

Michael J. Koontz

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Graduate Group in Ecology
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EDUCATION

- Ph.D., Ecology; University of California, Davis 2014 - 2019
Committee: Andrew Latimer, Malcolm North, Connie Millar (expected)
Dissertation: The effect of vegetation spatial structure on forest resilience to wildfire and bark beetle disturbance in the Sierra Nevada, California
- M.Sc., Ecology; Colorado State University 2012 - 2014
Committee: Ruth Hufbauer, Tom Hobbs, Brett Melbourne
Thesis: The eco-evolutionary consequences of multiple introductions for colonizing individuals
- B.Sc. with highest honors, Biology; University of Hawaii at Hilo 2007 - 2009
Concentration: Ecology, Evolution, and Conservation Biology

FELLOWSHIPS

- Plant Sciences Departmental Graduate Student Research Award (\$185,803) 2015 - 2019
UC Davis Graduate Group in Ecology Fellowship (\$58,172) 2014 - 2016
NSF Graduate Research Fellowship (\$132,000) 2013 - 2018

PUBLICATIONS

- Koontz, Michael J.**, Meagan F. Oldfather, Brett A. Melbourne, and Ruth A. Hufbauer. 2018. Parsing propagule pressure: Number, not size, of introductions drives colonization success in a novel environment. *Ecology and Evolution*. 8 (16): 8043-8054. <https://doi.org/10.1002/ece3.4226> 2018
- Steel, Zachary L., **Michael J. Koontz**, and Hugh D. 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. <https://doi.org/10.1007/s10980-018-0665-5> 2018
- Oldfather, Meagan F., Matthew N. Britton, Prahlad D. Papper, **Michael J. Koontz**, Michelle M. Halbur, Celeste Dodge, Alan L. Flint, Lorraine E. Flint, and David D. Ackerly. 2016. Effects of topoclimatic complexity on the composition of woody plant communities. *AoB Plants*. 8: plw049. <https://doi.org/10.1093/aobpla/plw049> 2016
- Hufbauer, Ruth A., Marianna Szücs, Emily Kasyon, Courtney Youngberg, **Michael J. Koontz**, Christopher Richards, Ty Tuff, and Brett A. Melbourne. 2015. Reply to Wootton and Pfister: The search for general context should include synthesis with laboratory model systems. *Proceedings of the National Academy of Sciences*. 112 (44): E5904. <https://doi.org/10.1073/pnas.1517210112> 2015
- Hufbauer, Ruth A., Marianna Szücs, Emily Kasyon, Courtney Youngberg, **Michael J. Koontz**, Christopher Richards, Ty Tuff, and Brett A. Melbourne. 2015. Three types of rescue can avert extinction in a changing environment. *Proceedings of the National Academy of Sciences*. 112 (33): 10557-10562. <https://doi.org/10.1073/pnas.1504732112> 2015
- Cole, Rebecca J., Creighton M. Litton, **Michael J. Koontz**, and Rhonda K. Loh. 2012. Vegetation recovery 16 years after feral pig removal from a wet Hawaiian forest. *Biotropica*. 44: 463-471. <https://doi.org/10.1111/j.1744-7429.2011.00841.x> 2012

FUNDED GRANTS

U.S. Forest Service Western Wildlands Environmental Threat Assessment Center	2018
<i>Project:</i> Using drones to link spatial features of forests and bark beetle-induced mortality at broad spatial scales (\$7,500)	
<i>Collaborators:</i> Malcolm P. North, Chris J. Fettig, Leif A. Mortenson, Andrew M. Latimer, and Connie I. Millar	
U.S. Forest Service Western Wildlands Environmental Threat Assessment Center	2017
<i>Project:</i> Assessing forest spatial structure and bark beetle spread using small, unmanned aerial systems (sUAS) (\$19,420)	
<i>Collaborators:</i> Malcolm P. North, Chris J. Fettig, Leif A. Mortenson, Andrew M. Latimer, and Connie I. Millar	

OPEN EDUCATIONAL RESOURCES

Peek, Ryan A. and Michael J. Koontz . 2018. R for Data Analysis and Visualization in Science (R-DAVIS) v1.0.0. GitHub. https://gge-ucd.github.io/R-DAVIS/	2018
Michonneau, Francois, <i>et al.</i> 2017. Data Carpentry R Ecology Lesson v2017.04.3. Zenodo. https://doi.org/10.5281/zenodo.569875	2017
Koontz, Michael J. and Ryan A. Peek. 2017. Data Carpentry Week: Introduction to R. v1.0.0. GitHub. https://mikoontz.github.io/data-carpentry-week/	2017

TEACHING EXPERIENCE

Lead or Co-lead Instructor

Data Carpentry: Geospatial Workshop	2018
A 2-day workshop teaching spatial data science skills in Davis, California	(upcoming)
ECL298 R for Data Analysis and Visualization in Science	2018
A quarter-long, 2-credit graduate course at the University of California, Davis teaching scientific computing skills (data/project management, version control, reproducible workflows using the programming language R) to 25+ ecologists	
Data Carpentry Week: Introduction to R	2017
A week-long workshop teaching scientific computing skills to 25+ learners as part of the Data Intensive Biology Summer Institute at the University of California, Davis	
ECOL592 Introduction to R	2014
A semester-long, 1-credit graduate course teaching data manipulation and visualization using R to 20+ grad students, professors, postdocs, undergraduates, and local professionals learners at Colorado State University	

Teaching assistant

Data Skills in R, Cornerstone Research	2016
PLS206 Applied Multivariate Modeling; University of California, Davis	2016
R Bootcamp; University of California, Davis	2015
LIFE320 Ecology, Colorado State University	2013
LIFE102 Biology Laboratory, Colorado State University	2012

Guest lecturer

“High quality plots using base R graphics” Davis R Users Group (D-RUG)	2015
“Invasion Biology” LIFE320 Ecology, Colorado State University	2013

Formal training

Educational psychology & instructional design, SoftwareCarpentry	2016
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AWARDS AND HONORS

Plant Sciences Graduate Student Travel Award (\$1,000)	2018
Nominated for Outstanding Graduate Student Teaching Award	2017
Plant Sciences Graduate Student Travel Award (\$1,000)	2016
College of Agriculture Ag Day Scholarship (\$1,000)	2014
Front Range Student Ecology Symposium 3rd Place Oral Presentation	2014
Colorado State Graduate Degree Program in Ecology Travel Award (\$500)	2014
Ynez Morey and Chuck Reagin Memorial Entomology Scholarship (\$1,000)	2013
Colorado State University Graduate Fellowship (\$1,500)	2012
CSU Programs for Research and Scholarly Excellence Fellowship (\$2,339)	2012
University of Hawaii at Hilo Outstanding Senior in Biology	2009
Hawaii Audubon Society Rose Shuster Taylor Scholarship (\$1,838)	2008
AmeriCorps Education Award (\$4,750)	2006

INVITED TALKS

Koontz, Michael J. , Malcolm P. North, Christopher J. Fettig, L. A. Mortenson, Constance I. Millar, Malcolm P. North. 2018-03-22. Using drones to link spatial structure of forests and insect outbreaks. University of California Cooperative Extension North Coast Forest Health Meeting. Eureka, CA.	2018
Koontz, Michael J. , Andrew M. Latimer, Christopher J. Fettig, L. A. Mortenson, Constance I. Millar, Malcolm P. North. 2017-11-15. Using drones to go beyond stand density: Spatial features of western pine beetle-attacked forests. California Forest Pest Council Annual Meeting. Davis, CA.	2017

CONTRIBUTED TALKS

Koontz, Michael J. , Andrew M. Latimer, L. A. Mortenson, Christopher J. Fettig, Constance I. Millar, and Malcolm P. North. 2018-09-20. The effect of spatial variability of forest structure on severity of a tree-killing insect. MtnClim Conference. Gothic, CO.	2018
Koontz, Michael J. , Andrew M. Latimer, Chhaya M. Werner, Stephen E. Fick, and Malcolm P. North. 2018-08-09. Greater variability in local vegetation structure increases forest resilience to wildfire. Ecological Society of America Annual Meeting. New Orleans, LA.	2018
Lee, Stephen P., Jan Ng, Ash T. Zemenick, Mikaela M. Provost, Carlos A. Ruvalcaba, Derek J. N. Young, Emilio Laca, Michael J. Koontz , Jessica Rudnick, and Elizabeth J. Sturdy. 2018-03-03. Evolution toward holistic review in the Ecology Graduate Program at University of California, Davis – Part I: Design and implementation of a system to evaluate applicants. 10th Annual Understanding Interventions Meeting. Baltimore, MD.	2018
Ng, Jan, Michael J. Koontz , Jessica Rudnick, Elizabeth J. Sturdy, Ash T. Zemenick, Steven P. Lee, Mikaela M. Provost, Carlos A. Ruvalcaba, Derek J. N. Young, and Emilio Laca. 2018-03-03. Evolution toward holistic review in the Ecology Graduate Program at UC Davis – Part II: Methods for evaluating progress. 10th Annual Understanding Interventions that Broaden Participation in Science Careers Meeting. Baltimore, MD.	2018
Oldfather, Meagan F., Brian Smithers, Michael J. Koontz , Jan Nachlinger, Catie Bishop, Jim Bishop, and Constance I. Millar. 2018-02-02. Alpine plant community-climate relationships across elevation gradients in the White Mountains, California. California Native Plant Society Conservation Conference. Los Angeles, CA.	2018

- Koontz, Michael J.**, Malcolm P. North, and Andrew M. Latimer. 2016-10-17. 2016
Spatial heterogeneity of vegetation increases forest resistance to wildfire, and
modern forests have a high potential for large, stand-replacing events. MtnClim
Conference. Leavenworth, WA.
- Koontz, Michael J.**. 2014-09-24. The eco-evolutionary consequences of multiple 2014
introductions for colonizing individuals. BSPM Departmental Seminar and
Thesis Defense. Fort Collins, CO.
- Koontz, Michael J.** and Ruth A. Hufbauer. 2014-08-08. The consequences of 2014
multiple introductions for colonizing individuals. Ecological Society of America
Annual Meeting. Sacramento, CA.
- Koontz, Michael J.** and Ruth A. Hufbauer. 2014-02-19. Parsing propagule pressure: 2014
The role of multiple introductions in the colonization of novel habitats. Front
Range Student Ecology Symposium. Fort Collins, CO.

CURRENT COLLABORATIONS

- Michael J. Koontz**, Chhaya M. Werner, Stephen E. Fick, Malcolm P. North, and [GitHub]
Andrew M. Latimer. Local variability of vegetation structure increases forest
resilience to wildfire.
- Michael J. Koontz**, Andrew M. Latimer, Leif A. Mortenson, Chris J. Fettig, Connie [GitHub]
I. Millar, and Malcolm P. North. The effect of spatial variability of forest
structure on the severity of a tree-killing insect.
- Michael J. Koontz** and Jeff C. Schank. An agent based model simulation of the [GitHub]
outbreak behavior of the western pine beetle during the 2012 to 2016 Sierra
Nevada megadrought.
- Oldfather, Meagan F., Brian Smithers, **Michael J. Koontz**, Jan Nachlinger, Catie
Bishop, Jim Bishop, and Connie I. Millar. Alpine plant community-climate
relationships across elevation gradients in the White Mountains, California.
- Jens T. Stevens, **Michael J. Koontz**, and Chhaya M. Werner. Local effects of aspect
on vegetation productivity in California.
- Michael J. Koontz** and Ruth A. Hufbauer. Several, small introductions of [GitHub]
individuals to a novel environment facilitate adaptation by mitigating genetic
load.

REVIEWING SERVICE

rOpenSci R packages ([ccafs](#)), Journal of Theoretical Biology

PROFESSIONAL MEMBERSHIPS

- GLORIA Great Basin (<https://www.gloriagreatbasin.org/>)
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|---------------------------------------|--------------|
| Secretary, Board Member, Data Manager | 2017 - 2018 |
| Volunteer | 2013 - 2018 |
| Ecological Society of America | 2014 to 2018 |
| American Alpine Club | 2016 to 2018 |
| Northern California Botanists | 2016 |