

## Christian Lee John, Ph.D.

Postdoctoral scholar  
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### Education and postdoctoral training

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- University of California, Santa Barbara – Postdoctoral scholar (Oct 2022 – Present)  
Research foci: Climate and land use change, land-sea connections, and tropical ecology  
Supervisor: Deron Burkepile; UCSB Marine Science Institute and Moorea Coral Reef LTER
- University of California, Davis – Ph.D. Ecology (2022)  
Thesis: *Multi-scale spatial ecology of an endangered alpine migrant, Sierra Nevada bighorn sheep*  
Supervisor: Eric Post; UCD Department of Wildlife, Fish, and Cons. Biol.
- Pennsylvania State University – M.Sc. Ecology (2016)  
Thesis: *Against the spring wave: ungulate migration phenology in a changing Arctic*  
Supervisor: Eric Post; PSU Department of Biology and Polar Center
- Pennsylvania State University – B.S. Biology (2013)

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### Peer-Reviewed Publications

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18. Post, E., Bøving P.S., Higgins, R.C., **John, C.**, Post, M., O'Connor, B., Reimer, J., Williamson, N., and Kerby, J.T. 2025. A framework for reproductive outcomes of phenological match-mismatch in migratory breeders tested on a declining species, caribou. *PNAS Nexus*. [[article](#)]
17. Detmer, A.R., Miller, S.D., Ring, K., **John, C.**, Briggs, C., Rassweiler, A., and Moeller, H. 2025. A Busse balloon in the lagoon: herbivore behavior generates spatial patterns in coral reef ecosystems. *Ecology Letters*. 28(3) 1-13. [[article](#)]
16. **John, C.**, Avgar, T., Rittger, K., Smith, J.A., Stephenson, L.W., Stephenson, T.R., and Post, E. 2024. Pursuit and escape drive fine-scale movement variation during migration in a temperate alpine ungulate. *Scientific Reports*. 14:15068. [[article](#)]
15. Post, E., Higgins, R.C., Bøving P.S., **John, C.**, Post, M., and Kerby, J.T. 2024. Large herbivores link plant phenology and abundance in arctic tundra. *PNAS Nexus*. [[article](#)]
14. **John, C.**, Kerby, J., Stephenson, T.R., and Post, E. 2023. Fine-scale landscape phenology revealed through time-lapse imagery: implications for conservation and management of an endangered migratory herbivore. *Remote Sensing in Ecology and Conservation*. 9(5) 628-640. [[article](#)]
13. Post, E., and 11 others (incl. **John, C.**). 2023. Large herbivore diversity slows sea ice-associated decline in arctic tundra diversity. *Science*. 380:6651. [[article](#)]
12. **John, C.** and Post, E. 2022. Seasonality, niche management, and vertical migration in landscapes of relief. *Ecography*. 2022(6):E05774. [[article](#)]
11. **John, C.** and Post, E. 2022. Projected distribution of Nearctic Bovidae signals the potential for reduced overlap with protected area. *Ecology and Evolution*. 12(8):e9189. [[article](#)]

10. Strong, D. and **John, C.** 2022. Moisture and Distribution of a Keratophagous Moth, *Tinea occidentella*. *Ecological Entomology*. 47(5) 822-830. [[abstract](#); contact for article]
9. Berger, D., German, D.W., **John, C.**, Hart, R., Stephenson, T.R., and Avgar, T. 2022. Seeing is be-Leaving: Perception informs migratory decisions in Sierra Nevada Bighorn Sheep (*Ovis canadensis sierrae*). *Frontiers in Ecology and Evolution*. 10:742275. [[article](#)]
8. Vuorinen, K. and 41 others (incl. **John, C.**) 2022. Growth rings show limited evidence for ungulates' potential to suppress shrubs across the Arctic. *Environmental Research Letters*. 17(3) 034013. [[article](#)]
7. **John, C.**, Shilling, S., and Post, E. 2021. drpToolkit: An automated workflow for aligning and analyzing vegetation and ground surface time series imagery. *Methods in Ecology and Evolution*. 13(1) 54-59. [[article](#)]
6. Eikelenboom, M., Higgins, R.C., **John, C.**, Kerby, J., Forchhammer, M.C., and Post, E. 2021. Contrasting dynamical responses of sympatric caribou and muskoxen to winter weather and earlier spring green-up in the Arctic. *Food Webs*. 27 e00196. [[abstract](#); contact for article]
5. Myers-Smith, I.H., Kerby, J.T., Phoenix, G.K., Bjerke, J.W., Epstein, H.E., Assmann, J.A., **John, C.**, et al. 2020. Complexity revealed in the greening of the Arctic. *Nature Climate Change*. 10(2) 106-117. [[article](#)]
4. **John, C.** Miller, D., and Post, E. 2020. Regional variation in green-up timing along a caribou migratory corridor: Spatial associations with snowmelt and temperature. *Arctic, Antarctic, and Alpine Research*. 52(1) 416-423. [[article](#)]
3. Post, E., Beyen, E., Bøving, P., Higgins, R.C., **John, C.**, Kerby, J., Pedersen, C., and Watts, D. 2019. Unusual late July observation of a fledgling Lapland longspur in low arctic Greenland following the late spring of 2018. *Arctic Science*. 5(3) 161-166. [[article](#)]
2. Blazanin, N., Son, J., Craig-Lucas, A., **John, C.**, Breech, K., Son, J., Podolsky, M., and Glick, A.B. 2017. ER Stress and Distinct Outputs of the IRE1 $\alpha$  RNase Control Proliferation and Senescence in Response to Oncogenic Ras. *Proceedings of the National Academy of Sciences*. 114(37) 9900-9905. [[article](#)]
1. Van den Bogaard, E.H., Podolsky, M.A., Smits, J.P., Cui, X., **John, C.**, et al. 2015. Genetic and Pharmacological Analysis Identifies a Physiological Role for the AHR in Epidermal Differentiation. *Journal of Investigative Dermatology*. 135(5) 1320-28. [[article](#)]

#### *Under review*

- John, C.** and 28 others. Terrigenous inputs link nutrients regimes to microbial communities in a tropical lagoon. Under review at *Limnology and Oceanography*.
- Neumann, K., **John, C.**, Atger, T., Punu, T., Hollarsmith, J.A., and Burkepile, D.E. Land use shapes riverine nutrient and sediment concentrations on Moorea, French Polynesia. *PLOS One*.
- Edmunds, P., **John, C.**, Leichter, J., Moritz, C., Scafidi, K., Speare, K., Srednick, G., and Wyatt, A., Long-term community dynamics are heterogeneous among habitats on an Indo-Pacific coral reef. *Ecosphere*.
- Mejía-Ramón A.G., Barba, L., **John, C.**, Johnson, N.E., Blancas, J., Ortiz, A., Froese, T., Reinterpreting Rain and the Ethnoecology of Ritual Society in Ancient Teotihuacan. *PLOS One*.

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## Other Publications

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### *Book chapters*

**John, C.** In press, 2025. North American tundras: Imperiled landscapes at a continent's latitudinal and altitudinal extremes. In *Global Biome Conservation and Global Warming: Impacts on Ecology and Biodiversity*. G. L. Demolin-Leite Sr., P. Török, and J. C. B. Barrionuevo Sr. Editors. Elsevier. [\[book\]](#)

### *Theses and dissertations*

**John, C.** 2022. Multi-scale spatial ecology of an endangered alpine migrant, Sierra Nevada bighorn sheep. Ph.D. Dissertation, University of California, Davis. [\[dissertation\]](#)

**John, C.** 2016. Against the Spring Wave: Ungulate Migration Phenology in a Changing Arctic. M.Sc. Thesis, Penn State University. [\[thesis\]](#)

### *Technical reports*

Mejía-Ramón, A.G. and **John, C.** 2017. Informe Preliminar sobre las Actividades de Teledetección Aérea en la Zona Monumental Arqueológica de Teotihuacan, Verano 2017. Technical report submitted to the Consejo de Arqueología, October 2017, Instituto Nacional de Antropología e Historia, México D.F.

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## Software

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**John, C.** 2023. phenomap: Projecting satellite-derived phenology in space. R package version 2.0.1. <<https://CRAN.R-project.org/package=phenomap>>.

**John, C.** Shilling, F., and Post, E. 2021. drpToolkit: Digital repeat photography imagery management and analysis. Python package version 1.0.0. <<https://github.com/JepsonNomad/drpToolkit>>.

**John, C.** Bolas, E., and Laca, E. 2020. ggeAdmit: Streamlining the holistic review process. R package version 0.0.1. <<https://github.com/ggeDCAA/ggeAdmit>>.

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## Presentations

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Listed in order of recency.

IO = Invited oral presentation; CO = Contributed oral presentation;

CL = Contributed lightning talk; P = Poster presentation

University of California system-wide GIS Week [CO] Nov 2024

**John, C.** *Nearshore nutrient regimes link land use to tropical lagoon microbial communities*

UC Davis Department of Wildlife, Fish, and Conservation Biology [IO] Oct 2024

**John, C.** *Ridge-to-reef connections and community response to seasonal stress in a tropical lagoon system*

Ecological Society of America Summer 2023 Meeting [CO] Aug 2024

**John, C.,** Speare, K., Adam, T., Donovan, M., and Burkepile, D. *Consistent thermal regimes drive repeated spatial patterning in stress-induced mortality of foundation species*

Sierra Nevada Science Symposium [CL] Mar 2024

**John, C.,** Stephenson, T., and Post, E. *Time-lapse cameras reveal fine-scale patterns of plant phenology in the eastern Sierra*

Ecological Society of America Summer 2023 Meeting [CO] Aug 2023

**John, C.,** Neumann, K., Adam, T., Donovan, M., and Burkepile, D. *Land use change, nutrient pollution, and sedimentation seasonality in a South Pacific coral reef island system*

UC Santa Barbara Department of Ecology, Evolution, and Marine Biology [IO]	Oct 2022
<b>John, C.</b> <i>Seasonality and predictability of community response to anthropogenic change</i>	
Aarhus Universitet Department of Biology [IO]	Mar 2022
<b>John, C.</b> <i>Linking food on the ground to a satellite pixel: Phenological insights from a time-lapse camera network</i>	
American Geophysical Union Fall 2021 Meeting [P]	Dec 2021
<b>John, C.,</b> Stephenson, T.R., and Post, E. <i>Detecting Plant Phenological Response to Snowmelt on "Barren" Alpine Landscapes</i>	
American Geophysical Union Fall 2020 Meeting [P]	Dec 2020
<b>John, C.,</b> Stephenson, T., and Post, E. <i>Associations among topography, snowmelt, and plant green-up phenology, revealed through a time-lapse camera network</i>	
UC Davis Polar Forum Mini Symposium [CO]	Nov 2019
<b>John, C.</b> and Post, E. <i>Spatial disparity in drivers of landscape phenology regulates regional green-up dynamics</i>	
American Geophysical Union Fall 2018 Meeting [CO]	Dec 2018
<b>John, C.,</b> Stephenson, T., and Post, E. <i>Long-term projections for migration phenology in Sierra Nevada bighorn sheep</i>	
Ecological Society of America Summer 2017 Meeting [CO]	Aug 2017
<b>John, C.</b> and Post, E. <i>Arctic green wave dynamicity and its implications for migration phenology</i>	
American Geophysical Union Fall 2016 Meeting [CO]	Dec 2016
<b>John, C.</b> and Post, E. <i>Dissecting drivers of Arctic plant phenology across scales in time and space</i>	
GIS Day at Penn State, State College, PA [CL]	Nov 2015
<b>John, C.</b> <i>Using UAV remote sensing in Arctic ecological research</i>	
The Polar Center at Penn State, State College, PA [CO]	Feb 2015
<b>John, C.</b> and Post, E. <i>Climate change, the green wave, and Arctic ungulate migratory timing</i>	

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## Teaching

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### Teaching

Graduate student co-instructor	
R-DAVIS (UC Davis): Intro to Data Analysis and VISualization; lab	Fall 2020
Teaching Assistant	
R-DAVIS (UC Davis): Intro to Data Analysis and VISualization; lab	Winter 2019, 2020
ENT 117 (UC Davis): Longevity; lecture	Summer 2018
PLS 147 (UC Davis): California Plant Communities; lecture	Spring 2018
WFC 198 (UC Davis): Climate Change Ecology; discussion	Winter 2018
BIOL 415 (Penn State): Ecotoxicology; lecture	Spring 2014, 2017
BIOL 220 (Penn State): Population and Community Biology; lab	Spring 2015, 2017
BIOL 110 (Penn State): Basic Concepts and Biodiversity; lab	Summer, Fall 2013

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## Peer Reviews

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Peer reviews provided for manuscripts in the following publications:  
*Animal Migration; Arctic, Antarctic, and Alpine Research; Biological Conservation;*

*Canadian Journal of Zoology; Ecography; Ecology; Ecology and Evolution; Ecology Letters; Global Change Biology; Landscape Ecology; Remote Sensing in Ecology and Conservation; Scientific Data; Scientific Reports*

Ad-hoc review provided for research proposal in:  
NSF Arctic System Science (ARCSS) Program 2024

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### Other Professional Service

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#### Guest Lecturer

WFC 168 (UC Davis): <i>Snow, plant, and wild sheep phenol. in CA mtns</i>	Feb 2022
WFC 168 (UC Davis): <i>The future of phenology for Sierra bighorn</i>	Feb 2021
WFC 010 (UC Davis): <i>Movement ecology</i>	Mar 2019
WFC 198 (UC Davis): <i>Resources, reproduction, and trophic mismatch</i>	Feb 2019
WFC 010 (UC Davis): <i>Animal migration</i>	Nov 2017, Feb 2020
WFS 585 (Penn State): <i>Phenoscape: Analyzing the green wave in R</i>	Mar 2017
GEOG 455 (Penn State): <i>Remote sensing in migration ecology</i>	Apr 2016

Mapping Bonanza: Organizer and instructor Spring 2024

Developed a 4-part workshop miniseries to introduce spatial data wrangling, analysis, and visualization for graduate students and postdocs (UC Santa Barbara).

Statistical Support Group co-coordinator Spring 2022

Providing advice and leading discussion about experimental design, statistics, and related issues in an informal weekly graduate student meet-up (UC Davis).

Admissions Planning Committee student representative Fall 2021 – 2022

Implementing holistic review for graduate admissions in the UC Davis Graduate Group in Ecology.

Admissions and Awards Subcommittee student member Spring 2019 – 2022

Analyses of utility and effects of holistic review on graduate admissions; developed admissions reviewer assignment software; organized online-format admissions and reviewer training for remote learning during COVID-19 pandemic. Formally, graduate student researcher in Fall 2019.

Open Lab Meeting co-coordinator Fall 2020 – 2022

Graduate student-led “lab meeting” of weekly seminars within the graduate group community. No professors, relaxed atmosphere for candid presentation feedback from peers.

Davis R Users’ Group co-coordinator Fall 2020 – 2022

Weekly working group of R coding enthusiasts across undergraduate, graduate, and post-doc levels of training. Troubleshooting, workshops, and R-related discussion.

#### Other university speaking forums

UC Davis R Users’ Group working group  
#MapTimeDavis mapping workshop [\[link\]](#)