

## Olivia V. Sanderfoot

Postdoctoral Fellow

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### Education & Training

Postdoctoral Fellow	2023–Present	<b>Natural History Museum of Los Angeles County and UCLA La Kretz Center for California Conservation Science</b> <i>Leveraging community science and museum collections to study how birds respond to wildfire smoke</i>
Postdoctoral Scholar	2022–2023	Advisors: Morgan Tingley, Allison Shultz <b>University of California, Los Angeles</b> Department of Ecology & Evolutionary Biology <i>Linking big data in ecology and atmospheric science to investigate effects of wildfire smoke on wildlife</i>
Ph.D.	2017–2021	Advisor: Morgan Tingley <b>University of Washington</b> School of Environmental & Forest Sciences <i>Impacts of fine particulate matter on the health, behavior, and detection of birds and other wildlife</i>
M.S.	2015–2017	Advisor: Beth Gardner Committee: Julia Parrish, Sarah Converse, Peter Hodum, Joel Kaufman <b>University of Wisconsin–Madison</b> Nelson Institute for Environmental Studies <i>Synthesizing knowledge of air pollution impacts on birds and outlining critical gaps for future study</i>
B.S.	2011–2015	Advisor: Tracey Holloway Committee: Ben Zuckerberg, Paul Robbins <b>University of Wisconsin–Madison</b> College of Letters & Science Majors: Biology, Spanish Certificate: Environmental Studies

### Awards & Funding

<b>UCLA La Kretz Center for California Conservation Science Postdoctoral Fellowship</b> Amount: \$170,000	2023
<b>UCLA Institute for Digital Research and Education Postdoctoral Fellowship</b> Amount: \$5,000	2022
<b>National Geographic Society Research Grant</b> Role: Named collaborator (PI: Jamie Cornelius)   Amount: \$98,550	2022
<b>AAAS Science &amp; Technology Policy Fellowship Finalist</b> (declined)	2022
<b>McIntire-Stennis Cooperative Forestry Research Program Grant</b> Role: Named collaborator (PI: Beth Gardner)   Amount: \$98,086	2019

<b>National Science Foundation Graduate Research Fellowship</b>	2016
Amount: \$138,000	
<b>Welton Honors Summer Sophomore Apprenticeship Research Grant</b>	2012
Amount: \$2,000	

## Honors

<b>Ornithology “Editor’s Choice”</b>	2024
For “Wildfire smoke impacts the body condition and capture rates of birds in California”	
<b>Association for Advancing Participatory Sciences Thought Leader</b>	2023
<b>Ornithological Applications “Editor’s Choice”</b>	2021
For “Wildfire smoke affects detection of birds in Washington State”	
<b>University of Washington Graduate School Medal Nominee</b>	2021
<b>University of Washington Husky 100</b>	2020
<b>University of Washington College of the Environment Graduate Dean’s Medalist</b>	2019
Nominee	
<b>Ford Foundation Fellowship Predoctoral Competition Honorable Mention</b>	2018
<b>Environmental Research Letters “Highlight of the Year”</b>	2017
For “Air pollution impacts on avian species via inhalation exposure and associated outcomes”	

## Publications

\* Undergraduate or postbaccalaureate mentee

^ Paper in the **top 5%** of all research outputs scored by Altmetric

- Sanderfoot, O. V.**, A. Ung\*, S. English, L. Tell, and M. W. Tingley. In prep. Wildfire smoke alters activity of California hummingbirds at feeders.
- Aubrey, M.\*, S. DuBay, **O. V. Sanderfoot**, and A. Shultz. In prep. Black Carbon in Coastal SoCal: Using museum collections to quantify atmospheric pollution through time.
- Adegbola, F., S. Evans, **O. V. Sanderfoot**, and A. Wilson. In prep. Impact of Canadian wildfire smoke on bird detection in eastern United States.
- Spina, H., **O. V. Sanderfoot**, and M. W. Tingley. In prep. Wildfire smoke reduces reproductive success of birds in eastern North America.
8. **Sanderfoot, O. V.**, M. W. Tingley, S. B. Bassing, J. Vaughn, N. June, and B. Gardner. 2024. Hazardous wildfire smoke events can alter dawn soundscapes in dry forests of central and eastern Washington, United States. *Global Ecology & Conservation*. 54: 1-14. [doi: 10.1016/j.gecco.2024.e03044].
  7. Nihei, A.\*, **O. V. Sanderfoot**, K. LaBarbera, and M. W. Tingley. 2024. Wildfire smoke impacts the body condition and capture rates of birds in California. *Ornithology*. 141: 1-11. [doi: 10.1093/ornithology/ukae023].
  6. Ayars, J.\*, R. L. Emmet, S. B. Bassing, **O. V. Sanderfoot**, S. Raby, A. Karambelas, E. P. James, R. Ahmadov, and B. Gardner. 2023. Camera traps link population-level activity patterns with wildfire smoke events for mammals in eastern Washington State. *Fire Ecology*. 19: 1-15. [doi: 10.1186/s42408-023-00207-1].
  5. **Sanderfoot, O. V.**, J. D. Kaufman, and B. Gardner. 2022. Drivers of avian habitat use and detection of backyard birds in the Pacific Northwest during COVID-19 pandemic lockdowns. *Scientific Reports*. 12: 1-11. [doi: 10.1038/s41598-022-16406-w]. ^
  4. **Sanderfoot, O. V.**, S. B. Bassing, J. L. Brusa, R. L. Emmet, S. J. Gillman, K. Swift, and B. Gardner. 2022. A review of the effects of wildfire smoke on the health and behavior of wildlife. *Environmental Research Letters*. 16: 1-24. [doi: 10.1088/1748-9326/ac30f6]. ^ (**cited 51 times**)
  3. **Sanderfoot, O. V.**, and B. Gardner. 2021. Wildfire smoke affects detection of birds in Washington State. *Ornithological Applications*. 123: 1-14. [doi: 10.1093/ornithapp/duab028]. ^

2. Holloway, T., and **O. V. Sanderfoot**. 2019. Intercontinental air pollution transport: Links to environmental health. Pages 688-694 in Nriagu, J., editor. *Encyclopedia of Environmental Health*. Second edition, volume three. Elsevier, Cambridge, MA, United States.
1. **Sanderfoot, O. V.**, and T. Holloway. 2017. Air pollution impacts on avian species via inhalation exposure and associated outcomes. *Environmental Research Letters*. 12: 1-14. [doi: 10.1088/1748-9326/aa8051]. ^ (cited 114 times)

### **Teaching & Mentoring:**

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| 2022–Present | <b>Undergraduate Research Mentor</b>   University of California, Los Angeles<br>Mentoring undergraduate and high school students leading capstone projects and contributing to ongoing research in Dr. Morgan Tingley's lab.                         |
| 2023–2024    | <b>Co-Mentor</b>   Natural History Museum of Los Angeles County<br>Supported mentees in Understanding Nature & Los Angeles Biodiversity, an NSF-funded post-baccalaureate training program.  |
| 2019–2021    | <b>Undergraduate Research Mentor</b>   University of Washington<br>Mentored undergraduate students leading independent research projects.  |
| 2020–2022    | <b>Guest Lecturer</b>   University of Washington<br>Taught classes on wildlife ecology, environmental studies, and birding in the School of Environmental & Forest Sciences and School of Music.   |
| 2020         | <b>Teaching Assistant</b> , Introduction to Probability and Statistics   University of Washington<br>Led a weekly lab section of 40 students and tutored students one-on-one during office hours. Contributed to curriculum development and grading. |
| 2019         | <b>Educator</b>   Birds Connect Seattle Nature Camp<br>Led small groups of campers in nature-based educational activities and outdoor exploration. Developed new games to support learning through play.   |
| 2017         | <b>Interim Director of Education</b>   Southern Wisconsin Bird Alliance<br>Led all summer programming, which served over 500 children. Developed new curricula for pre-K and K-12 students.  |

### **Outreach & Civic Engagement**

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| 2022–Present | <b>Program Director</b>   <b><u>Project Phoenix: Investigating Bird Responses to Smoke</u></b><br>Leading regional community science program to monitor birds during wildfire season. Currently engaging 400+ volunteers in California, Oregon, and Washington. |
| 2020         | <b>Project Coordinator</b>   <b>COVID-19 Lockdown Birding Study</b><br>Engaged 900+ community scientists in monitoring avian responses to shifts in human activity in the Pacific Northwest during COVID-19 lockdowns.  |
| 2019         | <b>Expert Testimony</b><br>Invited by Audubon Washington to provide expert testimony in support of a clean fuels standard in Washington state for the Washington House Environment & Energy Committee and the Puget Sound Clean Air Agency Board of Directors.  |
| 2019         | <b>AAAS Catalyzing Advocacy in Science &amp; Engineering Workshop</b><br>Invited to participate in a workshop on science policy in D.C. and met with Senator Patty Murray to advocate for federal funding for science.  |
| 2018–Present | <b>Opinion Contributor</b><br>To date, published op-eds (2) and letters to the editor (4) in major national newspapers, including <i>The New York Times</i> and <i>The Los Angeles Times</i> .  |
| 2017–2022    | <b>Environmental Educator &amp; Community Scientist</b>   Birds Connect Seattle<br>Volunteered in K-12 classrooms and supported local bird monitoring projects.   |

2015–2017      **Environmental Educator** | Southern Wisconsin Bird Alliance  
Taught K-12 students at local community centers.

### **Departmental & University Service**

2024      **La Kretz Center + Stunt Ranch Research Awards Committee** | UCLA La Kretz Center for California Conservation Science

2023–2024      **Postdoctoral Fellowship Selection Committee** | UCLA La Kretz Center for California Conservation Science

2022–2023      **Arts Showcase Planning Committee** | UCLA Department of Ecology & Evolutionary Biology

2022–2024      **Voces en EEB** | UCLA Department of Ecology & Evolutionary Biology  
Co-organized a departmental discussion group to talk about science in Spanish.

2022      **Symposium Co-Chair** | International Ornithological Congress  
Organized and facilitated two symposia: *The “Anthropause” as a natural experiment: Leveraging ornithological studies during COVID-19 lockdowns to develop conservation strategies for a post-pandemic world* and *A global review of the impacts of COVID-19 lockdowns on birds*.

2021–Present      **Science Policy Workshops**  
Develop workshops for colleagues and mentees on how to engage in science policy as an academic researcher.

2021      **Symposium Co-chair** | Joint Meeting of the American Ornithological Society and the Society of Canadian Ornithologists  
Organized and moderated symposium: *Lessons Learned In Lockdown: Impacts of the COVID-19 Pandemic on Birds*.

2020–Present      **Academic Journal Peer Review**  
Provide peer review for a wide range of academic journals, including *Biological Conservation*, *Global Biology & Biogeography*, *Current Biology*, *Environmental Science & Technology*, and *Scientific Reports*.

2019–2020      **Graduate & Professional Student Senate** | University of Washington

2019–2020      **Graduate Student Council** | University of Washington School of Environmental & Forest Sciences

2018–2019      **Equity & Accountability Committee** | University of Washington Graduate & Professional Student Senate

### **Presentations**

#### *Invited Talks:*

Surveying canaries in a coal mine: The power of public participation to advance understanding of air pollution impacts on birds. Ecological Society of America Annual Meeting. August 2023.

#### *Contributed Conference Talks:*

Avian habitat use and detection of backyard birds in the Pacific Northwest during COVID-19 lockdowns. International Ornithological Congress. August 2022.

Effects of COVID-19 lockdowns on migratory and backyard birds: A review of research approaches and comparative results. Joint Meeting of the American Ornithological Society and the Society of Canadian Ornithologists. August 2021.

Smoke Signals: How elevated particulate levels during the wildfire season impacted bird observations in Washington State. American Fisheries Society and The Wildlife Society Joint Conference. October 2019.

A bird's-eye view of air pollution: How avifauna may be impacted by health-damaging air pollutants. Nelson Institute Earth Day Conference. April 2017.

*Research Seminars:*

Leveraging big data in ecology and atmospheric science to study impacts of wildfire smoke on birds. UCLA Institute for Digital Research & Education. June 2023.

Up in Smoke: Leveraging community science and museum collections to evaluate impacts of wildfire smoke on California's backyard birds and identify conservation opportunities. UCLA La Kretz Center for California Conservation Science. February 2023.

Detecting birds in hazy skies: Effects of air pollution on bird observations. UW School of Aquatic & Fishery Sciences. November 2021.

*Flash Talks:*

Big Ideas for the Future of Participatory Sciences: A 10-Year Celebration Event. Association for Advancing Participatory Sciences. October 2023.

Connecting earth science disciplines to safeguard birds. Ignite@AGU. December 2022.

A bird's-eye view of air pollution: How birds are impacted by health-damaging air pollutants. Wisconsin Festival of Ideas. April 2017.

*Selected Public Events:*

Community is Key: Engaging the Public to Advance Understanding of Air Pollution Impacts on Birds. Peggy Notebaert Nature Museum. November 2024.

Project Phoenix: Engaging the public to unravel the mystery of how birds respond to wildfire smoke in the American West. Klamath Bird Observatory. August 2024.

When Smoke Gets in Your Eyes: Effects of smoke on the health, behavior, and detection of birds. Los Angeles Birders. January 2023.

Birding for Cleaner Skies: Leveraging community science to learn about how air pollution impacts birds. Sun Prairie Rotary Club. May 2021.

Not Just Powered by Sugar: The Energetic Strategies of Hummingbirds. Birds Connect Seattle. April 2021.

Join the Flock! Learn how ornithologists use community science data and how to get involved. King County Library System. April 2021.

Canary in a Coal Mine, Revisited: Emerging evidence of air pollution as an overlooked threat to birds. Washington Ornithological Society. December 2020.

**Selected Interviews & Media Coverage**

*Articles:*

Here's How the Los Angeles Wildfires Are Affecting Animals, From Fish to Snakes to Birds. *Smithsonian Magazine*. Feb. 5, 2025.

How the Wildfires Could Reshape the Climate Movement in California. *The Nation*. Jan. 28, 2025.

Is Wildfire Smoke Causing Birds to Tend to Empty Nests? *Smithsonian Magazine*. Sep. 30, 2024.

A Major Climate Threat Could Be Disastrous To Birds. *The Atlantic*. Jul. 11, 2024.

How Do Birds Respond to Extreme Wildfire Haze? Project Phoenix Aims to Find Out. *Audubon Magazine*. Winter 2023.

How Megafires Are Remaking the World. *The New York Times*. Oct. 18, 2023.

What Wildfire Smoke Means For Birds. *The New York Times*. Aug. 18, 2023.

Wildfire smoke affects birds too. Here's how you can help. *National Geographic*. Jun. 20, 2023.

Clouds of wildfire smoke are toxic to humans and animals alike. *Popular Science*. Jun. 12, 2023.

How Wildfire Smoke Affects Wildlife – And Your Pets. *TIME Magazine*. Jun. 7, 2023.

New UW study shows how COVID lockdowns affected Northwest birds. *The Seattle Times*. Aug. 11, 2022.

How does wildfire smoke affect wildlife? Here's what we know. *National Geographic*. Oct. 20, 2021.

What Scientists Know About Wildfire Smoke and Its Impact on Wild Animal Health. *Discover Magazine*. Sep. 13, 2021.

Wildfire smoke impacts what birds we see, hear according to UW study. *The Spokesman Review*. Jul. 5, 2021.

Birds Need Clean Air Safeguards Just as Much as We Do. Here's Why. *Living Bird*. Jun. 25, 2021.

How birds in the Pacific Northwest have experienced the pandemic. *Crosscut*. May 26, 2021.

Seattle is in smoke. What's happening to the birds? *The Seattle Times*. Sep. 17, 2020.

Amid the coronavirus pandemic, people are paying more attention to tweets. And not the Twitter kind. *The Washington Post*. May 22, 2020.

What Can Birds Tell Us About Pollution? *Audubon*. Sep. 1, 2017.

*Radio & Podcasts:*

Wildfire smoke has gone to the birds. Seattle Now | KUOW 94.9 FM. Seattle, WA. Sep. 4, 2024.

How To Help Birds When It's Smoky Outside. What On Earth with Laura Lynch | Canadian Broadcasting Corporation (CBC) Radio. Jun. 2, 2024.

Health experts are still learning the impact of wildfire smoke on animals. WDET 101.9 FM. Detroit, MI. Aug. 17, 2023.

Birds, Wildfires, and Smoke with Olivia Sanderfoot. American Birding Podcast. Nov. 10, 2022.

How dramatic pandemic shifts affected Northwest birds. KUOW 94.9 FM. Seattle, WA. Aug. 15, 2022.

Outside/In[box]: Is Wildfire Smoke Impacting Bird Migration? New Hampshire Public Radio. Oct. 14, 2021.

Birding 101: You don't need fancy binoculars to be a bird nerd. Seattle Now | KUOW 94.9 FM. Seattle, WA. Jul. 8, 2021.

Study: How smoke affects birds in Washington... and our ability to see them. KNKX 88.5 FM (Seattle, WA). Jul. 7, 2021.

Endangering the Endangered Species Act. 8 O'Clock Buzz | WORT 89.9 FM. Madison, WI. Aug. 19, 2019.

Birds Studied for Reaction to Wildfire Smoke. Spokane Public Radio. Spokane, WA. Aug. 21, 2018.

*TV:*

Incendios generan drásticos cambios en la migración de los gansos en California. Telemundo 48. San José, CA. Jan. 4, 2022.

Volunteers help researchers track bird populations during pandemic. KGW8. Portland, OR. Aug. 1, 2020.