

Ruth Yvonne Oliver

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(she/her)

Education

2019	PhD Earth & Environmental Sciences	Columbia University
	Dissertation: <i>Spatiotemporal dynamics of songbird breeding at high northern latitudes</i>	
	Committee: Drs. Natalie Boelman, Kevin Griffin, and Daniel Ellis	
2017	MPhil Earth & Environmental Sciences	Columbia University
2015	MA Earth & Environmental Sciences	Columbia University
2013	BA Physics	Claremont McKenna College

Appointments

July 2022 - present	Assistant Professor Kuni Endowed Junior Faculty Fellow University of California Santa Barbara Bren School of Environmental Science & Management
2021 - 2022	Associate Research Scientist
2019 - 2021	Postdoctoral Associate Yale University Center for Biodiversity and Global Change Dept. of Ecology and Evolutionary Biology Advisor: Dr. Walter Jetz

Publications

*equal contribution, student mentee

Note: authors listed in order of contribution, senior author listed last

In progress

1. **RY Oliver***, SW Yanco*, D Ellis-Soto, BR Jesmer, S Gao, R Patchett, [data providers and additional partners of the COVID-19 Bio-Logging Initiative], C Rutz, W Jetz. Interacting effects of human mobility and landscape modification on wildlife.
In preparation
2. **RY Oliver**, MS Chapman, N Emery, L Gillespie, N Gownaris, S Leiker, A Nisi, D Ayers, I Breckheimer, H Blondin, AM Hoffman, C Pagniello, M Raisle, N Zimmerman. Opening a conversation on responsible environmental data science in the age of large language models.
In press at Environmental Data Science
3. M Wikelski, M Quetting, J Bates, G Bohrer, L Börger, T Chapple, M Crofoot, SC Davidson, D Dechmann, D Ellis-Soto, E Ellwood, W Fiedler, A Flack, B Fruth, N Franconi, R Havmoeller, J Hirt, N Hussey, F Iannarilli, M Landwehr, M Mueller, T Müller, U Müller, **RY Oliver**, J Partecke, I Pokrovsky, L Pokrovskaya, D Rubenstein, C Rutz, K Safi, A Santangeli, L van Schalkwyk, A Sequeira, S Sherub, T Ramesh, P Viljoen, K Wasik, T Wild, S Yanco and R Kays. Introducing a unique animal ID and digital life history museum for wildlife metadata.
Accepted at Methods in Ecology and Evolution

4. SW Yanco, **RY Oliver**, F Iannarilli, G Heine, U Mueller, N Richter, B Vorneweg, Y Andryushchenko, N Batbayar, B Galtbalt, AE Gavrillov, OA Goroshko, EI Ilyashenko, VY Ilyashenko, EA Mudrik, T Natsagdorj, S Sherub, T Sukhbaatar, M Wikelski, W Jetz, I Pokrovsky. Migratory birds modulate niche tradeoffs in rhythm with seasons and life history.
In review
5. E Parker, SR Weiskopf, **RY Oliver**, M Rubenstein, W Jetz. Insufficient and biased representation of species geographic responses to climate change.
In review
6. N Hulkund, MS Chapman, **RY Oliver**, S Beery. Data sharing policies and considerations must influence machine learning research directions in ecological applications.
In review
7. WK Oestreich, **RY Oliver**, MS Chapman, M Go, MF McKenna. Listening to animal behavior to understand changing ecosystems.
In revision
8. SW Yanco, C Rutz, B Abrahms, PP Marra, BC Weeks, M Wikelski, **RY Oliver**. Tracking individual animals can reveal the drivers of species loss.
In preparation

Published

9. **RY Oliver**, MS Chapman, D Ellis-Soto, V Brum-Bastos, F Cagnacci, JA Long, M Loretto, R Patchett, C Rutz (2024) Access to human mobility data is essential to building a sustainable future. *Cell Reports Sustainability*, 1-4.
DOI: <https://doi.org/10.1016/j.crsus.2024.100077>
10. D Ellis-Soto, **RY Oliver***, V Brum-Bastos, U Demšar, BR Jesmer, JA Long, F Cagnacci, F Ossi, N Queiroz, M Hindell, R Kays, MC Loretto, T Mueller, R Patchett, DW Sims, MA Tucker, Y Ropert-Coudert, C Rutz, W Jetz (2023) A vision for incorporating human mobility in the study of human-wildlife interactions. *Nature Ecology & Evolution*, 1-11.
DOI: <https://doi.org/10.1038/s41559-023-02125-6>
11. **RY Oliver**, F Iannarilli, J Ahumada, E Fegraus, N Flores, R Kays, A Ranipeta, MS Rogan, YV Sica, W Jetz (2023) Camera trapping expands the view into global biodiversity and its change. *Philosophical Transactions of the Royal Society B*, 378(1881), 20220232.
DOI: [10.1098/rstb.2022.0232](https://doi.org/10.1098/rstb.2022.0232)
12. W Jetz, G Tertitski, R Kays, U Mueller, M Wikelski, and supporting authors ... **RY Oliver** ... (2022) Biological earth observation with animal sensors. *Trends in Ecology & Evolution*, 37(4), 293-298.
DOI: <https://doi.org/10.1016/j.tree.2021.11.011>
13. DM Thomson, AK McEachern, EL Schultz, K Niessen, D Wilken, K Chess, LF Cole, **RY Oliver**, JD Phillips, A Tucker. (2022) Diverse native island flora shows rapid recovery after exotic herbivore removal on Santa Rosa Island, California. *Biological Invasions*, 24(6), 1635-1649.
DOI: <https://doi.org/10.1007/s10530-022-02735-4>
14. **RY Oliver**, C Meyer, A Ranipeta, K Winner, W Jetz (2021) Global and national trends, gaps, and opportunities in documenting and monitoring species distributions. *PLoS Biology*, 19(8), e3001336.
DOI: <https://doi.org/10.1371/journal.pbio.3001336>

15. SC Davidson, G Bohrer, E Gurarie, J Jennewein, S LaPoint, PJ Mahoney, NT Boelman, J Eitel, LR Prugh, L Vierling, E Grier, AH Meddens, **RY Oliver**, R Kays, M Wikelski, ..., M Hebblewhite. (2020) Ecological insights from three decades of animal movement tracking across a changing Arctic. *Science*, 370(6517), 712-715.
DOI: 10.1126/science.abb7080
16. **RY Oliver**, PJ Mahoney, E Gurarie, N Krikun, BC Weeks, M Hebblewhite, G Liston, NT Boelman (2020) Behavioral responses to spring snow conditions contribute to long-term shift in migration phenology in American robins. *Environmental Research Letters*, 15(4), 045003.
DOI: <https://doi.org/10.1088/1748-9326/ab71a0>
Selected press coverage: [Newsweek](#), [InsideClimate News](#)
17. J Ahumada, E Fegraus, T Birch, N Flores, R Kays, Ti O'Brien, J Palmer, S Schuttler, J Zhao, W Jetz, M Kinnaird, S Kulkarni, A Lyet, D Thau, M Duong, **RY Oliver**, A Dancer. (2020) Wildlife Insights: A platform to maximize the potential of camera trap and other passive sensor wildlife data for the planet. *Environmental Conservation*, 47(1), 1-6.
DOI: <https://doi.org/10.1017/S0376892919000298>
18. **RY Oliver**, DPW Ellis, HE Chmura, JS Krasue, JH Pérez, SK Sweet, L Gough, JC Wingfield, NT Boelman (2018) Eavesdropping on the Arctic: Automated bioacoustics reveal dynamics in songbird breeding phenology. *Science Advances*, 4(6), eaaq1084.
DOI: <https://doi.org/10.1126/sciadv.aaq1084>
Selected press coverage: [Mongabay](#), [Voice of America](#), [Yale Climate Connections](#)
19. B Taylor, AE Patterson, M Ajayi, R Arkebauer, K Bao, N Bray, RM Elliott, PPG Gauthier, JGersony, R Gibson, M Guerin, S Lavenhar, C Leland, L Lemordant, W Liao, J Melillo, **RY Oliver**, CM Prager, W Schuster, NB Schwartz, C Shen, K Pavlis Terlizzi, and KL Griffin (2016) Growth and physiology of a dominant understory shrub, *Hamamelis virginiana*, following canopy disturbance in a temperate hardwood forest. *Canadian Journal of Forest Research*, 47(2), 193-201.
DOI: <https://doi.org/10.1139/cjfr-2016-0208>
20. TS Magney, JUH Eitel, KL Griffin, NT Boelman, HE Greaves, CM Prager, BA Logan, G Zheng, L Ma, EA Fortin, **RY Oliver**, LA Vierling (2016) LiDAR canopy radiation model reveals patterns of photosynthetic partitioning in an Arctic shrub. *Agricultural and Forest Meteorology*, 221, 78-93.
DOI: <http://dx.doi.org/10.1016/j.agrformet.2016.02.007>.

Awards and Grants

UCSB Faculty Travel Grant Movement Ecology of Animals Gordon Research Conference, \$1500, 2023

The Nature Conservancy, Point Conception Institute

(2 years: 2023 - 2025, \$54K)

Sharing space: Dynamic human-wildlife interactions in California's protected areas

PI: Ruth Oliver

National Science Foundation, Polar Programs & Arctic Social Sciences

(5 years: 2018 – 2023, approx. \$3 million) *Not receiving funding*

Collaborative Research: Navigating the New Arctic (NNA): Soundscape ecology to assess environmental and anthropogenic controls on wildlife behavior

PIs: Natale Boelman (lead), Todd Brinkman, Michael Mandel, Glen Liston, Adele Reinking

Note: contributed to conception, design, and writing, but unable to serve as Co-I as a graduate student

Ruth Oliver

National Science Foundation Graduate Research Fellowship, approx. \$140K, 2015-2018
Outstanding Student Paper Award, American Geophysical Union Fall Meeting, 2017
Columbia Climate Center Research Grant, Earth Institute, Columbia University, \$4K, 2017
Dean's Fellowship, Columbia University, 2013-2014

Teaching Experience

University of California Santa Barbara:

Instructor Essential Math for Environmental Data Science, EDS 212 (Summer 2024)
Instructor Scientific Programming Essentials, EDS 221 (Summer 2024)
Instructor Geospatial Analysis and Remote Sensing, EDS 223 (Fall 2022 -2024)
Instructor Masters in Environmental Data Science Capstone Course, EDS 411B (Spring 2023)
Advisor Masters in Environmental Science & Management Group Project (Spring 2024- Spring 2025)
Advisor Masters in Environmental Data Science Capstone Project (Winter & Spring 2024)

Elsewhere:

Invited Instructor Contemporary Issues in Society and Natural Resources: Natural and Social Migrations, University of Idaho, Spring 2021
Invited Instructor Ecology & Evolutionary Biology undergraduate summer seminar, Yale University, Summer 2020
Co-Instructor Concepts and Methods in Global Biodiversity Change Research in the Age of Big Data, EEB 713, Yale University, Spring 2019
Teaching Assistant Introduction to Atmospheric Science, EESC 4008, Columbia University, Fall 2017
Teaching Assistant Earth's Environmental Systems: The Life System, EESC 2300, Columbia University, Spring 2015 & 2016

Presentations

Note: only lists presentations as presenting author

University of Michigan Biodiversity Data Science Symposium *Missing the movement: Gaps and opportunities in understanding wildlife responses in the Anthropocene*, Invited Oral Presentation, Ann Arbor, MI, 3/2024
International Bio-Logging Society Science Symposium *Interacting effects of human mobility and landscape modification on wildlife behavior*, Oral Presentation, Tokyo, Japan, 3/2024
Claremont McKenna College *Missing the movement: Gaps and opportunities in understanding wildlife responses in the Anthropocene*, Invited Oral Presentation, Los Angeles, CA, 2/2024
American Geophysical Union Fall Meeting *Linking data sources to understand biodiversity at scale*, Oral Presentation, San Francisco, CA, 12/2023
Ecological Society of America Annual Meeting *Linking data sources to understand biodiversity at scale*, Invited Oral Presentation, Portland OR, 8/2023
Ecological Society of America Annual Meeting *Human modification and mobility alter animals' use of space and environment*, Oral Presentation, Portland OR, 8/2023
Royal Society B Publishing *Camera trapping expands the view into biodiversity and its change*. Invited Oral Presentation, Online, 7/2023
Movement Ecology of Animals Gordon Research Conference *COVID-19 pandemic reveals the consequences of the dynamic human footprint*, Poster Presentation, Lucca, Italy, 5/2023
WILDLABS *Using tags and traps to provide a new view of our impact on wildlife*, Invited Oral Presentation, online, 4/2023

American Geophysical Union Fall Meeting *Complex human-wildlife interactions: Idiosyncratic responses of mammals and birds to the COVID-19 pandemic*, Oral Presentation, Chicago IL, 12/2022

Internet of Animals Symposium *Cars and trucks and things that go: Understanding movement in a chaotic world*, Invited Oral Presentation, New Haven CT, 10/2022

International Biogeographical Society *Camera trapping as an expanded view into global biodiversity and its change*, Oral Presentation, Vancouver BC, 6/2022

American Geophysical Union Fall Meeting *Biodiversity across scales: From fine-scale understanding of animal movements to global-scale assessment of data coverage*, Oral Presentation, New Orleans LA, 12/2021

Max Planck-Yale Center Mini-Conference *A bird's eye view of migration: What new technologies can tell us about old questions in avian phenology*, Oral Presentation, 4/2021

American Geophysical Union Fall Meeting *National trends in closing spatiotemporal biodiversity knowledge gaps via complementary data types*, Oral Presentation, Virtual, 12/2020

Ecological Society of America Annual Meeting *National trends in closing spatiotemporal biodiversity knowledge gaps via complementary data types*, Oral Presentation, Virtual, 8/2020

GEO BON Open Science Conference *National trends in closing spatiotemporal biodiversity knowledge gaps via complementary data types*, Oral Presentation, Virtual, 7/2020

American Geophysical Union Fall Meeting *Global and national trends in closing spatial biodiversity knowledge gaps*, Poster Presentation, San Francisco CA, 12/2019

iDigBio Integrated Digitized Biocollections 3rd Annual Digital Data Conference *Synonyms: Can we find durable solutions to name-based biodiversity data?*, Discussion, Yale University, 6/2019

American Geophysical Union Fall Meeting *Environmental and ecological drivers of American robin (*Turdus migratorius*) migration and habitat selection*, Oral Presentation, Washington DC, 12/2018

American Geophysical Union Fall Meeting *Eavesdropping on the Arctic: Automated bioacoustic reveal dynamics in songbird breeding phenology*, Oral Presentation, New Orleans LA, 12/2017

Professional Activities

Steering Committee Member COVID-19 Bio-Logging Initiative, 2020 - present

Committee Member Kravis Department of Integrated Sciences Alumni Advisory Council, 2024 - present

Special Feature Guest Editor *Methods in Ecology & Evolution, Conservation, Ecology and Artificial Intelligence: Advances and Symbiotic Solutions*, 2023 - present

Invited Speaker Ecological Society of America *The robots are friendly: The future of ecology and AI*, 8/2024

Symposium Co-Organizer North American Congress of Conservation Biology *Species distribution modeling for equitable and effective conservation*, 6/2024

Invited Participant National Center for Ecological Analysis and Synthesis working group *Biodiversity data science*, 5/2024

Invited Participant Point Conception Institute / National Center for Ecological Analysis and Synthesis working group *Marine subsidies to terrestrial consumers*, 10/2023 & 5/2024

Invited Panelist NSF Established Program to Stimulate Competitive Research reverse site visit, 4/2023

Session Co-Organizer *A roadmap towards comprehensive biodiversity monitoring at scale*, Ecological Society of America Annual Meeting, 8/2023

Invited Proposal Reviewer Biodiversa+ The European Biodiversity Partnership, 4/2023

Invited Participant Point Conception Institute Science Symposium, UCSB, 3/2023

Selected Participant Environmental Data Science Summit, NCEAS, 2/2023

Judge Outstanding Student Presentation Awards, American Geophysical Union Fall Meeting, 12/2022

Invited Participant Internet of Animals Symposium, Yale University, 11/2022

Session Co-Organizer *An individual eye on a global problem: Unique insights from animal tracking on biodiversity responses to climatic change*, Ecological Society of America Annual Meeting, 8/2022

Invited Participant Point Conception Institute Visioning Workshop, NCEAS, 3/2022

Judge PhD Student Symposium, Bren School of Environmental Science & Management, UCSB, 2/2022

Program Committee International Conference on Advances in Geographic Information Systems (ACM SIGSPATIAL) Workshop on Animal Movement Ecology and Human Mobility, 11/2021

Lead Biodiversity Movement Group, Center for Biodiversity and Global Change, 2020 - 2021

Organizer Max Planck-Yale Center for Biodiversity Movement and Global Change 2021 Mini-Conference, Virtual, 4/2021

Board Member Yale Center for Biodiversity and Global Change Seminar Committee, 2020 - present

Board Member Women in Science at Yale (WISAY), 2019 - 2021

Review Panelist Yale Institute for Biospheric Studies Small Grant Program, 2019 & 2020

Invited Participant Unlocking a New Era in Biodiversity Science, Keck Institute for Space Studies, Pasadena, CA, 10/2018 & 3/2019

Selected Participant AniMove: Animal Movement Analysis for Conservation, Max-Planck Institute for Ornithology, Lake Konstantanz, Germany, 9/2016

Panelist Natural Science and Data Science Interface Workshop, Data Science Institute, Columbia University, 9/2015

Board Member Lamont-Doherty Colloquium Steering Committee, Palisades, NY, 2014-2016

Invited Reviewer *PNAS, Science Advances, Nature Communications, Nature Ecology & Evolution, Global Change Biology, Ecology Letters, Proceedings of the Royal Society B, Biological Conservation, Frontiers in Ecology & Evolution, Conservation Biology, Methods in Ecology and Evolution, Ecological Applications, Ecological Informatics, Ecological Indicators, Remote Sensing, Journal of Fish and Wildlife Management, Animal Migration, Avian Conservation & Ecology, Emu Austral Ornithology*

Mentorship

PhD Committee Member

Wenxing Yang Geography Dept., UCSB (2024-present)

Alicia Caughman Bren School, UCSB (2023 - present)

Mukta Kelkar Bren School, UCSB (2023 - present)

Annette Hilton Bren School, UCSB (2023 - 2024)

Yifei Liu Geography Dept., UCSB (2022 - present)

Masters Committee Member

Eric Fairbanks Dept. of Ecology, Evolution, & Marine Biology, UCSB (2023 - present)

Graduate Mentorship

Diego Ellis-Soto Yale University Dept. of Ecology & Evolutionary Biology, mentorship on dissertation research (2019 - 2022)

Richard Li Yale University Dept. of Ecology & Evolutionary Biology, mentorship on dissertation research (2019 - 2022)

Kristy Ferraro Yale University School of Environment, Women in Science at Yale mentoring program, monthly meetings (2019 – 2022)

Alyssa Enny Yale University Dept. of Anthropology, Women in Science at Yale mentoring program, monthly meetings (2020 – 2022)

Ketty Munyenye Yale University Dept. of Ecology & Evolutionary Biology, Women in Science at Yale mentoring program, monthly meetings (2020 – 2021)

Emily Briggs Yale University School of Environment, Women in Science at Yale mentoring program, monthly meetings (2019 – 2020)

Undergraduate Mentorship

Vikesh Dheeriya Bren Environmental Fellows Leadership Program (2024 - present)

Marian Walker Bren Environmental Fellows Leadership Program (2023 - present)

Evan Parker Yale University Dept. of Ecology & Evolutionary Biology, mentorship on senior thesis research and subsequent publication (2021 - 2024)

Elizabeth Fortin Barnard College, assisted with senior thesis (2014 – 2015)

Outreach and Service

Interviewee Sunny Hills High School publication, *The Accolade*, 2/2024

Blog post [Environmental Data Science Summit](#), 3/2023

Guest Speaker Academic Job Search Series, Office of Postdoctoral Affairs, Yale University 10/2022

Media coverage [Washington Post](#), 10/21

Guest Speaker Guest Scientist Series, 7th grade classroom, Los Angeles, CA, 5/2021

Organizer Panel on the Graduate Experience, Women in Science at Yale, 12/2020

Organizer & Panelist (Almost) 50 Ways to Fight Bias, Center for Biodiversity and Global Change, Yale University, 6/2020

Organizer & Panelist Applying to Graduate School Panel, Women in Science at Yale, 5/2020

Guest Speaker Keepin' Sustainability Alive Inside, NYC Dept. of Education, 5/2020

Volunteer Girls' Science Investigations, Yale University, 2/2019

Guest Speaker RELATE: Mentorship Day, GOALS for Girls, Intrepid Sea, Air, & Space Museum, 3/2017 & 3/2018

Guest Speaker Columbia Open Labs Science Café, Columbia University, 12/2017

Guest Speaker Transparency Series on Climate Change, Brown Institute for Media Innovation, Columbia University Journalism School, 3/2017 & 12/2017

Guest Speaker Girls' Science Day, Columbia University, 11/2013

Field Blog NASA Earth Observatory, Spring 2016 & 2017

<https://earthobservatory.nasa.gov/blogs/fromthefield/2016/04/18/welcome-to-alberta-canada>

Pedagogical and DEI Training

Equity-based Mentoring Workshop Series, Equity in Graduate Education Consortium, Fall 2022 & Spring 2023

Software Carpentry Instructor Training, The Carpentries, Fall 2022

Fundamentals of Teaching Series: Contemporary Controversies in Pedagogy, Yale University Poorvu Center for Teaching and Learning, Fall 2020

Unconscious Bias, Yale University Office of Diversity and Inclusion, Fall 2019

Creating an Inclusive Workplace for Transgender and Non-Binary Colleagues, Yale University Office of Diversity and Inclusion, Fall 2019

Difficult Conversations in the Classroom (Gender), Advanced Teaching Workshop, Yale University Poorvu Center for Teaching and Learning, Spring 2019