

Grant Application



Christian Hagen

Email : christian.hagen@oregonstate.edu

Application ID : A67HC141

Custom Ref. -

Application Start Date: 2023-10-26 21:47:04

Application Completed Date: 2023-10-30 21:48:43

1 Have you previously applied for a grant from the Oregon Wildlife Foundation?

yes

1.Y.1 What was the name of the project?

Wildfire Effects on Sage-Grouse Ecology: Implications for Post-Fire Restoration

2 Has a previously submitted grant application been denied funding support?

no

3 Title of your proposed project

Determining Yellow Rail Distribution & Abundance

4 Name of your organization

Oregon State University

5 If your organization is not a 501c3 nonprofit, please identify your fiscal sponsor

If this does not apply to you, write N/A

OSU Agricultural Research Foundation

6 Your name or the name of the Project Manager

Christian Hagen

7 organization mailing address

Please enter full address with city, state & zip

Dept Fisheries, Wildlife & Conservation Sciences, 104 Nash Hall, Corvallis 97331

8 your phone number or that of the Project Manager

541-410-0238

9 your email address or that of the Project Manager

christian.hagen@oregonstate.edu

10 a brief biographical statement about yourself or that of the Project Manager

Christian Hagen has been involved in the research, monitoring and management of prairie grouse and prairie and sagebrush ecosystems since 1996. His expertise focuses on how these species respond to landscape-scale conservation and specifically demography and habitat use of prairie-grouse. As umbrella species, these birds serve as barometers to their ecosystems. He served as Science Advisor to USDA-NRCS Lesser Prairie-Chicken Initiative (2011-2020), where he focused on delivering scientifically based conservation efforts that provide mutual benefit for agricultural producers and prairie dependent species. Previously, he served as Sage Grouse Coordinator to the Oregon Department of Fish and Wildlife (2004-2011). Currently, as research faculty he continues to evaluate outcomes of conservation and disturbance as it relates to greater sage-grouse in the Great Basin. However, he has begun to expand his portfolio examining issues of water availability on the ecology of overwater nesting birds, and the (extremely rare) yellow rail in the Klamath Basin.

11 social media handles that your organization uses

Enter social handles or URLs such as instagram, facebook, twitter, youtube, etc. so that we can use to cross promote on our channels - if you do not have any, please place N/A

<https://www.instagram.com/hagenlab/>

12 are you are currently following Oregon Wildlife Foundation on its social media channels?

- Instagram
- Facebook

13 what is the total estimated cost of your project?

9990

14 Funding that you are requesting from OWF

If you're request is for more than \$5,000, please contact Tim Greseth -tim@myowf.org before submitting your application.

9990

15 what type of project are your proposing?

fish or wildlife research

16 will your project address an Oregon Conservation Strategy habitat or species?

yes

16.Y.1 What habitat or species is addressed?

yellow rail

17 what is the location of your proposed project?

Klamath Marsh National Wildlife Refuge- and surrounding wetland complexes

18 what ecoregion and Conservation Opportunity Area (COA) is your proposed project located in?

See <https://www.compass.dfw.state.or.us/> for the information you need to answer this question

Klamath Basin, and following COAs -- Klamath Marsh Williamson River (16), Sycan Marsh (136), Summer Lake (189), Upper Klamath Lake (138), Thomas Creek and Goose Lake (145), and Harney-Malheur Lakes (187)

19 what is the anticipated start date of your project?

Day/Month/Year

01-04-2024

20 what is the anticipated end date of your project?

30-06-2025

21 has a local, state or federal biologist reviewed this project?

yes

21.Y.1 What is their name and contact info?

Kaly Adkins, kalysta.adkins@odfw.oregon.gov

22 have you already or will you obtain necessary permits from all requisite agencies as applicable to proposed project?

yes

23 what will the funds you are requesting be used for?

this would be a good time to review, if you haven't already done so, our grantmaking guidelines at www.myowf.org/grants

Hiring of a seasonal technician to assist the graduate student

24 provide us a brief summary of your proposed project

To reduce the uncertainty regarding the species distribution, metapopulation trends/dynamics, and about the species conservation future, considerable work is needed to survey wetland habitats across a broader landscape to determine site occupancy and abundance. Such efforts will create a reference point and accurate distribution map from which to begin to understand how global stressors may be affecting Yellow Rail and its habitat in western North America. Our goals are three-fold: 1) develop a regional map of shallow wetland systems upon which Yellow Rail depend, 2) design a survey methodology using Automated Recording Units (ARUs) that could be deployed across a broader region, and 3) from those surveys and shallow-wetland map develop a regional Yellow Rail occupancy model that would inform a species distribution map.

25 upload pre-project pictures or a video

By submitting these photos or video I warrant that I am the legal owner of this media and grant the Foundation permission to reproduce, exhibit, or publish them for all general purposes in relation to Oregon Wildlife Foundation's work. If you have questions about photo or video submissions please refer to myowf.org/grants for guidance.

Video Calling in a Yellow Rail during population surveys: <https://www.instagram.com/p/CQUrEq9Bjub/>

26 fill out our budget form

Project Revenue	Cash	In-Kind	Committed / Pending
Oregon Wildlife Foundation Request	9990		
ODFW-PR Grant	231962		Committed
Pilot study funding, private donor and fed agencies	19500		Committed
Volunteers assisting with counting rails	11540		Committed
REVENUE	272992.00	0.00	
		TOTAL PROJECT SUPPORT	272992.00
Project Expenses	Cash	In-Kind	Total
Personell	157955	11540	169495.00
Travel	7000		7000.00
Supplies	5588		5588.00
Tuition	33055		33055.00
Admin	47864		47864.00
Personell-OWF request	9990		9990.00
			0.00
			0.00
			0.00

			0.00
			0.00
			0.00
			0.00
			0.00
		TOTAL PROJECT EXPENSES	272992.00
Balanced budget? This cell should read "0" ---->		NET	0.00

27 upload a narrative of your proposed project

Please make sure your narrative is no more than 7 pages long, single spaced, 12 pt. font (Calibri preferred).

1 Document Uploaded

28 upload letters of support

letters of support are strongly encouraged. in particular a letter from a supervising biologist

1 Document Uploaded

29 I understand that I am required to submit a Project Completion Report, copies of any publications or social media posts crediting the Foundation's support, and post-project pictures at the completion of my project

yes

Powered by **Submit.com**

— Grant Application

Christian Hagen

Application ID: **A67HC141**

Determining Western Yellow Rail Distribution and Mapping Shallow Wetland Habitats in the Pacific Northwest

Prepared by Christian A. Hagen, Ph.D.

Statement of Need

Yellow Rails (*Coturnicops noveboracensis*) are a species of conservation concern because of their specialized habitat needs within shallow wetland systems. They are an Oregon Conservation Strategy species, that occurs in at least 5 Conservation Opportunity Areas (COAs). In particular, the core of the western Yellow Rail population resides in Klamath Marsh National Wildlife Refuge (KMNWR), which is in Klamath Marsh-Williamson River COA-16. Yellow rail persistence is reliant on perennial wetland conditions. Little is known about western Yellow Rail ecology and distribution outside of the Klamath Marsh and a few surrounding wetlands. Importantly, Yellow Rail depend on wetland habitats associated with flooded riparian and perennial wet meadow systems. The species share this habitat with other wetland dependent species of concern including the Sandhill Crane (*Grus Canadensis*) and Strategy species such as Oregon Spotted Frog (*Rana pretiosa*) and in some places including Klamath Marsh and the Wood River Valley overlap with redband trout (*Oncorhynchus mykiss*), and several species of endemic lamprey (*Petromyzontiformes*). These wetland systems also provide essential ecosystem services that drive watershed nutrient and water budgets. The population trend of Yellow Rail and other wetland dependent species is a critical metric for the overall health and well-being of the larger watershed.

Determining Yellow Rail Distribution & Abundance

With increased drought and the associated degradation of watershed water budgets, gaining a better understanding of the distribution of Yellow Rail in Oregon and the Pacific Northwest is critical if this disjunct population is to survive ongoing habitat changes. In the Upper Klamath Basin, 85-90% of their original perennial short emergent wetland habitat was lost by the 1980s. Without a better understanding of how hydrology affects Yellow Rails, future management of the species and their habitat is uncertain. Thus, developing GIS models that predict shallow wetland habitat and its spatio-temporal variation is paramount in understanding potential locations of Yellow Rail habitat. The computing power of GoogleEarth Engine has transformed how landscape ecologists model habitat and provides great promise in developing predictive models of shallow wetland habitat. There is a need to establish a more definitive distribution map to serve as a foundation or reference point for future conservation efforts. Thus, expanding survey effort and monitoring of Yellow Rail occupancy and abundance in known and potential habitat is needed.

Overview and Objectives

To reduce the uncertainty regarding the species distribution, metapopulation trends/dynamics, and about the species conservation future, considerable work is needed to survey wetland habitats across a broader landscape to determine site occupancy and abundance. Such efforts will create a reference point and accurate distribution map from which to begin to understand how global stressors may be affecting Yellow Rail and its habitat in western North America. Our goals are three-fold: 1) develop a regional map of shallow wetland systems upon which Yellow Rail depend, 2) design a survey methodology using Automated Recording Units (ARUs) that could be deployed across a broader region, and 3) from those surveys and shallow-wetland map develop a regional Yellow Rail occupancy model that would inform a species distribution

Determining Western Yellow Rail Distribution and Mapping Shallow Wetland Habitats in the Pacific Northwest

Prepared by Christian A. Hagen, Ph.D.

map. Our work in modelling Yellow Rail occupancy will include ARU deployments in the following COAs: Klamath Marsh-Williamson River (16), Sycan Marsh (136), Summer Lake (189), Upper Klamath Lake (138), Thomas Creek and Goose Lake (145), and Harney-Malheur Lakes (187).

Outcomes

Our goals are to improve our knowledge of the distribution of Yellow Rails in Oregon and seeks to identify those areas that are “optimal” and those less so. In our view, we need the science to help guide future restoration efforts to the places that are likely to have the largest ecological impact. Currently, we lack a “road map” as to where restoration for Yellow Rails should or could occur. It is our goal and hope to identify those areas of highest restoration priority so that we can give this rare and amazing species the chance it deserves.

Current Project Funding and Justification for OWF Grant Funds

We have raised \$251,462 since 2022 for this project, \$19,500 was initially raised for the pilot season in 2022, and the remaining \$231,962 was raised through ODFW securing Pittman-Robertson funds. Matched funds of \$11,540 in volunteer hours and \$19,500 has been used in part as the non-federal match to PR. If awarded, these OWF funds would help to leverage the 25% non-federal match required by PR grants. In both 2022 and 2023, the Master’s student, conducted the vast majority of the arduous field work on his own. He had the intermittent assistance from a US Fish and Wildlife Service seasonal technician at Klamath Marsh National Wildlife Refuge. However, there has been a turnover in permanent staff and that has resulted in no assistant for the Master’s student to successfully complete his final year of fieldwork in 2024.

Timeline

Mar 22- Sep 2022 Fieldwork developing ARU surveys

Oct 22- Mar 2023 Student on campus, academics, proposal development

Apr 23- Sep 2024 ARU deployment across regionally, shallow wetland modelling begins

Oct 24 – Mar 2024 Student on campus, shallow wetland modelling nearing completion

Apr 24- Sep 2024 ARU deployment across regionally, testing of shallow wetland model

Oct 24 – Sep 2025 Student on campus, final analyses and thesis writing and completion

Budget

We are requesting hourly pay for a seasonal technician; costs are estimated at \$17.10 per hour for 584 hrs in (\$9,990). Total direct costs are \$9,990 and there are no indirect costs, if awarded, we would request funds to be transferred to OSU’s Agricultural Research Foundation, which does not charge administrative costs on donations from other Oregon 501(c)3 organizations.



Oregon

Tina Kotek, Governor

Department of Fish and Wildlife

Deschutes Watershed District Office
61374 Parrell Rd
Bend, OR 97702
(541) 388-6363
Fax (541) 388-6281

October 30, 2023

Oregon Wildlife Foundation
2337 NW York St. #201C
Portland, OR 97210

To Whom it May Concern:

I have partnered with Oregon State University and PI Christian Hagen to investigate western yellow rail distribution in Oregon. This project has been highlighted as a research priority of the agency through an internal selection process by wildlife division leaders. It was selected to receive funding for a graduate project through a Pittman-Robertson grant. Additional funding from the Oregon Wildlife Foundation would not only be helpful to complete the final field season of the project but could also be utilized to help leverage existing funding as non-federal match to meet the 25% match requirement of the Pittman-Robertson grant.

This work is a priority for the agency because it directly addresses a data gap outlined in the Oregon Conservation Strategy for the species. Products of this work will include an occupancy model and shallow wetland map to identify species distribution and potential breeding habitat in the East Cascades ecoregion. Additionally, this project will provide the framework of a passive monitoring protocol to systematically inventory these highlighted areas for the species into the future. This project will also increase our knowledge on the hydrology of several Conservation Opportunity Areas associated with wetland habitats highlighted in the Oregon Conservation Strategy. This will help us not only with our management of western yellow rail but also species that share this unique shallow wetland habitats with western yellow rail.

This work is extremely timely because extreme drought and water distribution in the Klamath Basin continue to be difficult management issues. Providing scientifically accurate distribution and habitat recommendations for this rare and sensitive species will be critical for its persistence in the state.

Thank you for your consideration. If you have any questions regarding this application, please contact me at (541) 993-4628.

Sincerely,

Kalysta Adkins
Oregon Department of Fish and Wildlife
East Region Conservation Wildlife Biologist

<https://www.instagram.com/p/CQUrEq9Bjub/>