presence Surveys Start	6/1/2015	ODFW
Miller Lake sampling	10/12/2015	ODFW and USFS
Sevenmile and Fourmile Redband Relative abundance start	9/1/2015	ODFW, KBRT, Klamath Tribes
Sevenmile and Fourmile Redband Trout Relative abundance end	9/5/2014	ODFW, Klamath Tribes, KBRT
Habitat Restoration Projects Start	8/5/2015	ODFW, USFWS, KBRT, landowners
Habitat Restoration Projects End	10/15/2015	ODFW, USFWS, KBRT
Calahan Creek Redband Salvage	8/1/2016	ODFW, USFWS, USFS
Calahan Creek Rotenone Treatment	8/1/2016	ODFW
Sprague River Fish and Habitat Survey Start	6/1/2015	ODFW
Sprague River Fish and Habitat Survey End	6/5/2015	ODFW
Water Temperature monitoring start	7/1/2015	ODFW and Clearwater Bio Consultants
Water Temperature monitoring end	7/1/2017	ODFW and Clearwater Bio Consultants
Lofton Reservoir Rotenone Treatment Success Monitoring Start	9/1/2015	ODFW
Lofton Reservoir Rotenone Treatment Efficacy Monitoring	10/1/2015	ODFW
Duncan Reservoir Fingerling and Catchable Rainbow Trout Monitoring	9/15/2015	ODFW
Sherlock Gulch Reservoir Fingerling Rainbow Trout Monitoring	9/8/2015	ODFW
Ana Reservoir Hybrid bass and catchable rainbow trout monitoring start	2/1/2015	ODFW
Hart and Crump Lakes crappie fishery and Warner sucker monitoring start	5/1/2015	ODFW and Native Fish Investigations
Cottonwood Meadows and Reservoir redband trout and 53 triploid fingerling and catchable monitoring	10/6/2015	ODFW

Affected
Species: Black crappie
 Brook Trout
 Brown Trout
 Bull Trout
 Chinook Salmon
 Hybrid (white/striped) bass
 Kokanee

Lake Trout
 Largemouth bass
 Miller Lake lamprey
 Modoc Sucker
 Rainbow Trout
 Redband Trout
 Smallmouth Bass
 Steelhead
 Warmwater
 Warner Sucker
 White Crappie
 Yellow Perch

Project Permits

This project has no permits.

Project Monitoring

Organization	Address	Activity	Frequency
ODFW	1850 Miller Island Klamath Falls, OR 97603	Census Spawning Surveys in Wood, Williamson and Crystal Creek	six days a month from October-July
ODFW	1850 Miller Island Road Klamath Falls, OR 97603	Miller Lake Trap nets and tributary electrofishing	Two days a year
ODFW	1850 Miller Island Road Klamath Falls, OR 97603	High Lake Inventory	Four days a year
ODFW	,	Lake of the Woods Reward Tag	May-October
ODFW	,	Water Temperature Monitoring	Hourly for 365 days
ODFW	,	Calahan Creek Rotenone Treatment	5 days per year
ODFW	,	Rock Creek redband trout salvage and rotenone treatment	5 days a year
ODFW	,	Fish Presence Surveys	10 days a year
ODFW	,	Sevenmile and Fourmile Redband Trout Relative Abundance	3 days a year
ODFW	,	Sprague River Fish and Habitat survey	4 days a year
ODFW	,	NFWF Determine Summer Distribution of Redband Trout	5 days a year
ODFW	1850 Miller Island Road Klamath Falls, OR 97603	Fourmile Lake Trout Fishery Trap Net Monitoring	Once a year
ODFW	18560 Roberta Rd. Lakeview, OR 97630	Lofton Reservoir Post Rotenone Treatment Monitoring	One week a year
ODFW	same Lakeview,	Duncan Reservoir Rainbow Trout Monitoring	Two days a year
ODFW	same ,	Sherlock Gulch Reservoir Fingerling Rainbow Trout Monitoring	Two days a year
ODFW	same ,	Ana Reservoir Hybrid Bass and catchable rainbow trout monitoring	One week a year
ODFW	same ,	Hart and Crump Lakes Crappie and Warner sucker monitoring	Two weeks a year
ODFW	same ,	Cottonwood Meadows and Reservoir redband trout and 53 triploid rainbow trout fisheries	Four days a year

Project Maintenance

Organization	Address	Activity	Frequency
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ODFW	1850 Miller Island Road Klamath Falls, OR 97603	All projects	Annually
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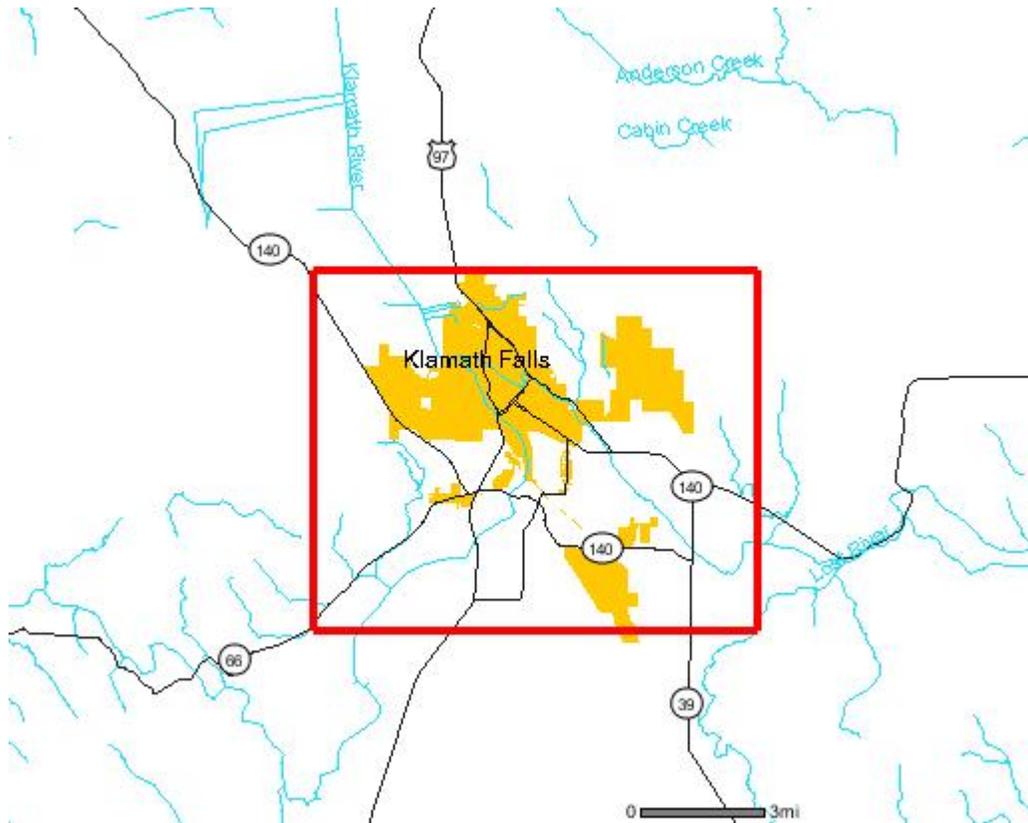
Project Match Funding

Funding Source	Cash	In-Kind	Other	Description	Total	Secured?	Conditions?	Comments
R&E Request	\$21,833.82	\$0.00	\$0.00		\$21,833.82	No	No	
ODFW	\$0.00	\$36,936.00	\$0.00		\$36,936.00	Yes	No	
				Total Match Funding:	\$58,769.82			

Project Budget

Item	Item Type	Units	Unit Cost	R&E Funds	Match Funds	Total
Electrofishing Batteries 24V 12AH BATTERY	Equipment	2	\$388.00	\$776.00	\$0.00	\$776.00
Electrofishing Batteries Lithium Battery	Equipment	2	\$997.00	\$1,994.00	\$0.00	\$1,994.00
Electrofishing Dip Nets	Equipment	6	\$200.00	\$1,200.00	\$0.00	\$1,200.00
Fish Measuring Board	Equipment	2	\$65.00	\$130.00	\$0.00	\$130.00
Flight suit	Equipment	2	\$200.00	\$400.00	\$0.00	\$400.00
GO Pro batteries and recharger	Equipment	1	\$60.00	\$60.00	\$0.00	\$60.00
Go Pro Hero 4	Equipment	1	\$499.99	\$499.99	\$0.00	\$499.99
GO Pro Housing	Equipment	1	\$50.00	\$50.00	\$0.00	\$50.00
Holux GPS Receiver for Notepads	Equipment	4	\$75.00	\$300.00	\$0.00	\$300.00
Lenovo Thinkpad Yoga S100 - Part# 20C0CTO1W	Equipment	4	\$789.10	\$3,156.40	\$0.00	\$3,156.40
Marine Metal Bubble Box Portable Air Pump	Equipment	5	\$12.00	\$60.00	\$0.00	\$60.00
Star Cleats for wading boots 100 bulk	Equipment	1	\$162.47	\$162.47	\$0.00	\$162.47
Swedish gill nets	Equipment	6	\$220.00	\$1,320.00	\$0.00	\$1,320.00
Terrain Navigator Pro License	Equipment	1	\$300.00	\$300.00	\$0.00	\$300.00
Trap Nets	Equipment	6	\$1,134.00	\$6,804.00	\$0.00	\$6,804.00
VLA OFFICE PRO PLUS 2010	Equipment	4	\$323.99	\$1,295.96	\$0.00	\$1,295.96
Asst. District Fish Biologist	Personnel	6	\$4,356.00	\$0.00	\$26,136.00	\$26,136.00
Klamath District Biologist	Personnel	2	\$4,600.00	\$0.00	\$9,200.00	\$9,200.00
Klamath Hatchery Staff	Personnel	2	\$800.00	\$0.00	\$1,600.00	\$1,600.00
Fish Identification Signs	Supplies/Materials /Services	40	\$37.50	\$1,500.00	\$0.00	\$1,500.00
Repair two smith-root electrofishers	Supplies/Materials /Services	1	\$1,000.00	\$1,000.00	\$0.00	\$1,000.00
Shipping trap nets	Supplies/Materials /Services	6	\$137.50	\$825.00	\$0.00	\$825.00
					Total Budget:	\$58,769.82

Project Map



Additional Files

Click a link to view that particular file.

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: Klamath District Fish Management Equipment

Applicant Name: William Tinniswood Title: Assistant Fish Biologist

Applicant Signature: William Tinniswood Digitally signed by William Tinniswood
DN: cn=William Tinniswood, o=ODFW, ou,
email=william.tinniswood@state.or.us, c=US
Date: 2014.10.31 09:10:31 -0700 Date: 10/31/2014

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: Alan R. Dale Title: KLA/MAL WATERSHED MGR

Manager Signature:  Date: 11/7/14