

Olivia V. Sanderfoot

Research Scientist & Project Leader, FeederWatch
Cornell Lab of Ornithology
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Current Position

Research Scientist
Project Leader, FeederWatch

Cornell Lab of Ornithology
Center for Engagement in Science and Nature

Education & Training

Postdoctoral Fellow 2023–2025*

* on maternity
leave March–
August 2024

**Natural History Museum of Los Angeles County and UCLA La
Kretz Center for California Conservation Science**

*Leveraging community science and museum collections to study how
birds respond to wildfire smoke*

Advisors: Morgan Tingley, Allison Shultz

Postdoctoral Scholar 2022–2023

University of California, Los Angeles
Department of Ecology & Evolutionary Biology

*Linking big data in ecology and atmospheric science to investigate
effects of wildfire smoke on wildlife*

Advisor: Morgan Tingley

Ph.D. 2017–2021

University of Washington
School of Environmental & Forest Sciences

*Impacts of fine particulate matter on the health, behavior, and
detection of birds and other wildlife*

Advisor: Beth Gardner | Committee: Julia Parrish, Sarah Converse,
Peter Hodum, Joel Kaufman

M.S. 2015–2017

University of Wisconsin–Madison
Nelson Institute for Environmental Studies

*Synthesizing knowledge of air pollution impacts on birds and
outlining critical gaps for future study*

Advisor: Tracey Holloway | Committee: Ben Zuckerberg, Paul
Robbins

B.S. 2011–2015

University of Wisconsin–Madison
College of Letters & Science

Majors: Biology, Spanish
Certificate: Environmental Studies

Awards & Funding

Cornell Lab of Ornithology 2026 Experiential Learning Awards Amount: \$12,000	2026
American Ornithological Society Caregiver Grant Amount: \$465	2025
UCLA La Kretz Center for California Conservation Science Postdoctoral Fellowship Amount: \$170,000	2023
UCLA Institute for Digital Research and Education Postdoctoral Fellowship Amount: \$5,000	2022
National Geographic Society Research Grant Role: Named collaborator (PI: Jamie Cornelius) Amount: \$98,550	2022
AAAS Science & Technology Policy Fellowship Finalist (declined)	2022
McIntire-Stennis Cooperative Forestry Research Program Grant Role: Named collaborator (PI: Beth Gardner) Amount: \$98,086	2019
National Science Foundation Graduate Research Fellowship Amount: \$138,000	2016
Welton Honors Summer Sophomore Apprenticeship Research Grant Amount: \$2,000	2012

Honors

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

Publications

- * Undergraduate or postbaccalaureate mentee
- + Co-first authorship
- ^ Paper in the **top 5%** of all research outputs scored by Altmetric

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.

Sanderfoot, O. V., A. Ung*, J. C. Brown, S. G. English, L. Tell, and M. W. Tingley. In review. Wildfire smoke alters the presence and activity of hummingbirds at feeders in California. *Ornithological Applications*.

Spina, H., **O. V. Sanderfoot**+, R. Ahmadov, R. L. Bailey, E. James, A. Karambelas, S. Raby, J. Siegrist, and M. W. Tingley. In review. Wildfire smoke delays songbird breeding and reduces hatching success. *Science*.

Adegbola, F., S. Evans, **O. V. Sanderfoot**, and A. Wilson. In review. Impact of Canadian wildfire smoke on bird detection in eastern United States. *Biodiversity and Conservation*.

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 119 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 200 times**)

Teaching & Mentoring:

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| 2026–Present | Undergraduate Research Mentor Cornell University
Mentoring undergraduate students from across campus in interdisciplinary, independent research projects. |
| 2022–2025 | Undergraduate Research Mentor University of California, Los Angeles
Mentored undergraduate and high school students leading capstone projects and contributing to ongoing research in Dr. Morgan Tingley’s lab. |
| 2023–2024 | Co-Mentor Natural History Museum of Los Angeles County
Supported mentees in Understanding Nature & Los Angeles Biodiversity, an NSF-funded post-baccalaureate training program. |
| 2019–2021 | Undergraduate Research Mentor University of Washington
Mentored undergraduate students leading independent research projects. |
| 2020–2022 | Guest Lecturer University of Washington
Taught classes on wildlife ecology, environmental studies, and birding in the School of Environmental & Forest Sciences and School of Music. |
| 2020 | Teaching Assistant , Introduction to Probability and Statistics University of Washington
Led a weekly lab section of 40 students and tutored students one-on-one during office hours. Contributed to curriculum development and grading. |
| 2019 | Educator Birds Connect Seattle Nature Camp
Led small groups of campers in nature-based educational activities and outdoor exploration. Developed new games to support learning through play. |
| 2017 | Interim Director of Education Southern Wisconsin Bird Alliance
Led all summer programming, which served over 500 children. Developed new curricula for pre-K and K-12 students. |

Outreach & Civic Engagement

- 2022–Present **Program Director | Project Phoenix: Investigating Bird Responses to Smoke**
Leading regional community science program to monitor birds during wildfire season. Currently engaging 2,000+ volunteers in California, Oregon, and Washington.
- 2020 **Project Coordinator | COVID-19 Lockdown Birding Study**
Engaged 900+ community scientists in monitoring avian responses to shifts in human activity in the Pacific Northwest during COVID-19 lockdowns.
- 2019 **Expert Testimony**
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 **AAAS Catalyzing Advocacy in Science & Engineering Workshop**
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 **Opinion Contributor**
To date, published op-eds (2) and letters to the editor (4) in major national newspapers, including *The New York Times* and *The Los Angeles Times*.
- 2017–2022 **Environmental Educator & Community Scientist | Birds Connect Seattle**
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

- 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*.
- 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*.
- 2021–2025 **Science Policy Workshops**
Developed 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*.
- 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:

- Up In Smoke: Impacts of Wildfire Smoke on the Health and Behavior of Birds. Western Working Group, Partners In Flight Spring Meeting. April 2025.
- Project Phoenix: Investigating Bird Responses to Smoke. Western Working Group, Partners In Flight Spring Meeting. April 2025.
- 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:

- Looking Forward: Connecting researchers to advance knowledge of smoke impacts on birds. American Ornithological Society Annual Meeting. August 2025.
- Wildfire smoke alters activity of hummingbirds at feeders in California. American Ornithological Society Annual Meeting. August 2025.
- 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:

- Out of the Fire, Into the Smoke: Emerging understanding of the widespread effects of smoke disturbance on birds. Southern Wisconsin Bird Alliance. February 2026.
- Project FeederWatch: Discover the joy of winter birding, right from your home. Birdability. January 2026.

- Project FeederWatch: Engaging the public to monitor winter birds in North America. Orange Audubon. November 2025.
- Out of the Fire, Into the Smoke: How wildfire smoke is impacting the health and behavior of birds. Birds Connect Seattle. August 2025.
- Up in Smoke: Impacts of Wildfire Smoke and Urban Air Pollution on Birds. Palos Verdes/South Bay Audubon Society. April 2025.
- 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:

- Want More Birds in Your Yard? Add These Foods to Your Backyard Feeder. *Country Living*. Feb. 14, 2026.
- Should I Use a Hummingbird Feeder in Winter? What Experts Say. *Country Living*. Jan. 27, 2026.
- How are California's birds faring amid ever more frequent wildfires? *Mongabay*. Dec. 31, 2025.
- Should You Leave Bird Feeders Out All Winter? Here's What Experts Say. *Martha Stewart*. Oct. 21, 2025.
- How To Protect Your Pets From Pollution. *The New York Times*. Oct. 7, 2025.
- In a Toxic World, Pets Could Be Vital Health Watchdogs. *The New York Times*. Oct. 7, 2025.
- Is It Okay to Leave Your Bird Feeder Up Year-Round? *Country Living*. Sep. 24, 2025.
- 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:

Project Phoenix with Olivia Sanderfoot and Allison Shultz – How Wildfires Are Impacting Birds | Birds of a Feather Talk Together. Sep. 15, 2025.

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.