R & E Grant Application 25-27 Biennium

Project #: 25-025

Phillips Reservoir Tiger Muskellunge Fyke Nets

Project Information

Requested Cycle:	25-3
R&E Project Request:	$13,291
Other Funding:	$309
Total Project:	$13,600
Spending Start Date:	7/1/2026
Spending End Date:	6/30/2027
Project Start Date:	7/1/2026
Project End Date:	6/30/2027
Organization:	Oregon Department of Fish and Wildlife

Applicant Information

Name:	Ethan Brandt
Address:	One University Blvd. 203 Badgley Hall, EOU LaGrande, OR 97850
Telephone:	541-962-3027
Email:	Ethan.J.Brandt@ODFW.Oregon.Gov

Past Recommended or Completed Projects

This applicant has no previous projects that match criteria.

Authorized Agent

Name:	Michael Lance
Address:	65495 Alder Slope Rd. Enterprise, OR 97828
Telephone:	541-318-7930
Email:	Michael.J.Lance@ODFW.Oregon.Gov

Authorized Agent

Name:	Tyler Hoyt
Address:	PO Box 9 John Day, OR 97845
Telephone:	541-575-1167
Email:	Tyler.J.Hoyt@ODFW.Oregon.Gov

Location Information

Where is it?

The project will occur on public land owned or managed by the applicant

Site Description

Street Address, nearest intersection, or other descriptive location.

Phillips Reservoir, Baker County OR

Directions to the site from the nearest highway junction.

Take exit 304 off of I-84 for OR-7 S.
Follow OR-7 S to National Forest Road 300 and take a left on it to get to the reservoir.

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.

United States Forest Service owns the land that Phillips Reservoir occupies. Bureau of Reclamation owns Mason Dam, which creates Phillips Reservoir. Oregon Department of Fish and Wildlife manages the fish in Phillips Reservoir.

Dominant Land Use Type:

Forest
Reservoir

Project Location

General Project Location.

County:	Baker
Town/City:	Sumpter
ODFW Dist:	La Grande
Stream/Lake/Estuary Name:	Phillips Reservoir
Sub-basin:	Powder
Tributary of:	Powder River

Specific Project Location.

Latitude	Longitude
44.67585	-118.01104

Project Summary

Project Summary

Please provide a couple sentence summary of the proposal.

This project funds the purchase of eight fyke nets to sample tiger muskellunge in Phillips Reservoir, which have been stocked to control perch and recover the trout fishery. Monitoring tiger muskellunge is necessary to manage the fisheries in a manner that will maximize the recreational benefit to anglers.

Overall Project Goals

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

The goal of this project is to provide the needed sampling equipment to sample the tiger muskellunge population in Phillips Reservoir.

To provide exceptional recreational angling to the public for tiger muskellunge, yellow perch, trout, and smallmouth bass in Phillips Reservoir.

To sample other fish species in Phillips Reservoir including yellow perch, crappie, smallmouth bass, and trout.

To sample the fish assemblages in other reservoirs in the Grande Ronde Watershed.

Primary objectives of R&E funding

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

The purchase of eight fyke nets large enough to sample tiger muskellunge in Phillips Reservoir.

Current Situation/Justification

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

The most recent stocking of tiger muskellunge in Phillips Reservoir (2024) was highly successful. There have been many reports of people catching them and in the fall of 2025 we had a report of a 28-inch tiger muskellunge caught. The tiger muskellunge were stocked at ¾-1.5 inches long in April of 2024, which means they grew up to 26 inches in 18 months. The Oregon Administrative Rules (OAR 635-056-0075) state that population monitoring is a requirement for tiger muskellunge in Phillips Reservoir. Additionally, the Phillips Reservoir Management plan calls for tiger muskellunge diets to be sampled. Scientific literature and other states sampling methods point to large fyke nets (with 4'x6' or larger frames and 7" inch or larger openings and throat sizes) being the best way to sample these fish. Currently, the Grande Ronde Watershed does not have fyke nets big enough to sample this large of fish. Therefore, we are requesting funds to purchase large fyke nets. Sampling tiger muskellunge is necessary to characterize their growth, diet, and population size, which will inform management of these fish. Effective management of tiger muskellunge will provide recreational angling opportunities to the public for tiger muskellunge, perch, smallmouth bass, crappie, and trout.

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.

A very productive and popular recreational fishery developed at Phillips Reservoir immediately after construction was completed in 1968. Angler use of this reservoir was high (67,510 angler-days in 1970), considering it is in a relatively sparsely populated region of Oregon. An end came to the productivity of one of the region's most popular trout fisheries as the result of the illegal introduction of yellow perch, first documented in 1991. The perch quickly populated the reservoir and by the mid 1990's they were the dominant species. This expansion led to changes in the reservoir's zooplankton community that impacted the productivity of other gamefish populations in the reservoir, namely rainbow trout, smallmouth bass, and black crappie. The

trout fishery severely declined due to this introduction. Angler-days declined from 34,955 in 1981 to 3,103 in 2010. Tiger muskellunge have now been stocked to control yellow perch. The purchase of fyke nets would help to monitor the tiger muskellunge population, which would help inform management actions to return the reservoir into a fishing destination where anglers would be able to fish for quality trout, tiger muskellunge, smallmouth bass, and yellow perch.

Percent benefit split between Commercial and Recreational anglers:

0 % Commercial
100 % Recreational

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

There is no commercial angling on Phillips Reservoir.

This project has been identified as an ODFW priority for:

Local/watershed

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

Yes

This project helps to meet ODFW Strategic Plan Goal 1: "Demonstrate effective stewardship of Oregon's fish, wildlife and their habitats." Specifically, "Continue effective stewardship of Oregon's fish, wildlife and their habitats through sound science and by addressing our constituents' needs."

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

At the start of every biennium ODFW conducts planning and prioritization exercises. This part of ODFW's Strategic Plan for 2025-2026.

Identify any plan or other document that identifies this priority.

Phillips Reservoir Fishery Management Plan
"Objective 4: Monitor tiger muskellunge diet."

OAR 635-056-0075
(D) Department will establish a monitoring plan and program prior to release which shall include:
(ii) Population monitoring.

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

No

This project is intended to benefit the following species:

Smallmouth Bass
Yellow Perch
Other Fish Species
Tiger Muskellunge, Crappie
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)

Provide new opportunity for anglers to catch fish (new pond, more fish to stock more areas, new species)
Enhance natural production of fish stocks to levels that allow for recreational fishing opportunities
Restore a degraded fishery

Monitoring/Research

This project will be used to evaluate:

Hatchery releases and/or stray rates
Population composition (i.e age, species, survival, size, or genetics)
Hatchery production methods
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
ODFW District Fish Biologist Ethan Brandt

Is this study critical to fishery management decisions?

Yes
How effective is the stocking of tiger muskellunge and what are their population dynamics in Phillips Reservoir?
Yes
The results will be used to determine if more or less tiger muskellunge need to be stocked and if the stocking strategy needs to be changed (e.g. change in size of fish or timing of the stocking). Muskellunge are being used to control to the overabundant perch population. This in turn will help to recover the fishery in Phillips Reservoir providing quality tiger muskellunge, smallmouth bass, yellow perch, and trout fisheries for the public.

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

Yes
The plan is to monitor the tiger muskellunge population in Phillips Reservoir annually in the spring following ice-out.

Will the data be reported or published?

Yes
Yes, we will continue to report our sampling in the yearly report for the La Grande Fish District.

Project Description

Schedule

Activity	Date	RE Funding
Purchase fyke nets	Summer 2026	Yes
Sample tiger muskellunge (yearly activity)	Spring	No
Report results in annual report	Winter	No

Permits

Permit	Secured?	Date Expected

None	No	

Project Design and Description

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

Muskellunge are being used to control the overabundant perch population in Phillips Reservoir. The illegally introduced yellow perch greatly reduced the productivity of the trout, smallmouth bass, and crappie populations in the reservoir as the high abundance of perch reduces the amount of forage available. The perch population is so large that perch have become stunted and grow extremely slow; not providing the public with a good fishery.

The goal is for tiger muskellunge to control this overabundant perch population so that the fisheries in Phillips Reservoir become quality angling opportunities for the public. Keeping the right amount of tiger muskellunge in the reservoir to effectively control the perch population is necessary to achieve overall angler satisfaction. Determining the population size and diet of tiger muskellunge is paramount to managing them effectively. Tiger muskellunge are a large species that require large gear to sample them. Across the scientific literature, large fyke nets are the most effective and commonly used gear to sample muskellunge. This is the standard sampling gear for muskellunge for multiple states. Fyke nets typically do not harm the fish they capture. Gill nets can harm and kill muskellunge (which can be counterproductive to goals), have by-catch that is killed, and can be time intensive as large fish will roll in the nets and become extremely entangled and hard to remove. Netting large tiger muskellunge will also significantly shorten the life expectancy of a gill net. Electrofishing has been shown to be a very difficult method to use to sample muskellunge as they can "feel" the electricity from far away and are many times strong enough to swim out of the electrical current. Additionally, we do not have an electrofishing boat that we regularly have access to. Hook and line sampling is extremely time intensive for muskellunge (commonly known as the "fish of 10,000 casts") and requires great fishing skill. Therefore, after careful research of the literature, talking with other biologists in other states, and assessing the limitations of other sampling methods, we believe that large fyke nets are the most effective (and cost effective) sampling method for us to use to sample tiger muskellunge in Phillips Reservoir.

The Grande Ronde Watershed does not have fyke nets large enough to effectively sample tiger muskellunge. Therefore, this project aims to provide funds to purchase 8 fyke nets with the following specifications (based on specifications from other states that net muskellunge):
Purchase 8 fyke nets with the following specs:
4'x6'6" Fyke Net, 3/4" Sq. #168 Knotless Nylon Netting
-Two 4'x6'6" frames made of 3/4" conduit, welded joints, front frame center braced
-Vertical trapping panels going from front frame to back frame, 8" slit openings
-Five 44" tapered steel hoops behind back frame
-Two square throats located on 1st and 3rd hoops necking to a 9" opening
-Black Netcoating with UV Inhibitor
Custom Options:
-Adjustor Strings on Throats(Cord woven around throat allowing adjustment
75' Long x 4' Wide Lead

-3/4" Square #168 Knotless Nylon Netting
-Top Rope: 5/16" Braided Poly with SB-2 Floats every 32"
-Bottom Rope: 50lb. Leadcore Rope
-Black Netcoating with UV Inhibitor

These nets will be set in the spring after ice-out on Phillips Reservoir for approximately two weeks. Tiger muskellunge captured in the nets will be tagged with a PIT (Passive Integrated Transponder) tag, measured, weighed, and a subset of diets will be sampled through gastric lavage.

Diet data will be used to determine what tiger muskellunge are primarily feeding on. Additionally, over time through recaptures of tagged fish we will be able to create a capture-recapture model that will be able to estimate the population size. Recapture data will also aid with estimating age and growth of fish over time. This data will be used in conjunction with regular sampling of the other fish species in the lake through gill nets, electrofishing, and fyke nets to determine if more or less tiger muskellunge need to be stocked and if the stocking strategy needs to be changed (e.g. change in size of fish or timing of the stocking).

The overall goal of this project is to return Phillips Reservoir back to a premier recreational fisheries destination. The funds from this project for fyke nets will benefit recreational anglers by providing biologists the necessary information to help provide quality fisheries for trout, smallmouth bass, yellow perch, and a catch and release fishery for tiger muskellunge. This is the only waterbody in Oregon with tiger muskellunge, and this fishery provides a unique recreational opportunity for the public.

We estimate that yearly sampling, data processing, and write-up will take 2-3 weeks of one NRS3 and two NRS2 biologists time.

We received a quote from Duluth Nets and they said that they will be raising their prices in January by ~10-15%. We took their quote and added an additional 15% for inflation and other potential cost adjustments to the budget. Any remaining funds will be turned back into R&E.

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?

With proper maintenance these nets can last up to 1-2 decades.

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

La Grande Fish District staff will pay for and make any necessary repairs to the nets after each sampling season or as necessary.

Will the project require ongoing maintenance?

Yes

Wear and tear of the nets will be paid for and mended by La Grande Fish District staff.

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

Not necessary

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
ODFW	In-Kind	Pending	309	Personnel time for net procurement
		Total	309	

Budget

Item	Unit Number	Unit Cost	In-kind or non-cash contributions	Funding from other sources	R&E Funds	Total Costs
PROJECT MANAGEMENT						
		SUBTOTAL				
IN-HOUSE PERSONNEL						
Net Procurement Time	4	77	309			309
		SUBTOTAL	309			309
CONTRACTED SERVICES						
		SUBTOTAL				
TRAVEL						
		SUBTOTAL				
SUPPLIES/MATERIALS						
		SUBTOTAL				
EDUCATION/OUTREACH						
		SUBTOTAL				
EQUIPMENT						
4'x6'6' Fyke Nets	8	1,156			9,246	9,246
75'x4' Leads	8	445			3,560	3,560
Shipping	1	484			485	485
		SUBTOTAL			13,291	13,291
FISCAL ADMINISTRATION						
		SUBTOTAL				
		BUDGET TOTAL	309	0	13,291	13,600

Internal Review Results

Review Score: 4.4 out of 5

(1 = Do Not Fund, 2 = Strengthen Proposal, 3 = Recommend with Conditions, 4 = Recommend, 5 = Strongly Recommend)

Summary of Review Team Comments

Review team was supportive of this project, and gave it a combined score of 4.4.

Specific Review Team Comments

The review team felt that this is is a unique situation that requires different sampling equipment that other fisheries elsewhere in the state. These nets will help the district to properly sample and manage the Tiger Muskellunge fishery in Phillips Reservoir.

Specific Review Team Questions

Where will the fyke nets be stored? Is there a secure location identified to keep the nets so they will be protected during the off season when they are not in use?

The fyke nets will be stored in a covered and locked shop dedicated to the district fish staff at the ODFW East Region Office in La Grande. They will stay dry, protected, and out of the sun and weather.

Additional Files

Budget Information
- 2026 Cost Increase
- Duluth Fyke Net Quote

Maps

Photos
- Fyke Net Example from Duluth Nets Website

Design Information

Management Plans and Supporting Documents
- OAR 635-056-0075 – Controlled Fish Species
- Phillips Reservoir Fishery Management Plan

Permits and Reviews

Partnerships

Public Comment

Administrative Documents
- Manager Signature Authorization

Completion Report

A completion report has not been submitted for this project.