



R & E Grant Application

Project #:

Internships Invasive Removal in High Lakes

Project Information

Requested Cycle: 23-3
R&E Project Request: \$0
Other Funding: \$0
Total Project: \$0
Spending Start Date: 7/1/2023
Spending End Date: 10/30/2024
Project Start Date: 7/1/2023
Project End Date: 10/30/2024
Organization: Oregon State University

Fiscal Officer

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Applicant Information

Name: Matt Shinderman
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Past Recommended or Completed Projects

Number	Name	Status
17-008	Chub Removal Internships in Deschutes High Lakes 2	Approved

Authorized Agent

Name: Jennifer Luke
Address: 61374 Parrell Road
Bend, OR 97702

Telephone:

541-388-6350 x225

Email:

jennifer.a.luke@odfw.oregon.gov

Location Information

Where is it?

The project will occur on public land owned or managed by another party

Landowner Information

Name: USFS-Deschutes NF
Address: 63095 Deschutes Market Rd
Bend, OR, 97701
Phone: 541-388-5300

Site Description

Street Address, nearest intersection, or other descriptive location.

East and Paulina Lakes (Deschutes NF/Newberry National Volcanic Monument), Big Lava Lake,
S.Twin and N.Twin Lakes,
Crane Prairie Reservoir, Suttle Lake

Directions to the site from the nearest highway junction.

Hwy 97, Century Drive

Following project completion, public anglers will be allowed the following level of access to the project site:

Full access

Please describe what leases, easements, agreements are in place to ensure angler access to the project site, and what is the length of each agreement.

Dominant Land Use Type:

Forest

Project Location

General Project Location.

County: Deschutes
Town/City: Bend
ODFW Dist: Bend
Stream/Lake/Estuary Name: East, Paulina, Lava Lake Crane Prairie Res, Twin Lakes, Suttle Lake
Sub-basin: 17070301
Tributary of: Deschutes River

Specific Project Location.

Latitude

Longitude

Project Summary

Project Summary

Please provide a couple sentence summary of the proposal.

East, Paulina, Lava Lakes are popular trout angling waters infested with invasive chub. Large

numbers of chub have a detrimental effect on trout and angling. Catfish have overpopulated in Crane Prairie Reservoir. Interns would work with ODFW to remove invasive fish and monitor trout and water quality.

Overall Project Goals

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

- Trap and remove chub and catfish to improve trout survival, condition and abundance.
- Improve recreational angling.
- Monitor effects of chub and bullhead removal.
- Monitor lakes with past rotenone treatments (Twin Lakes)
- Provide opportunity for students to gain experience in fisheries management.

Primary objectives of R&E funding

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

R&E funds would provide a stipend for two students to work 12 weeks or 960 hours (2023 - 2024) and lease a truck for two seasons. Students will trap and remove invasive fish and collect associated monitoring data.

Current Situation/Justification

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

Thirteen years ago, declining fisheries in East Lake led ODFW staff to write a 5 year experimental management plan, which included experimental removal of chub with boat electrofishing and fyke nets. Initial chub trapping (2010-11) in East Lake was conducted by ODFW staff and volunteers. Chub trapping was successful in East Lake but labor intensive. It was apparent that ODFW staff and volunteers could not trap and remove chub from three lakes, given the level of manpower and equipment. In 2012-2014 the R&E board funded student interns to remove chub from three lakes and evaluate results. Data collected through 2014 demonstrated removal had a positive impact on trout and recreational fishing in East and Lava Lakes. Chub removal efforts have continued through 2022, with intermittent breaks in 2015-2016, 2018 and 2020. Since 15-30% of adult chub are caught in the nets, there will always be chub present in the lake and periodic removal efforts will be necessary to maintain a quality fishery. In 2021-2022, fifteen thousand pounds of chub were removed from East Lake. As part of the bullhead experimental removal, seventeen thousand pounds were removed in Crane Prairie in 2021.

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.

East, Paulina and Lava Lakes have been popular fishing destinations because of the fishing, campgrounds, resorts and aesthetics. When chub populations are high, trout and water quality are negatively impacted. Removing spawning chub on a regular basis retains a good to excellent trout fishery. All of these lakes have the potential to provide excellent, "blue ribbon" trout fishing. After 10 years of chub removal and monitoring in East Lake, data shows chub

removal by trap netting is an effective way to improve trout growth rates and abundance. Angler reports have been positive and ODFW doesn't receive as many complaints from anglers about poor fishing or "I only catch chub." In addition, chub removal likely improves water quality by reducing algae blooms.

Percent benefit split between Commercial and Recreational anglers:

0 % Commercial
100 % Recreational

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

100% Recreation fishery. There are no commercial fisheries on these lakes, although they are used heavily for guided fishing trips by licensed/permitted guide services.

This project has been identified as an ODFW priority for:

Local/watershed
Statewide

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

Yes

Goal 2 of the ODFW strategic plan; "increase participation in fishing," and "increase and maintain satisfaction with work we do." By removing chub in these popular waterbodies, trout fishing improves.

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

Anglers, resort owners and ODFW initiated this project. A working group was formed in 2009 with resort owners, local fishing club representatives, OSU Cascades and ODFW to develop a strategy to control chub.

Identify any plan or other document that identifies this priority.

Supports goals 1 and 2 of ODFW's 25 year Angling Enhancement Plan

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

Yes

Yes, the STEP biologist will oversee interns and volunteers for this project.

This project is intended to benefit the following species:

Other Species
kokanee salmon, brown trout
Rainbow Trout

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)
Restore a degraded fishery

Monitoring/Research

This project will be used to evaluate:

Population composition (i.e age, species, survival, size, or genetics)
Distribution (i.e. presence, absence, abundance)

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

No

This project was developed collaboratively between ODFW biologists and OSU Cascades faculty, but does not include specific scientific questions or require experimental design.

Is this study critical to fishery management decisions?

Yes

Information developed by the removal project is used to determine management options for maintaining current target species populations of stocked rainbow, brown trout and kokanee salmon.

Yes

Yes, results of this project will help determine frequency of chub and bullhead removal, as well as stocking allocations.

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

Yes

At present it is believed that periodic chub removal is necessary to maintain the viability and quality of the trout fishery.

Will the data be reported or published?

Yes

Data from the project, namely East Lake data, is summarized in a district report and used to determine management options for maintaining current target species of rainbow trout, brown trout and kokanee salmon.

Project Description

Schedule

Activity	Date	RE Funding
Interview candidates for OSU Sponsored Program Internships	April 2023, 2024	No
Interns and ODFW staff training and preparation	June 2023, 2024	Yes
Interns and ODFW staff set 8-10 trap nets in lakes	July-September 2023, 2024	Yes
Fish are marked for mark recapture estimate	June 2023, 2024	Yes
Nets are checked regularly, chub removed and hauled to dumpsite. Trout measured and released.	July - September 2023, 2024	Yes
Zooplankton samples are taken from various lakes that have invasive fish	July-August 2023, 2024	Yes
Bullhead catfish trapping in Crane Prairie Reservoir	August 2023, 2024	Yes
Data entry, data and lab analysis, summary report	August 2023, 2024	Yes
Remove nets from lakes, clean and repair all equipment	August - September 2023, 2024	Yes

Permits

Permit	Secured?	Date Expected
Special use permit - USFS - disposal sites for invasive fish	Yes	

Project Design and Description

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

The purpose of this project and internship is to remove invasive tui and blue chub from East,

Paulina and Lava Lakes and improve the trout fishery for recreational angling. If time permits, the interns will trap and remove brown bullhead from Crane Prairie Reservoir. The interns and ODFW will monitor these efforts and collect biological data on trout, zooplankton and invasive fish. Interns will be responsible for trapping chub using fyke nets. Duties require driving a boat, setting nets, emptying nets, lifting barrels of chub, and hauling chub or bullhead to disposal sites. Loads of chub will vary from 200-2000 pounds a day. Trout and kokanee are weighed and measured and released unharmed.

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?

ODFW owns and maintains all the fyke nets, boats and equipment for invasive fish removal and trout sampling.

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

In the years we do not remove invasive fish, ODFW will continue to monitor the chub population, trout conditions and abundance and zooplankton levels.

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

Baseline data was collected prior to chub removal in East Lake and we continue to monitor lakes each year.

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?

No

Other Funding Source	Type	Secured	Dollar Value	Comments
OSU Cascades Faculty staff: faculty supervision, student recruitment, credit evaluation	In-Kind	Pending	1540	
ODFW Staff, STEP biologist	In-Kind	Pending	9600	
ODFW Staff, District Biologist	Cash	Pending	1000	
Sunriver Anglers	Cash	Pending	1632	
Central Oregon Flyfishers	Cash	Pending	1632	
East and Paulina Resorts: boat mooring and boat ramp use	In-Kind	Pending	1200	

Lava Lake Resort: volunteer time	In-Kind	Pending	3600	
ODFW Staff Nrs1	Cash	Pending	2400	
OSU Unrecovered Indirect Cost (26%)	In-Kind	Pending	9764	
		Total	32368	

Budget

Item	Unit Number	Unit Cost	In-kind or non-cash contributions	Funding from other sources	R&E Funds	Total Costs
PROJECT MANAGEMENT						
			0	0	0	0
		SUBTOTAL	0	0	0	0
IN-HOUSE PERSONNEL						
			0	0	0	0
		SUBTOTAL	0	0	0	0
CONTRACTED SERVICES						
			0	0	0	0
		SUBTOTAL	0	0	0	0
TRAVEL						
			0	0	0	0
		SUBTOTAL	0	0	0	0
SUPPLIES/MATERIALS						
			0	0	0	0
		SUBTOTAL	0	0	0	0
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	0	0	0	0

Additional Files

Budget Information

Maps

Photos

Design Information

Management Plans and Supporting Documents

Permits and Reviews

Partnerships

Public Comment

Administrative Documents

Completion Report

A completion report has not been submitted for this project.