

Zachary L. Steel

✉ zlsteel@berkeley.edu 🌐 zack-steel.com | Updated: June 16, 2020

EDUCATION

| | |
|--|-----------|
| University of California, Davis, Ph.D. Ecology | 2014–2018 |
| University of California, Davis, M.S. Ecology | 2008–2011 |
| Whitman College, B.A. Biology | 2002–2006 |

EMPLOYMENT

| | |
|---|--------------|
| <i>University of California, Berkeley:</i> | |
| Post-doctoral Researcher | 2019–Present |
| <i>University of California, Davis:</i> | |
| Graduate Student Researcher | 2014–2018 |
| Jr. Specialist Researcher | 2012–2014 |
| Fire Science Consortium Technical Coordinator | 2012–2013 |
| <i>US Fulbright Program, Santiago, Chile:</i> | |
| Research Fellow | 2011 |
| <i>University of California, Davis:</i> | |
| Graduate Student Researcher | 2008–2011 |
| <i>University of California, Santa Cruz:</i> | |
| Assistant Biologist | 2007–2008 |
| <i>PRBO Conservation Sciences:</i> | |
| Biology Technician | 2007–2008 |

PUBLICATIONS

Journal Articles

Steel, Z. L., B. M. Collins, D. B. Sapsis, S. L. Stephens. *In Review*. “Quantifying pyrodiversity and its drivers”. *Ecology Letters*.

Steel, Z. L., M.J. Goodwin, M.D. Meyer, G.A. Fricker, H.S.J. Zald, M.D. Hurteau, and M.P. North. *In Review*. “What doesn’t kill you makes you stronger – or it might kill you during the next drought”. *Ecosphere*.

Steel, Z. L., B. Campos, W. Frick, R. Burnett, and H. D. Safford. 2019. “The effects of wildfire severity and pyrodiversity on bat occupancy and diversity in fire-suppressed forests”. *Scientific Reports* 9, 16300. [doi:10.1038/s41598-019-52875-2](https://doi.org/10.1038/s41598-019-52875-2)

Wilkins, L. G. E., K. R. Matthew, **Z. L. Steel**, S. C. Nussle, and S. M. Carlson. 2019. “Population dynamics of *Rana sierrae* at Dusy Basin: Influence of non-native predators, drought, and restoration potential”. *Ecosphere* 10(11):e02951.

Steel, Z. L., M. Koontz, and H. Safford. 2018. “The changing landscape of wildfire: Burn pattern trends and implications for California’s yellow pine and mixed conifer forests”. *Landscape Ecology* 33(7), 1159–1176.

- Steel, Z. L.,** A. E. Steel, J. Williams, J. H. Viers, P. Marquet, and O. Barbosa. 2017. "Patterns of bird diversity and habitat use in mixed vineyard-matorral landscapes of Central Chile". *Ecological Indicators* 73:345-357.
- Grof-Tisza, P., **Z. L. Steel**, E. Cole, M. Holyoak, and R. Karban. 2017. "Testing predictions of movement behavior in a hilltopping moth". *Animal Behavioral* 133:161-168.
- Grof-Tisza, P., **Z. L. Steel**, and R. Karban. 2017. "The spatial distribution and oviposition preference of the Ranchman's tiger moth, *Platyprepia virginalis* (Lepidoptera: Arctiidae)". *Journal of the Lepidopterists' Society* 71(1):16-19.
- Steel, Z. L.,** H. D. Safford, and J. H. Viers. 2015. "The fire frequency-severity relationship and the legacy of fire suppression in California forests". *Ecosphere* 6(1):1-23.
- Schwartz, M.W., L. B. Smith, and **Z. L. Steel**. 2013. "Conservation investment for rare plants in urban environments". *PLOS ONE* 8(12):e83809.
- Siegel, R. B, R. L. Wilkerson, J. F. Saracco, and **Z. L. Steel**. 2011. "Elevational distribution of common bird species on the Sierra Nevada's west slope". *Western Birds* 42:2-26.

Technical Reports and Software

- Steel, Z. L.,** M. Meyer, A. Wuenschel, S. Ostojka, and M. North. 2020. "Climate-wise reforestation toolkit". Rshiny web application prepared for the US Forest Service, and the California Climate Hub. [Available online](#)
- Steel, Z. L.,** B. R. Campos, and H. D. Safford. 2018. "Bat occupancy in Sierra Nevada wildfire areas and implications for post-fire management". Prepared for US Forest Service, Region 5.
- Campos, B. R., **Z. L. Steel**. FIRE-BAT spatial predictive tool. ArcGIS toolbox prepared for US Forest Service, Region 5.
- Campos, B. R., R. D. Burnett, and **Z. L. Steel**. 2017. "Bird and bat inventories in the Storrie and Chips fire areas 2015-2016: Final report to the Lassen National Forest". Point Blue Conservation Science, Petaluma, CA. Point Blue Contribution No. 2142.
- Steel, Z. L.** and H. D. Safford. 2017. "Acoustic inventory and monitoring of bat species in the Power Fire burn area – 2014, 2015, and 2016 field season". Prepared for Eldorado National Forest, California, USDA Region 5.
- Fogg, A. M, **Z. L. Steel** and R. D. Burnett. 2017. "Avian Monitoring in Freds and Power fires: Final Report". Point Blue Conservation Science, Petaluma, CA. Point Blue Contribution No. 2138.
- Schwartz, M. W., et al. 2013. "Sensitive Animals - Appendix 15 to SEKI Natural Resources Condition Assessment". Natural Resource Report NPS/SEKI/NRCA—2013/665. National Park Service. Fort Collins, Colorado. Assessments within:
- Steel, Z. L.,** E. Reddy and R. Green. The American Pika - *Ochotona princeps*
 - Steel, Z. L.,** J. Shields. Sierra Nevada Bighorn Sheep - *Ovis canadensis sierrae*
 - Copeland, S., K. Dybala, **Z. L. Steel**. California Condor - *Gymnogyps californianus*
 - Steel, Z. L.,** Sierra Nevada Chipmunks - *Tamias spp.*
- Steel, Z. L.,** M. L. Bond, R. B. Siegel, and P. Pyle. 2012. "Avifauna of Sierra Nevada Network parks: Assessing distribution, abundance, stressors, and conservation opportunities for 145 bird species". Natural Resource Report NPS/SIEN/NRR—2012/506. National Park Service, Fort Collins, Colorado.

TEACHING

Graduate Teaching:

Guest Lecturer – UCB, Fire Ecology Seminar

Spring 2020

| | |
|---|-------------------|
| Co-Instructor – UCD, Fire Ecology | Winter 2018 |
| Guest Lecturer – UCD, Ecogeomorphology | Springs 2014–2018 |
| Certificate of Completion – UCD Foundations of Teaching workshop series | Fall 2017 |
| Guest Lecturer – American River College, Experimental Design | Spring 2017 |
| Teaching Assistant – UCD, Trees and Forests; PLS 144 | Fall 2015 |
| Teaching Assistant – UCD, Trees and Forests; PLS 144 | Fall 2014 |

Mentoring:

| | |
|---|---------------------|
| Undergraduate Mentor – Student research experience | Spring 2019–Present |
| Undergraduate Mentor – Association for Women in Science Mentoring program | 2019 |
| High School Mentor – Student & Landowner Education Stewardship program | 2015–2016 |
| Undergraduate Mentor – Student research experience | Summer 2009 |

Outdoor Education:

| | |
|--|-------------------|
| Naturalist/Raft Guide – UCD, Outdoor & Watershed Sciences programs | 2013–2018 |
| Teacher/Scientist – Earthwatch citizen science programs | 2013 |
| Naturalist/Kayak Guide – San Juan Islands, WA | Summers 2006–2007 |

Undergraduate Teaching:

| | |
|---|-------------|
| Teaching Assistant – Whitman College, Genetics; BIO 205 | Fall 2005 |
| Teaching Assistant – Whitman College, Ecology; BIO 277 | Spring 2005 |

AWARDS

Research grants:

2020–22: *Implications of increasing the scale of managed wildfire on forest carbon stocks and pyrodiversity*. Funded by California Department of Forestry and Fire Protection (CALFIRE). \$422,000*

2017–18: *Ecological implications of wildfire and forest restoration on birds and bats (phase II)*. Funded by US Forest Service. \$122,000*

2014–17: *Ecological implications of wildfire and forest restoration on birds and bats (phase I)*. Funded by US Forest Service. \$127,000*

2011: *Quantifying avian habitat use and carbon stocks in Chilean vineyards*. Funded by US Fulbright Program. \$17,000

*Unofficial PI due to temporary position

Fellowships:

2014–18 (7 quarters): *Graduate Group of Ecology Fellowship*. Funded by UC Davis. \$79,000

2017: *Ecology Student Endowment*. Funded by UC Davis. \$1500

2010: *Graduate Group of Ecology Fellowship*. Funded by UC Davis. \$11,000

2002–06: *Walter Brattain Merit scholarship*. Funded by Whitman College. \$32,000

2001–02 (2 awards): *Governor's college scholarship*. Funded by State of California. \$2000

PRESENTATIONS

| | |
|---|------|
| The Wildlife Society Annual Conference | 2019 |
| <i>The Influence of Burn Severity and Pyrodiversity on Bat Communities in Sierra Nevada Forests</i> | |
| Mediterranean Forest Ecosystems International Conference (MedPine6) | 2018 |
| <i>Changing patterns of severe wildfire lead to bird diversity declines & community transitions in conifer forests of California, USA</i> | |
| Ecological Society of America Annual Meeting | 2018 |
| <i>Bat species occupancy varies across a disturbance gradient; implications for a future of extreme wildfire events</i> | |
| Instituto Politécnico Nacional, CIIDIR-Unidad Oaxaca, Mexico (Invited) | 2017 |
| <i>Murcielagos en un paisaje caracterizado por incendios: Impactos en diversidad y uso de habitat</i> | |
| Ecological Society of America Annual Meeting | 2017 |
| <i>The influence of spatial context and successional pathways on bird communities following high-severity wildfire</i> | |
| Northwest Science Conference (Invited) | 2017 |
| <i>The influence of burn severity on bat species occurrence in post-fire landscapes</i> | |
| Mediterranean Ecosystems Conference (MEDECOS) | 2017 |
| <i>Shifting patterns of California fire and forest landscapes in an era of global change</i> | |
| Natural Areas Conference | 2016 |
| <i>The Changing Landscape of California Fire: Trends in Burn Patterns and Post-Fire Forest Heterogeneity</i> | |
| Universidad Mayor, Santiago, Chile (Invited) | 2011 |
| <i>Mercados de carbono: una oportunidad potencial para biodiversidad en agroecosistemas</i> | |
| Buenos Aires Fulbright Regional Enhancement Seminar | 2011 |
| <i>Carbon Sequestration: Risk or tool for biodiversity?</i> | |
| Bay Area Conservation Biology Symposium | 2011 |
| <i>Assessing species vulnerability to climate change in the Willamette Valley Ecoregion</i> | |