



R & E Grant Application 23-25 Biennium

Project #: 23-007

Cape Meares Lake Invasive Weed Treatment

Project Information

Requested Cycle: 23-1
R&E Project Request: \$80,000
Other Funding: \$7,061
Total Project: \$87,061
Spending Start Date: 7/1/2023
Spending End Date: 6/30/2025
Project Start Date: 7/1/2023
Project End Date: 6/30/2025
Organization: Oregon Department of Fish and Wildlife

Applicant Information

Name: Michael Sinnott
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 Tillamook, OR 97141
Telephone: 503-842-2741
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Email: Michael.Sinnott@odfw.oregon.gov

Past Recommended or Completed Projects

| Number | Name | Status |
|--------|--|----------|
| 17-019 | Necanicum River StW Evaluation Project | Approved |

Location Information

Where is it?

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

Landowner Information

Name: Tillamook County Parks Department
Affiliation: Cooperative public owner
Address: PO Box 633
Garibaldi, Oregon, 97118
Phone: 503-322-3477
Email: jwoelfle@co.tillamook.or.us

Site Description

Street Address, nearest intersection, or other descriptive location.

Cape Meares Lake is located directly West, Northwest of the intersection of Bayocean Road and Bayocean Dike Road. Latitude and Longitude Coordinates for the lake are 45.50747, -123.95021. It is approximately 8 miles West of the city of Tillamook.

Directions to the site from the nearest highway junction.

From the junction of Hwy 101 and Hwy 131 in Tillamook, Oregon: take Hwy 131 West approximately 1.75 miles to Bayocean Road on the right (NW). Take Bayocean Road approximately 5 miles to the intersection with Bayocean Dike Road and Cape Meares Lake.

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.

Cape Meares Lake is owned by Tillamook County, but is managed and maintained by the Oregon Department of Fish and Wildlife, North Coast Watershed District. ODFW manages the lake specifically for angler access and opportunity.

Dominant Land Use Type:

Wetland

Rural residential

Cape Meares Lake is an impoundment on Bayocean Spit between the Pacific Ocean and Tillamook Bay. Adjacent land include a Tillamook County Park (Bayocean Spit), Bayocean road, and the beach.

Project Location

General Project Location.

County: Tillamook
Town/City: Tillamook
ODFW Dist: North Coast Watershed District
Stream/Lake/Estuary Name: Cape Meares Lake

Sub-basin: Tillamook Bay-Frontal Pacific Ocean
Tributary of: N/A

Specific Project Location.

| Latitude | Longitude |
|----------|------------|
| 45.50747 | -123.95021 |

Project Summary

Project Summary

Please provide a couple sentence summary of the proposal.

This project will increase angling opportunity and access in Cape Meares Lake by contracting out treatment/removal of invasive Eurasian Milfoil which has grown densely in the lake over the past few years and is currently restricting angling and boat access.

Overall Project Goals

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

Restore angling opportunity and boat access by herbicide treatment of Cape Meares Lake with a goal to eradicate the Eurasian Milfoil infestation.

Primary objectives of R&E funding

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

Successful application of herbicide treatment of Cape Meares Lake with a goal to eradicate Eurasian Milfoil.

Current Situation/Justification

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

Cape Meares lake is a popular angling destination near Tillamook Oregon. It is currently stocked annually with over 10,000 rainbow trout by the Oregon Department of Fish and Wildlife, and also supports self sustaining populations of largemouth bass and multiple species of panfish (bluegill and pumpkinseed). The lake has a primitive boat ramp and an R&E funded angling access dock. Over the past several years invasive Eurasian Milfoil, an aquatic weed, has infested the lake and currently densely occupies the majority of lake. The infestation is restricting and reducing angler opportunity by making boat access difficult and dangerous as well as making angling from the bank difficult and less successful. Eurasian Milfoil has been proven to be very difficult to eradicate using mechanical methods and must be chemically treated. This funding is needed to contract the chemical treatment of the Eurasian Milfoil by an licensed applicator to remove the invasive aquatic weed and restore angling access and opportunity in Cape Meares as well as other recreation boating access.

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.

This project will treat with a goal to eradicate an infestation of Eurasian Milfoil from Cape Meares

Lake. This will increase angler boating access to the lake which is currently much impaired by the density of the invasive weed. It will also increase angling opportunity and success by bank anglers (including from an existing R&E funded angling dock) and boat anglers alike. The current level of infestation makes boat access to the lake difficult and dangerous, and greatly reduces angler success from both boat and bank.

Cape Meares Lake is a popular location for trout and warm water anglers. Over 10,000 rainbow trout are planted in Cape Meares Lake annually by the Oregon Department of Fish and Wildlife. It supports naturally sustaining bass and panfish fisheries. ODFW estimates 3000 angler trips per/year with the majority of pressure during the spring and summer, and some level of angling effort year round. An Oregon State Marine Board boater survey showed 800 boater days in 2017 with the majority of activity being angling.

The project meets district management goals and is consistent with ODFW's Strategic Plan (Goal 2); 25-Year Angling Enhancement Plan Goal 2(f), and the Recruitment, Retention and Reactivation (R3) efforts.

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 in Cape Meares Lake.

This project has been identified as an ODFW priority for:

Local/watershed
Basin/regional

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

Yes

The project meets district management goals and is consistent with ODFW's Strategic Plan (Goal 2); 25-Year Angling Enhancement Plan Goal 2(f), and the Recruitment, Retention and Reactivation (R3) efforts.

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

Over the past 3 years the Milfoil infestation at Cape Meares Lake has increased drastically and as a response we have received multiple complaints from our angling customers. Upon verifying the severity of the infestation and its negative effect on angling access and success it became an NCWD priority.

Identify any plan or other document that identifies this priority.

ODFW Strategy Plan
https://www.dfw.state.or.us/agency/strategic_vision/docs/2018_Strategy_plan.pdf

ODFW 25-year Angling Enhancement Plan
https://www.dfw.state.or.us/agency/commission/minutes/08/12_december/Exhibit%20H_Attachment%204_DRAFT%2025-Year%20Plan.pdf

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

No

This project is intended to benefit the following species:

This project will benefit anglers or fishery by providing:

- Angler Access
- Angling Opportunity

Angler Access

This project will:

- Maintain/restore current angler access
- Improve access to existing angling opportunities

Choose the following that best describes the angling access provided by the project:

A boat ramp, R&E funded angling dock, and bank access exist at Cape Meares Lake. The eradication of invasive Milfoil will increase angler boat access to the majority of the lake and increase bank angling opportunity. It should also increase angling success.

Do similar access sites, facilities, or fisheries exist within 10 miles of the project site?

No

Angling Opportunity

This project will:

- Improve the opportunity for anglers to catch fish (better stocked fish, trapping)
- Restore a degraded fishery

Project Description

Schedule

| Activity | Date | RE Funding |
|---|-----------------|------------|
| Lake survey: Contracted survey of Cape Meares Lake volume, depth contour, plant biomass locations, and plant composition. | April, 2023 | No |
| Chemical application of invasive specific herbicide to Cape Meares Lake. | July, 2023 | No |
| Post application effectiveness monitoring. | September, 2023 | No |

Permits

| Permit | Secured? | Date Expected |
|---|----------|---------------|
| Oregon Department of Environmental Quality 2300-A | No | |

Project Design and Description

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

In Spring of 2023 a survey of Cape Meares Lake will be conducted informing us on lake volume, depth profile, plant biomass locations, and plant composition and diversity. That survey will inform a specific chemical herbicide treatment of the lake and the invasive aquatic plant species. (Chemical to be used: ProcellaCOR). This treatment has been researched and found to be effective by multiple USACE research programs, and in several AquaTechnex, Inc. case studies (See attached report on treatment plan and herbicide).

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?

Case studies resulted in 100% removal of Eurasian Milfoil after 1 year. Monitoring will be conducted by ODFW, and barring illegal re-introduction the eradication should be long term.

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

Oregon Department of Fish and Wildlife, North Coast Watershed District is and will remain responsible for long term management, maintenance, and oversight of Cape Meares Lake. This project is a one time treatment and will result in the eradication of invasive milfoil; no maintenance of the project will be necessary. ODFW will conduct annual monitoring.

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

A detailed lake survey of Cape Meares Lake is to be conducted prior to the herbicide application. This report will provide specific information on plant biomass, location, and composition which ODFW will use in long term monitoring.

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 |
|---|---------|---------|--------------|--|
| To be determined | Cash | Secured | 3200 | Actively seeking alternative non-state grants to fund lake survey. |
| Oregon Department of Fish and Wildlife, North Coast Watershed District. | In-Kind | Secured | 3861 | ODFW staff time. |
| | | Total | 7061 | |

Budget

| Item | Unit Number | Unit Cost | In-kind or non-cash contributions | Funding from other sources | R&E Funds | Total Costs |
|--|-------------|--------------|-----------------------------------|----------------------------|-----------|-------------|
| PROJECT MANAGEMENT | | | | | | |
| Michael Sinnott, Assistant District Fish Biologist | 40 | 36.65 | 1466 | 0 | 0 | 1466 |
| | | SUBTOTAL | 1466 | 0 | 0 | 1466 |
| IN-HOUSE PERSONNEL | | | | | | |
| Michael Sinnott, Assistant District Fish Biologist | 40 | 36.65 | 1466 | 0 | 0 | 1466 |
| Robert Bradley, Supervising Fish and Wildlife Biologist | 20 | 46.24 | 929 | 0 | 0 | 929 |
| | | SUBTOTAL | 2395 | 0 | 0 | 2395 |
| CONTRACTED SERVICES | | | | | | |
| Contracted Lake Survey. Contractor TBD | 0 | 0.00 | 0 | 3200 | 0 | 3200 |
| Contracted aquatic weed herbicide treatment. | 0 | 0.00 | 0 | 0 | 68000 | 68000 |
| | | SUBTOTAL | 0 | 3200 | 68000 | 71200 |
| TRAVEL | | | | | | |
| Contracted labor, equipment & travel for certified applicators | 0 | 0.00 | 0 | 0 | 12000 | 12000 |
| | | SUBTOTAL | 0 | 0 | 12000 | 12000 |
| 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 | 3861 | 3200 | 80000 | 87061 |

Internal Review Results

Review Score: 2.9 out of 3

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

Summary of Review Team Comments

The main questions from the IRT is can ODFW staff be used to apply the herbicide?

Specific Review Team Comments

Why is a private contractor using ODFW's NPDES permit? The permit covers ODFW staff applying rotenone or herbicides into waters of the state. It doesn't cover private contractors. They would need to have their own or work with Oregon DEQ.

This lake is being choked by the introduced weeds to the point of eliminating fishing opportunity. Restoration is urgently needed. Survey funds are now secured.

Project looks to be warranted, based on photos and descriptions, in order to improve angling conditions and restore use of investments (boat ramp and fishing dock)

You should consider using ODFW staff to implement this project. We have the resources and the expertise to plan, develop, implement and monitor a project such as this. This project appears to be in the same category as a rotenone project which requires District staff to reprioritize time allocation

Great to see that there was follow-up with DEQ on the discharge permit

The price tag is fairly high for this project but if it is successful in eradicating the invasive weeds, than it is likely a good single investment in this popular fishery. Following the treatment, some sort of educational sign should be placed at access locations if there is a worry that someone will reintroduce the weeds to the lake

Specific Review Team Questions

Is there a lake-specific permit needed to treat, or do you treat under a permit already held by ODFW (D. Banks and K. Kohl)? Latest status of funding source for lake survey? Are there private landownerships and/or domestic water withdrawals from the lake? Is there a quarantine from swimming, boating, etc. after treatment? Are there other aquatic plant species present that won't be affected by ProcettaCOR, and may proliferate after treatment?

DEQ has stated that a 2300A permit was required which ODFW holds (K. Kohl). DEQ has confirmed that permit is valid statewide. However, Aquatechniques Inc. has indicated ProcettaCOR has to be applied by SePRO Procetified applicators as a part of the labeling as a reduced risk herbicide. I am working to establish whether or not treatment by ODFW personnel is a feasible option.

Funding for the lake survey has been secured from the Salmon Steelhead Enhancement Fund, and the survey is being scheduled for early spring. A detailed budget will be available once the survey results are in (approx. 2 weeks post survey). The current budget estimate was based on the highest possible treatment and includes a 1200 PDU treatment with ProcettaCOR at \$43 per/PDU equaling \$51,600 in product. The remainder of the \$65,000 will cover contractor labor cost, air boats, and precision application equipment. Once the survey results are in the budget will be updated to the exact cost which should be less than or equal to the current estimate. Unfortunately, the survey could not be completed prior to the grant cycle deadline.

There are no domestic water withdrawals from the lake. Two private landowner parcels do underlie portions the lake, those landowners are being contacted. The Cape Meares Community Association contacted ODFW and has been a proponent of aquatic weed removal from the lake. The majority of the lake is under Tillamook County Parks Department ownership whom is supportive of the treatment plan.

No quarantine from swimming, boating, etc. is necessary after the treatment due to the rapid uptake of ProcellaCOR by treated plant. ODFW and Tillamook County Parks, however, will post advisories prior to treatment and may quarantine the lake for 24 hours if there are concerns by the community or the board of County Commissioners.

There are other aquatic plant species present that won't be affected by ProcellaCOR, but they are native species that existed in manageable levels before the Eurasian watermilfoil infestation and are not expected to proliferate in a way that would be detrimental to lake use. If any other invasive species exist that we do not know about they will be identified during the lake survey.

What alternatives, if any, have been evaluated to control exotic weed species and is this going to be a long-term commitment for the R & E Program? Other financial opportunities to partner. Additional funding support from outside the R & E Program would make this grant more compelling, say local angler groups or organizations.

Mechanical removal was considered and researched, but is not a viable option as Eurasian watermilfoil spreads by fragmentation and therefore mechanical removal has been proven to be ineffective. There are other aquatic herbicides that could be used, but they would not be species specific which could damage native plants, and are not as effective at the long term removal of Eurasian watermilfoil, especially at this level of infestation. This is not expected to be a long-term commitment for the R&E program; ProcellaCOR and Aquatechnics have a proven track record of complete eradication of Eurasian watermilfoil. Post treatment monitoring and follow up spot treatments can be accomplished by ODFW if needed.

How does the Eurasian Milfoil get introduced into places? Is it used in home aquariums? What are the chances of it getting reintroduces post-treatment? How confident are the contractors that they can eradicate it with a single treatment? Are the weeds introduced through boats launching at the site? If so, what measures would be used to prevent this in the future?

Eurasian watermilfoil spreads by vegetative fragmentation. It is most likely that it was introduced to Cape Meares Lake on a boat or boat trailer. It was introduced to the United States and Canada by the aquarium trade. There is the risk of reintroduction; ODFW and Tillamook County Parks can and will attempt to mitigate this through signage and public education. Aquatechnics Inc. has many case studies where single treatment was successful in completely eradicating Eurasian watermilfoil. Post treatment monitoring, however, will be necessary and can be done by ODFW district staff. If detected early a reintroduction could be spot treated for a fraction of the cost and could likely be accomplished by ODFW staff using a different aquatic herbicide.

Additional Files

Budget Information

[Cape Meares herbicide treatment estimate](#)

Initial funding estimate for herbicide treatment based on rough acreage and estimated depth (pre-survey)

Maps

[Cape Meares Lake Map](#)

Map showing location of Cape Meares Lake

Photos

[Cape Meares boat ramp](#)

The Cape Meares boat ramp in 2022 after the infestation of invasive milfoil

[Cape Meares Dock post infestation](#)

The R&E funded angling dock in 2022 after the infestation of invasive milfoil

[Cape Meares Dock pre-infestation](#)

The R&E funded angling dock in 2018 before the infestation of invasive milfoil

[Milfoil in Cape Meares Lake 1](#)

Milfoil around the angling dock 2022

[Milfoil in Cape Meares Lake 2](#)

Milfoil around the angling dock 2022

[Milfoil in Cape Meares Lake 3](#)

Milfoil around the angling dock 2022

Design Information

[Milfoil treatment plan](#)

Aquatechnics milfoil treatment plan

[ProcellaCOR label](#)

Label for herbicide to be used

Management Plans and Supporting Documents

[ODFW Plan excerpts](#)

Relevant excerpts from ODFW strategic plan and ODFW 25-year angling enhancement plan

Permits and Reviews

[DEQ permit verification](#)

Email from DEQ verifying ODFW permit

Partnerships

[Tillamook County support](#)

Email from Tillamook County Parks Dept verifying support/permission

Public Comment

Administrative Documents

[Signature Authorization Page-ODFW](#)

Signed Signature Authorization Page

Completion Report

Objectives and Accomplishments

Successful application of herbicide treatment of Cape Meares Lake with a goal to eradicate Eurasian Milfoil.

Did you meet the objective? Yes

Cape Meares Lake was successfully treated with ProcellaCor-EC aquatic herbicide to kill Eurasian Milfoil.

Comments

Early post treatment monitoring is showing a successful die off of the Eurasian Milfoil and survival of native aquatic plants. Monitoring will continue in the spring to evaluate if the Milfoil was eradicated.

Grantee agreed to forfeit all remaining funds.