



R & E Grant Application 25-27 Biennium

Project #: 25-007

Unmanned Aircraft Systems Fish Stocking Project

Project Information

Requested Cycle: 25-1
R&E Project Request: \$34,990
Other Funding: \$78,500
Total Project: \$113,490
Spending Start Date: 6/15/2025
Spending End Date: 9/30/2025
Project Start Date: 3/10/2025
Project End Date: 12/1/2025
Organization: Lane Community College

Fiscal Officer

Name: Solomon Singer
Address: 4000 E. 30th Ave
Telephone: 541-579-3351
Telephone 2: 541-579-3351
Fax:
Email: singers@lanecc.edu

Applicant Information

Name: Solomon Singer
Address: P.O. Box 270
Lowell, OR 97452
Telephone: 541-579-3351
Email: singers@lanecc.edu

Past Recommended or Completed Projects

This applicant has no previous projects that match criteria.

Authorized Agent

Name: Jeremy Romer
Address: 3150 E MAIN ST
SPRINGFIELD, OR 97478
Telephone: 541-726-3515 x34
Email: jeremy.d.romer@odfw.oregon.gov

Location Information

Where is it?

The project will occur Statewide

Project Summary

Project Summary

Please provide a couple sentence summary of the proposal.

Develop an unmanned aircraft system to stock ten high mountain lakes. A valuable tool for ODFW as an alternative stocking device.

Overall Project Goals

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

Purchase an American-made drone that is capable of lifting 50 pounds and flying for 50 minutes (the requirements needed for stocking fish).

Improve the design of current proof-of-concept fish stocking containers through feedback from ODFW to provide custom trout delivery containers using 3-D printers (possible patent)

Obtain Federal Aviation Administration (FAA) permitting/waivers to stock fish in high lakes (Lane Aviation Academy already works closely with the FAA on permitting for other projects)

Work closely with ODFW Springfield District Field Office Fish Biologists to successfully stock fish into 10 high lakes in their District.

Determine if stocking was successful (ODFW will sample fish the year following the stocking to assess overwinter survival)

Maintain a successful and consistent trout stocking program in high-use Cascade Mountain lakes even if the helicopter is unavailable or unable to stock specific lakes during the desired time period.

Primary objectives of R&E funding

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

Purchase a heavy lift Freefly Systems Alta X Unmanned Aircraft and components (itemized budget included)

Current Situation/Justification

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

Helicopter stocking only occurs in odd years and during a very short window of time (usually one week). The intent is not for drone stocking to replace helicopter stocking at the same scale, but to provide an option for stocking the most utilized lakes if helicopter or manual stocking is not an option. Drones provide more flexibility for landing zones and do not require the extensive coordination for helicopter stocking. Ex. If a proposed stocking or landing area becomes inaccessible due to forest fire during helicopter stocking, drone stocking could still occur at another time - a different month, or following year.

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 provide a novel solution to complete management objectives (high lake stocking) when faced with adverse conditions, by providing a safer, more flexible, less labor intensive, less expensive, and less noisy alternative to helicopters for stocking trout into some high mountain lakes.

Percent benefit split between Commercial and Recreational anglers:

0 % Commercial

100 % Recreational

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

N/A

This project has been identified as an ODFW priority for:

Statewide

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

Yes

Maintains and/or increases recreational angling opportunities for trout. Protects the opportunity for future generations to harvest fish in high Cascade lakes.

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

Multistate High Mountain Lake Summit. Rhine Messmer, Oregon Representative. Stocking of many of Oregon's mountain lakes began at the turn of the century when propagated fish became available. Fish arrived in many areas in 1912, with the primary objective of providing maximum fishery benefits for anglers.

Identify any plan or other document that identifies this priority.

Meyer and Schill. 2007. Multistate High Mountain Lake Summit. Idaho Fish and Game Report #07-55. Includes CA, ID, MT, NV, NM, OR (pgs12-13), WA

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

No

This project is intended to benefit the following species:

Cutthroat Trout

Rainbow Trout

This project will benefit anglers or fishery by providing:

Angling Opportunity

Hatcheries/Propagation/Liberation

Angling Opportunity

This project will:

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

Hatcheries/Propagation/Liberation

Hatchery Name:

Multiple hatcheries - statewide

This is a:

State hatchery

As a result of this request hatchery production will:

Maintain

This project will:

Restore, rehabilitate, modify, or replace existing liberation equipment

Add new or upgrade liberation equipment

Improve safety of hatchery operations

Fish produced at this facility are for:

Sport harvest

Project Description

Schedule

Activity	Date	RE Funding
Improve current proof-of-concept designs to provide custom trout delivery containers using 3-D printers (possible patent)	Jan - May 2025	No
Obtain Federal Aviation Administration (FAA) permitting to stock fish in high lakes (2 waivers listed below).	Jan - July 2025	No
Work closely with ODFW Springfield District Field Office Fish Biologists to determine which 10 lakes will be stocked.	April-July 2025	No
Purchase an American-made drone that has the capability to lift 50 pounds and fly for 50 minutes (the requirements needed for stocking fish).	July 2025	No
Stock 10 high lakes in 2025	Sept 2025	No

Permits

Permit	Secured?	Date Expected
Federal Aviation Waiver - Over 55 lbs exemption for larger aircraft (30# payload + drone + batteries).	No	July 2025
Federal Aviation Waiver - Part 107.31 enabling Beyond Visual Line of Sight (BVLOS) flight.	No	July 2025

Project Design and Description

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

From Jan-Sept of 2024 a student of Lane Aviation Academy (LAA; Greg Gore) used a cheaper, foreign-manufactured, lightweight drone to mount a custom engineered and constructed stocking container that could be mounted (quick release) to the drone for stocking fish. He then provided a small-scale demonstration, successfully remote stocking fake trout into a circle drawn in the ODFW parking lot. ODFW Fish Biologists and LAA believe this method could be further developed to ODFW implementation level by using a larger drone. LAA has agreed to be the liaison with the Federal Aviation Administration for permitting/waivers, providing pilots, and use of their high-tech machines for design and creation of custom containers. This is a great opportunity to foster collaboration between ODFW and LAA to achieve common objectives. Funding allocation could be contingent on being awarded the Federal waivers prior to July 2025 (we cannot stock without them).

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?

10 years. After that, structural components can still be re-used, modified, and may even be able to be retrofitted with new electronic components.

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

Lane Aviation Academy will be responsible for any management, oversight, upkeep, maintenance and storage of the aircraft. We will attach an R&E logo on the ship to show where it came from. Upon completion of this project, LAA would continue to use it frequently to train pilots, use on other projects, and work on collaborative projects with ODFW to maximize use (not sitting on a shelf).

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?

No

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
Lane Community College Unmanned Aircraft Systems Program	In-Kind	Secured	78500	
		Total	78500	

Budget

Item	Unit Number	Unit Cost	In-kind or non-cash contributions	Funding from other sources	R&E Funds	Total Costs
PROJECT MANAGEMENT						
Solomon Singer - Lane Aviation Academy - Program Director	80	75.00	6000	0	0	6000
		SUBTOTAL	6000	0	0	6000
IN-HOUSE PERSONNEL						
Flight validation and testing	40	100.00	4000	0	0	4000
FAA waiver applications x2 (107.31 and Over 55#)	200	100.00	20000	0	0	20000
Aircraft modification 3D modeling of parts and components	50	100.00	5000	0	0	5000
Avionics system installation and long range testing	40	100.00	4000	0	0	4000
Per day Student Pilot fee - Greg Gore (15 days)	120	50.00	6000	0	0	6000
Standard Operation Procedure Development -FAA required	100	100.00	10000	0	0	10000
		SUBTOTAL	49000	0	0	49000
CONTRACTED SERVICES						
			0	0	0	0
		SUBTOTAL	0	0	0	0
TRAVEL						
			0	0	0	0
		SUBTOTAL	0	0	0	0
SUPPLIES/MATERIALS						
Fish stocking tanks x 6 - materials to build	6	300.00	0	0	1800	1800
3D printing services and rapid prototyping	150	100.00	15000	0	0	15000
Aluminum, assembly hardware, wires, assembly lab expendables	1	1000.00	1000	0	0	1000
CNC Machine Services - manufacture custom parts	50	150.00	7500	0	0	7500
		SUBTOTAL	23500	0	1800	25300
EDUCATION/OUTREACH						
			0	0	0	0
		SUBTOTAL	0	0	0	0
EQUIPMENT						
Alta X Drone and Herelink long range controller	1	28150.00	0	0	28150	28150
Alta X Battery Dual Charger	1	650.00	0	0	650	650
ALta X Batteries	3	1380.00	0	0	4140	4140
Long Range Telemetry Radio	1	250.00	0	0	250	250
		SUBTOTAL	0	0	33190	33190
FISCAL ADMINISTRATION						
			0	0	0	0
		SUBTOTAL	0	0	0	0
		BUDGET TOTAL	78500	0	34990	113490

Additional Files

Budget Information

Maps

Photos

Design Information

Management Plans and Supporting Documents

[2007 Multi-state high mountain lake meeting report](#)

Published information from the meeting (OR pg 12-13)

[Detailed UAS Stocking Project Proposal Overview](#)

Additional details on the proposal, progress, and project specifics

[High Lakes Trout Stocking History_Yanke 2010](#)

Powerpoint Presentation

Permits and Reviews

Partnerships

Public Comment

[ODFW Letter of Support](#)

Letter of support

Administrative Documents

[Signature Authorization Page Signed](#)

Signature Authorization Page - Public, completed

Completion Report

A completion report has not been submitted for this project.