

# Grant Application

Sarah Rockwell



**Email :** smr@klamathbird.org

**Application ID :** A21RS62

**Custom Ref. -**

**Application Start Date:** 2022-01-18 18:49:12

**Application Completed Date:** 2022-02-09 22:07:07

1 Have you ever applied for an OWF grant before?

yes

1.1 What was the name of the project?

Genetic and Phenotypic Analysis of Oregon Vesper Sparrow to Guide Conservation Efforts for this Oregon Conservation Strategy Species, Examining Oregon Vesper Sparrow local dispersal movements and territory configuration to inform meadow restoration, and Using GPS nanotag technology to examine factors limiting Oregon Vesper Sparrow populations throughout the annual cycle

2 Have you ever been denied for an OWF grant before?

no

3 Project Title

Year-round GPS-tracking of Oregon Vesper Sparrows

4 Name of my Organization

Klamath Bird Observatory

5 If your organization is not a tax-exempt nonprofit, please list the name of your fiscal sponsor

-

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

n/a

6 Project Manager Full Name

Sarah Rockwell

7	Project Manager Mailing Address - Please enter full address with city, state & zip
	PO Box 758, Ashland OR 97520
8	Project Manager Phone Number  541-201-0866 ext 6
9	Project Manager Email Address  smr@klamathbird.org
10	Please provide a brief biographical statement about yourself  Dr. Sarah Rockwell has worked in field ornithology for the last 18 years, including her current position as a Research Biologist at KBO for the last 9 years. Sarah earned her doctorate at the University of Maryland and Smithsonian Migratory Bird Center, with a thesis focused on demography, ecology, and conservation of the then-endangered Kirtland's Warbler. She currently studies avian response to coniferous and riparian habitat restoration, including bird abundance, diversity, and demography, to improve conservation and management. She also leads research on specific imperiled species, including Oregon Vesper Sparrow and Western Purple Martin. At KBO, Sarah is responsible for research design, hiring, training, and supervising interns and field technicians, overseeing data collection efforts, data analysis, and reporting and publication on several projects. She has co-led KBO's Oregon Vesper Sparrow research in 2019-2021. Sarah's expertise includes statistical analysis and communication of scientific results via presentations, technical reports, peer-reviewed publications, and public outreach. She is also experienced with various avian field research techniques such as point counts, bird banding and tissue sample collection, deploying geolocators and GPS tags on songbirds, nest-searching and monitoring, resighting color-banded birds, territory mapping, and vegetation surveys as they relate to bird habitat.
11	Provide any social media handles you use - 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  Facebook: @KlamathBirdObs, Instagram: @klamathbirdobs, Youtube: Klamath Bird Observatory, Twitter: @KlamathBirdObs
12	Please indicate if you are currently following Oregon Wildlife Foundation on our social media channels  - Instagram - Facebook - Twitter - YouTube
13	Total estimated project cost  35000
14	Funding that you are requesting from OWF - If you're request is for more than \$5,000, please contact Tim Greseth - <a href="mailto:tim@myowf.org">tim@myowf.org</a> before submitting your application.  5000

15	What type of project are you proposing?
	Wildlife
16	Will your project address an Oregon Conservation Strategy habitat or species?
	yes
16.1	What habitat or species is addressed?
	Oregon Vesper Sparrow
17	Start date of project- Day/Month/Year
	15-03-2022
18	End date of project
	31-12-2023
19	Location of project
	Lily Glen County Park, Ashland OR
20	Has a local, state or federal biologist reviewed this project?
	yes
20.1	What is their name and contact info?
	Emily VanWyk; emily.j.vanwyk@odfw.oregon.gov
21	Have you already or will you obtain necessary permits from all requisite agencies as applicable to proposed project?
	yes
22	What will the requested funds be used for?

Requested funds will be used to purchase 5 additional GPS tags (Lotek PinPoint 10s), additional mileage to travel to the field site to deploy the additional tags, and target-netting supplies. This ongoing study has previously borrowed banding and netting supplies from other projects, and now some of those items are starting to senescence while other supplies are needed back by their original projects. Thus, we need to purchase target-netting supplies that are specific to this project for use this field season.

23

Provide a brief Project Summary

This project will expand our ongoing Oregon Vesper Sparrow work with a tangible conservation focus. KBO proposes to uncover new information about the migratory routes and overwintering areas used by this imperiled subspecies. We will use data from miniaturized GPS tags appropriate for small songbirds (tags ~1g) to track non-breeding season movements of 15 Oregon Vesper Sparrows that breed at our Rogue Basin study site in southern Oregon, and an additional 10 from a larger population breeding in the Willamette Valley; requested OWF funds will be used for the purchase of 5 GPS tags, field mileage, and target-netting supplies. This work will address a critical information gap. Knowledge of key sites that these birds use during migration and winter is essential for understanding and addressing potential threats that originate in this less well-studied part of the annual cycle. If populations nesting in different regions of Oregon use different migratory routes and overwintering locations, then different conservation actions will be needed to protect them. Here, we propose to expand our sample size of tracked birds in the Rogue Basin, and collect novel data from the Willamette Valley population, by deploying GPS tags on 25 individuals in 2022. It will be most efficient to add to our sample size this year, and put out as many tags as possible in 2022 when we are already planning a resighting and recapture effort for 2023.

24

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](http://myowf.org/grants) for guidance.



25

Fill out the budget

<b>Project Revenue</b>	<b>Cash</b>	<b>In-Kind</b>	<b>Committed / Pending</b>
<b>Oregon Wildlife Foundation Request</b>	5000		Pending
Oregon Conservation and Recreation Fund	20000		Committed
American Bird Conservancy		10000	Committed
<b>REVENUE</b>	<b>25000.00</b>	<b>10000.00</b>	
		<b>TOTAL PROJECT SUPPORT</b>	<b>35000.00</b>
<b>Project Expenses</b>	<b>Cash</b>	<b>In-Kind</b>	<b>Total</b>
Willamette Valley staff time and mileage - ABC		10000	<b>10000.00</b>
KBO Science Director (1 week) - OCRF	1825		<b>1825.00</b>
KBO Research Biologist (3 weeks) - OCRF	4275		<b>4275.00</b>
20 GPS tags (Lotek PinPoint 10s) + international shipping - OCRF	7865		<b>7865.00</b>
Field supplies (batteries, color bands, harness materials, etc) - OCRF	100		<b>100.00</b>
Mileage (10 round-trips to Rogue Basin field site, and one to Willamette Valley) - OCRF	550		<b>550.00</b>
2 nights lodging near Corvallis, OR (to train Willamette Valley team) - OCRF	300		<b>300.00</b>
KBO overhead on OCRF costs - OCRF	5085		<b>5085.00</b>
5 GPS tags (Lotek PinPoint 10s) + shipping - OWF request	2315		<b>2315.00</b>
Field mileage (10 additional round-trips to Rogue Basin field site)- OWF request	290		<b>290.00</b>
Target-netting supplies from Avinet (4 pole sets, 4 nets, 24 stakes) + shipping - OWF request	1945		<b>1945.00</b>
FoxPro Hammerjack game caller - OWF request	450		<b>450.00</b>
			<b>0.00</b>
			<b>0.00</b>
		<b>TOTAL PROJECT EXPENSES</b>	<b>35000.00</b>
<b>Balanced budget? This cell should read "0" ----&gt;</b>		<b>NET</b>	<b>0.00</b>

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

27 Upload letters of support

2 Documents Uploaded

28 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**

# **Using GPS technology to track year-round movements of Oregon Vesper Sparrows from multiple breeding populations**

Sarah M. Rockwell and Jaime L. Stephens

Klamath Bird Observatory

January 20, 2022

## **Klamath Bird Observatory**

Klamath Bird Observatory's (KBO's) mission is to advance bird and habitat conservation through science, education, and partnerships. We are a scientific non-profit organization that achieves bird conservation in the Pacific Northwest and throughout the migratory ranges of the birds of our region. Emphasizing high-caliber science and the role of birds as indicators of the health of the land, we specialize in cost-effective bird monitoring projects that improve natural resource management. We bring our results to bear through science delivery involving partnership-driven engagement in conservation planning, informing the critical decisions being made today that will have lasting influences on the health of our natural resources well into the future.

KBO's award-winning model was developed in the ruggedly beautiful and wildlife-rich Klamath-Siskiyou Bioregion. We now apply this model more broadly throughout the Pacific Northwest, and the year-round ranges of our migratory birds. Our program areas reflect the highest conservation priorities for reversing the decline of western bird populations and the habitats on which they depend. Our current programs focus on improving management and restoration of coniferous forests, oak woodlands, riparian habitats, and meadows. Our research improves understanding of current and projected bird distributions and densities in those ecosystems, and studies birds throughout their full annual life cycles to identify factors that limit bird populations during the non-breeding season. In addition, our intensive professional education and international capacity building programs expand our influence throughout the ranges of our shared migratory birds, into Mexico and Central and South America.

## **Project Abstract**

This project will expand our ongoing Oregon Vesper Sparrow work with a tangible conservation focus. KBO proposes to uncover new information about the migratory routes and overwintering areas used by this imperiled subspecies. We will use data from miniaturized GPS tags appropriate for small songbirds (tags ~1g) to track non-breeding season movements of 15 Oregon Vesper Sparrows that breed at our Rogue Basin study site in southern Oregon and an additional 10 from a larger population breeding in the Willamette Valley; requested OWF funds will be used for the purchase of 5 GPS tags, field mileage, and target-netting supplies. This work will address a critical information gap. Knowledge of key sites that these birds use during migration and winter is essential for understanding and addressing potential threats that originate in this less well-studied part of the annual cycle. If populations nesting in different regions of Oregon use different migratory routes and overwintering locations, then different conservation actions will be needed to protect them. Here, we propose to expand our sample size of tracked birds in the Rogue Basin, and collect novel data from the Willamette Valley population, by deploying GPS tags on 25 individuals in 2022.

## **Background**

Oregon Vesper Sparrow is one of the most imperiled birds in North America. Breeding Bird Surveys indicate an ongoing significant declining population trend of -5% per year – equivalent to losing over 90% of the population from 1968-2015 (Sauer et al. 2017). The 2010 estimated range-wide population size was <3,000 birds (Altman 2011), and more recent information suggests that number is closer to 2,000 birds (B. Altman unpubl. data). Wintering range contractions have also been reported in Baja and southern California. The Oregon Vesper Sparrow is an Oregon Conservation Strategy Species (ODFW 2016) and is considered of high conservation concern by all natural resources entities within its breeding and wintering range. It is a Bird of Conservation Concern for the U.S. Fish and Wildlife Service (USFWS 2021), and a Species of Greatest Conservation Need in the Oregon State Wildlife Action Plan (ODFW 2016). It is a candidate for listing as Endangered or Threatened in Washington State, and is under review for listing on the federal Endangered Species Act (ABC 2016). Oregon Vesper Sparrow is one of 22 subspecies recognized as a “distinct population of high conservation concern and extremely high vulnerability” (Rosenberg et al. 2016).

Beginning in 2013, extensive work on the Oregon Vesper Sparrow was initiated by Bob Altman, then of the American Bird Conservancy (ABC). In 2013 and 2014, Klamath Bird Observatory contributed to a range-wide survey to determine the distribution, population status, and habitat associations of populations of Oregon Vesper Sparrow (Altman 2015). Point counts, transects, and area searches were conducted to locate populations of Oregon Vesper Sparrow. Results from these surveys revealed populations located in the Puget Lowlands, Willamette Valley, Umpqua Valley, Rogue Basin, and Coast Ranges. Based on the low number of detections, there is high conservation concern for this bird (Altman 2011, 2015). Baseline information on range-wide abundance, distribution, and habitat relationships were gathered for Oregon Vesper Sparrow at that time (Altman 2015).

## **Need**

Ongoing research (2017 – 2021) led by the American Bird Conservancy, in partnership with KBO and EcoStudies Institute, is underway to study how survival, productivity, and recruitment may underlie observed population declines and extirpations (Altman 2018, Stephens and Rockwell 2021). The ultimate goal of the study is to develop range-wide strategies to counter the causative factors and improve wildlife management for this declining species. Still, this important work could be hindered by lack of knowledge of this subspecies outside of our breeding ground study sites. Additional research on migratory stopover and overwintering sites is warranted to identify possible causes of decline and conservation actions that can be taken for Oregon Vesper Sparrow on their non-breeding grounds. The majority of current work is focused on breeding habitat, nest success, annual survival, and recruitment, and more information is needed to complete a full assessment of conservation issues that may occur in different parts of this bird’s annual cycle. Oregon Vesper Sparrows are not visually distinguishable from other Vesper Sparrow subspecies (i.e., using binoculars), so existing observations by biologists or recorded in community science online databases like eBird.org are not sufficient to precisely identify the subspecies’ wintering grounds (in central and southern California based on current evidence).

This proposal to Oregon Wildlife Foundation outlines an expansion of the Oregon Vesper Sparrow work in southern Oregon that will fill a key information gap needed for full life cycle conservation, and also help us to better plan for opportunities to study seasonal survival in future years. Disentangling the potential causes of population decline requires understanding what threats Oregon Vesper Sparrows face in different parts of their annual cycle – and thus, the first step is understanding where those locations are. Recent advances in technology are available to help overcome the logistical challenges of monitoring small songbirds year-round. With previous support from Oregon Wildlife Foundation and others, we have begun to address this knowledge gap. In 2020, we deployed miniaturized GPS tags on 10 Oregon Vesper Sparrows at the Rogue Basin study site; results from three recaptured birds (a fourth bird was recaptured but with an apparent tag failure) have provided the very first precise information about where Oregon Vesper Sparrows spend the non-breeding season, and a proof-of-concept for using GPS technology with this subspecies. The sample size of returning birds from this pilot effort was small, and did not include individuals breeding in the Willamette Valley, which may or may not use the same non-breeding locations. Now that we have pilot data in hand, we know it is feasible to capture 10-15 adults within each study region, and recapture a reasonable percentage of them the following year. Here, we propose to expand this study and deploy GPS tags on 25 Oregon Vesper Sparrows (10 in the Willamette Valley, and 15 in the Rogue Basin) in 2022 to further uncover migratory routes and wintering locations, and describe the degree of migratory connectivity (i.e., overlap in winter geography) between these two populations. This work will importantly triple our sample size for the Rogue Basin breeding population, and provide the very first GPS data identifying migratory stopover and wintering sites used by birds breeding in the Willamette Valley. We will use this novel spatial information to identify potential threats originating on the non-breeding grounds, and develop appropriate conservation strategies.

We have also identified Motus as an additional research opportunity. The Motus Wildlife Tracking System ([motus-wts.org](http://motus-wts.org)), a collaborative research network using automated radio-telemetry arrays to study the movements of small organisms (Taylor et al. 2017), allows automated ‘resighting’ of tagged individuals. If Motus stations are located on both breeding and wintering grounds, that could help us to parse survival rates into their seasonal components – breeding, fall migration, overwinter, and spring migration. This would allow us to identify whether survival is unexpectedly low during a particular phase of the annual cycle and target appropriate conservation actions to alleviate this. To do this, we need the best available information on where to place Motus stations to maximize probability of detecting migrating or overwintering birds. In addition to filling a critical information gap regarding non-breeding season geography, GPS data will be used to plan optimal sites for future Motus station locations, to continue to build our knowledge of factors limiting the population size of Oregon Vesper Sparrow.

Our previous data collected at Lily Glen are notable in the low juvenile return rates (from nestlings to their first year as breeders). This suggests two possibilities: juvenile dispersal distances are generally farther than we are able to detect (or they moved to nearby private properties that we were unable to access), or juvenile survival rates are much lower in the Rogue Basin than other study areas in Oregon (Altman 2018). Elucidating these differences in a

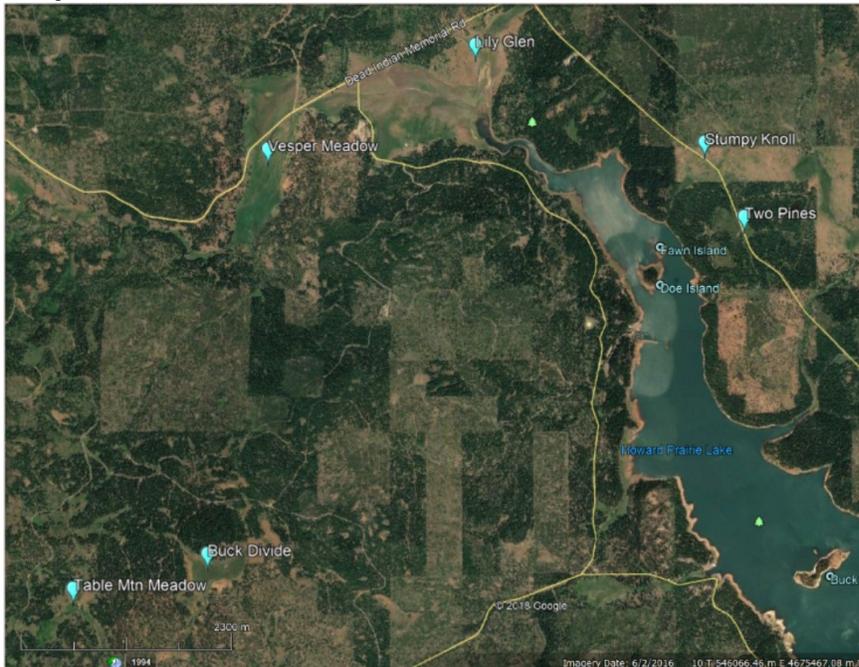
migratory species that moves long distances is challenging. To answer this question, we believe continued research using GPS tags and Motus tracking technology will help increase our detection probabilities on the breeding grounds, and potentially parse out seasonal survival rates as described above. This is a critical next step to identifying limiting factors for this population: discovering whether juveniles are surviving and returning to the breeding grounds (but to areas other than our study sites), or whether they are experiencing high mortality during migration and/or on their overwintering grounds in California.

## Methods

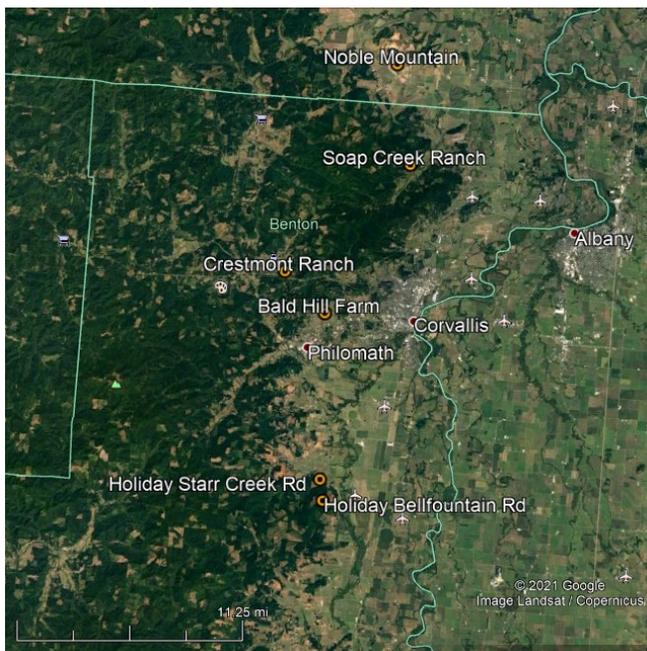
The Rogue Basin population of Oregon Vesper Sparrow is centered at Lily Glen County Park (~20 miles east of Ashland, OR), and the Willamette Valley sites are located in the vicinity of Corvallis, OR (Figures 1 and 2). As part of an ongoing study, Oregon Vesper Sparrows at these sites in 2022 will be regularly surveyed for purposes of resighting color-banded birds. Fifteen adults from these known territories will be captured via target-netting and conspecific song playback. Birds will be fitted with an aluminum band and three color bands. Archival GPS tags (Lotek PinPoint 10; <https://www.lotek.com/products/pinpoint-gps-store-on-board/>) will be placed on birds via a leg harness attachment adjusted for the size of each individual bird (Streby et al. 2015). Care will be taken to minimize handling time and stress on birds. A recent study using this leg harness attachment method found no effects on return rate, return date, territory fidelity, or body mass of 9g wood warblers (Streby et al. 2015). Our deployed GPS units will weigh 1g plus harness weight, allowing us to place them on most Oregon Vesper Sparrow adults (our local banding data show a range in mass of 21-27g), while remaining under the 5% of body weight permitted for bird safety by the Bird Banding Lab. Individuals whose body weight is too low to meet this standard will be banded and released without tags. The GPS units can capture up to 80 location fixes over the course of a year, and they can be programmed to record points on a pre-determined schedule (for instance, 5 points per month during expected summer and winter stationary periods, and 10 times per month during migratory periods). We expect there will be at least 10 additional sparrows that were previously color-banded present in each study region in 2022 that can serve as controls for return rates. Tagged birds will also be located and observed 1-4 days after tagging to ensure normal behavior and no adverse effects.

Battery size is limited in the lightweight tags able to be carried by small songbirds, and thus these units are unable to transmit GPS locations, only store them in the tag. Researchers must rely on a portion of tagged birds surviving the non-breeding season and round-trip migratory journey, and returning to field sites where they can be recaptured to retrieve the stored data. Due to this challenge, most studies of this type have relatively small sample sizes; nevertheless, they have revolutionized our understanding of bird migration. In the spring of 2023, we will return to the study sites to conduct resighting surveys for returning tagged Oregon Vesper Sparrows as well as control birds. We will continue to compare return rates of tagged and control birds to confirm no adverse effects of the tags on survival. When sparrows carrying tags are resighted, we will target-net and recapture them to retrieve the devices and download the GPS data. (Note: 2023 activities are outside of the scope of this proposal, but will be supported by matching funds or in-kind staff time from KBO and ABC).

## Project Area



**Figure 1.** In 2022, 15 Oregon Vesper Sparrow adults will be tagged with GPS units at the Lily Glen County Park study site in the Rogue Basin of southwestern Oregon. In 2023, the resighting effort will be focused on Lily Glen, with occasional visits to search for birds that may have dispersed to nearby meadows (other labelled blue markers) as possible.



**Figure 2.** In 2022, 10 Oregon Vesper Sparrow adults will be tagged with GPS units at Willamette Valley study sites (labelled orange dots) in the vicinity of Corvallis, OR. In 2023, resighting efforts will take place in all six of these study sites.

## **Timeline**

March-April 2022: Plan for field season, purchase, program, and test Lotek GPS tags.

May-June 2022: Target-net 15 birds in the Rogue Basin and 10 birds in the Willamette Valley to deploy GPS tags. Rogue Basin field work will be completed by KBO's Science Director and Research Biologist. The Research Biologist will additionally train the Willamette Valley research team in attaching GPS tags using leg-loop harnesses. Project updates will be posted on social media during and after the field season. Tagged birds will be located and observed 1-4 days post-capture to ensure no adverse effects.

August 2022 - April 2023: Wish the birds a successful journey and wait for them to return!

December 2022: Submit final deliverables to Oregon Wildlife Foundation, including final report on project metrics, social media and blog content, and photos.

April – June 2023 (outside the scope of this proposal): Resighting surveys in both study regions; recapture returning tagged birds.

Fall 2023 (outside the scope of this proposal): Data compilation and final reporting, including social media and blog content.

## **Anticipated Outcomes and Measures of Success**

This project will: 1) Result in new spatial information on the migratory routes and overwintering locations used by the Oregon Vesper Sparrow population breeding throughout Oregon to inform non-breeding season conservation efforts, and 2) Inform future Motus station plans by understanding where to best locate them in California to increase chances of overwintering sparrow detections. We will place GPS tags on 25 Oregon Vesper Sparrows across both study regions, expecting ~15 to survive and return to their breeding grounds, based on current estimates of survival rates for this subspecies. Of these 15, we estimate that we will be able to find and recapture ~8 with useable data (a small percentage of GPS tags may fail). A retrieval rate of about one-third is considered standard for these types of studies using archival datalogger tags on migratory birds. While this sample size is still relatively small, precise data on the winter whereabouts of an additional 8 individuals, including a comparison of those breeding in the Rogue Basin vs. the Willamette Valley, is enormously valuable. This project will be considered successful if we retrieve useable GPS data from at least 30% of the tagged birds.

## **Project Deliverables and Oregon Wildlife Foundation Recognition**

A final report will summarize field methods and outcomes from the tagging effort, including an overview of success metrics. We will write a blog and share project updates throughout the field season on social media. Additionally, we will update web content to the Oregon Vesper Sparrow page on the Klamath Bird Observatory website about this aspect of the project ([www.klamathbird.org/science/vesper-sparrow-project/notes-from-the-field/](http://www.klamathbird.org/science/vesper-sparrow-project/notes-from-the-field/) and [www.klamathbird.org/science/vesper-sparrow-project/expanding-research-with-cutting-edge-technology/](http://www.klamathbird.org/science/vesper-sparrow-project/expanding-research-with-cutting-edge-technology/)). High resolution photos will be submitted along with the final report to document project implementation and progress to date. Oregon Wildlife Foundation will be recognized for their support on all print and digital media and will be verbally recognized during any presentations or research symposiums.

## References

- Altman, B. 2011. Historical and Current Distribution and Populations of Bird Species in Prairie-Oak Habitats in the Pacific Northwest. *Northwest Science* 85:194–222.
- Altman, B. 2015. Oregon Vesper Sparrow Range-wide Inventory and Habitat Assessment. American Bird Conservancy.
- Altman, B. 2018. Limiting factors on populations of Oregon Vesper Sparrow: an assessment of demographic parameters to direct conservation actions in the Willamette Valley, 2016-2018. Report prepared for Oregon Department of Fish and Wildlife: Agreement #069-18. American Bird Conservancy, Boring, OR.
- ABC (American Bird Conservancy). 2016. Petition to List Oregon Vesper Sparrow (*Pooecetes gramineus affinis*) as Endangered or Threatened under the U.S. Endangered Species Act. <https://abcbirds.org/wp-content/uploads/2016/11/Oregon-Vesper-Sparrow-Petition.pdf>.
- ODFW (Oregon Department of Fish and Wildlife). 2016. The Oregon Conservation Strategy. Oregon Department of Fish and Wildlife, Salem, OR.
- Rosenberg, K. V., J. A. Kennedy, R. Dettmers, R. P. Ford, D. Reynolds, J. D. Alexander, C. J. Beardmore, P. J. Blancher, R. E. Bogart, G. S. Butcher, A. F. Camfield, A. Couturier, D. W. Demarest, W. E. Easton, J. J. Giocomo, R. H. Keller, A. E. Minni, A. O. Panjabi, D. N. Pashley, T. D. Rich, J. M. Ruth, H. Stabins, J. Stanton, and T. Will. 2016. Partners in Flight landbird conservation plan: 2016 revision for Canada and continental United States. Partners in Flight Science Committee. <http://www.partnersinflight.org/plans/landbird-conservation-plan/>.
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- Stephens, J. L. 2018. Limiting factors for the Oregon Vesper Sparrow population: An assessment of demographic parameters to direct conservation action in the Rogue Basin, Oregon. Klamath Bird Observatory, Ashland, OR.
- Streby, H. M., T. L. McAllister, S. M. Peterson, G. R. Kramer, J. A. Lehman, and D. E. Andersen. 2015. Minimizing marker mass and handling time when attaching radio-transmitters and geolocators to small songbirds. *The Condor* 117:249-255.
- Taylor, P. D., T. L. Crewe, S. A. Mackenzie, et al. 2017. The Motus Wildlife Tracking System: a collaborative research network to enhance the understanding of wildlife movement. *Avian Conservation and Ecology* 12.
- USFWS (U.S. Fish and Wildlife Service). 2021. Birds of Conservation Concern 2021. United States Department of Interior, Fish and Wildlife Service, Division of Migratory Bird Management, Arlington, VA. <http://www.fws.gov/migratorybirds>.

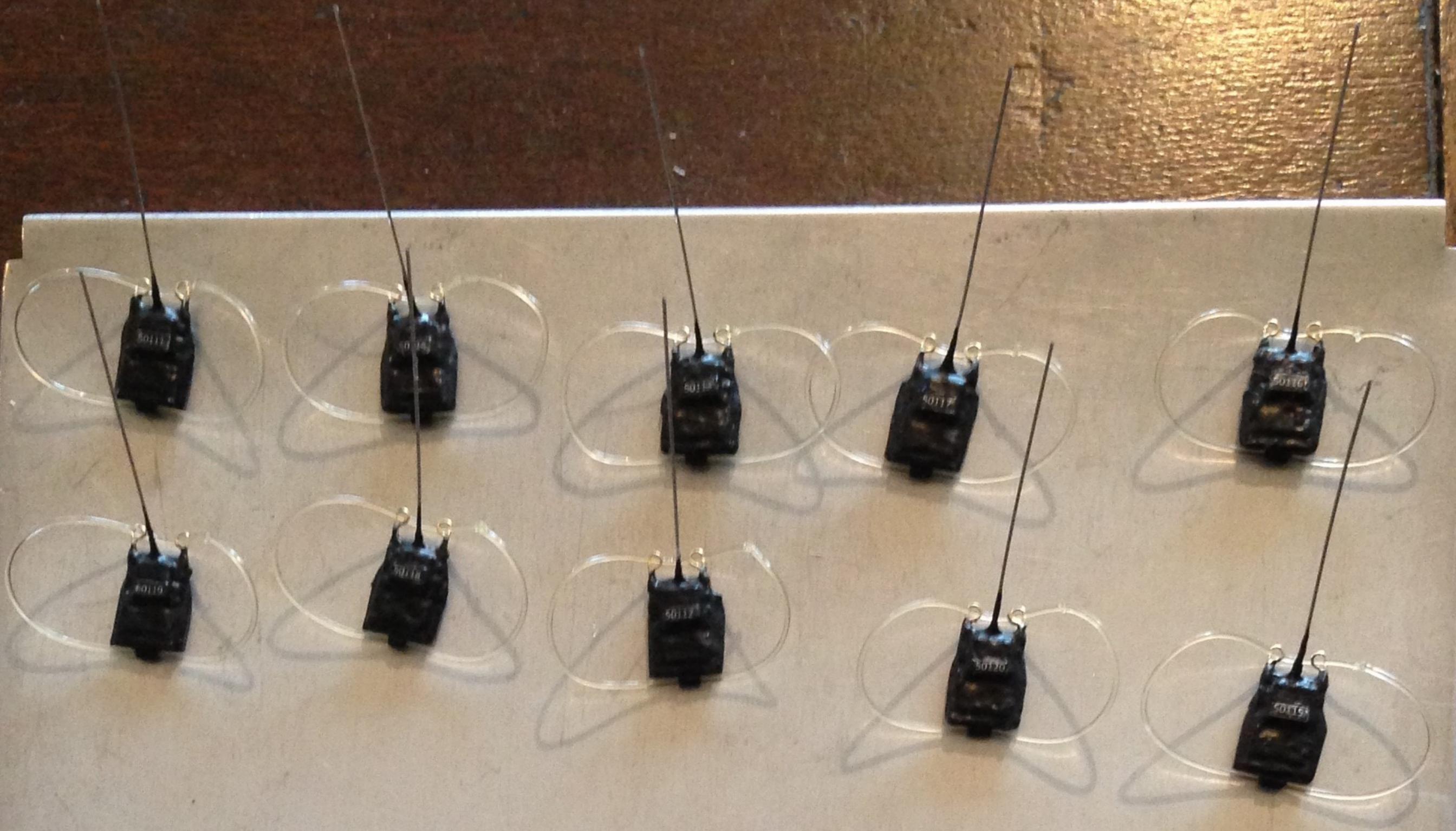




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# Oregon

Kate Brown, Governor

**Department of Fish and Wildlife**

Director's Office

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[www.dfw.state.or.us/](http://www.dfw.state.or.us/)

Oregon Wildlife Foundation  
901 SE Oak St, Suite 103  
Portland, OR 97214

February 3, 2022



RE: Using GPS technology to track year-round movements of multiple Oregon Vesper Sparrow breeding populations

To the Oregon Wildlife Foundation Grant Review Team:

I am writing to express my support for the Klamath Bird Observatory's (KBO) project proposal, *Using GPS technology to track year-round movements of multiple Oregon Vesper Sparrow breeding populations*. The Oregon Vesper Sparrow is an Oregon Conservation Strategy Species in the Willamette Valley and Klamath Mountains ecoregions, and one of the top five priority species identified by the Oregon Department of Fish and Wildlife in the Willamette Valley ecoregion. This project proposal may help elucidate components of the Oregon Vesper Sparrow's life history that are currently poorly understood and provide information that will inform successful conservation efforts in the future.

The Oregon Vesper Sparrow is of high conservation concern throughout its breeding and wintering ranges and is currently under review for listing under the Endangered Species Act. Recent estimates suggest the Oregon Vesper Sparrow population is only 2,000 - 3,000 individuals. The population in the Rogue Basin is estimated to be 100-150 individuals, while the Willamette Valley hosts the largest remaining populations. Migratory routes, stopover sites, and overwintering locations used by Oregon Vesper Sparrow are not well documented, and threats at these sites are largely unknown. Additional data collected under this project proposal will contribute to a broader understanding of non-breeding season habitat use, threats at sites used, and help to inform the prioritization of conservation actions to benefit Oregon breeding populations. Further, this project directly supports an ongoing range-wide demographic study that will inform management actions to slow the decline and prevent extirpations of this unique subspecies.

I am supportive of the approach taken in this project, and strongly believe that the data collected will positively contribute to conservation efforts for the Oregon Vesper Sparrow.

Thanks for your consideration,

Emily VanWyk

Strategy Species Coordinator

Oregon Department of Fish and Wildlife

January 31, 2022

Oregon Wildlife Foundation  
901 SE Oak St, Suite 103  
Portland, OR 97214

Re: Using GPS technology to track year-round movements of multiple Oregon Vesper Sparrow breeding populations

To the Oregon Wildlife Foundation Grant Review Team:

I am pleased to provide this letter of support for the project *Using GPS technology to track year-round movements of multiple Oregon Vesper Sparrow breeding populations* put forth by Klamath Bird Observatory (KBO). This project complements a larger range-wide effort towards understanding Oregon Vesper Sparrow ecology and conservation that has been partially funded by OWF and is being led by American Bird Conservancy, from which I am recently retired but still affiliated. The range-wide study is examining potential demographic factors limiting current population size, to directly inform management actions to slow declines and prevent local extirpations of Oregon Vesper Sparrow.

This work would provide new information relevant to Oregon Vesper Sparrow conservation and management needs, using relatively novel technology that is on the forefront of migratory bird research today. Miniaturized archival GPS tags will allow us to study where birds breeding at our study sites migrate and spend the winter. This knowledge is almost entirely lacking for Oregon Vesper Sparrow, with the very first precise data coming from the first year of this GPS-tagging project. This is a hindrance to current conservation efforts – we need to know what areas birds occupy throughout the year before we can identify potential threats and how to mitigate them. Increasing the current sample size of tracked birds and expanding to the Willamette Valley will be extremely valuable. Results from this work could have range-wide implications for conservation actions. They would also allow us to more effectively choose non-breeding sites for future Motus stations that could further expand our ability to track and monitor survival of these birds during migration or winter.

The Oregon Vesper Sparrow population is estimated to be approximately 3,000 individuals, and it was petitioned for listing under the Endangered Species Act in 2017. The research proposed here by KBO will provide new scientific data that directly supports a larger, range-wide Oregon Vesper Sparrow conservation effort. I fully support this important effort to further advance conservation of the Oregon Vesper Sparrow, and will collaborate with KBO to take the lead on deploying GPS tags in the Willamette Valley.

Sincerely,



Bob Altman