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 (expected)
Committee: Andrew Latimer, Malcolm North, Connie Millar
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

Project: Using drones to link spatial features of forests and bark beetle-induced mortality at broad spatial scales ($7,500)

Collaborators: 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

Project: Assessing forest spatial structure and bark beetle spread using small, unmanned aerial systems (sUAS) ($19,420)

Collaborators: 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, *et al.* 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 pilot workshop for Data Carpentry in Davis, California with 30 learners that teaches project organization and management for spatial data (upcoming)

ECL298 R for Data Analysis and Visualization in Science 2018

A quarter-long, 2-credit graduate course of 25+ ecologists at the University of California, Davis teaching scientific computing skills (data/project management, version control, reproducible workflows using the programming language R)

Data Carpentry Week: Introduction to R 2017

A week-long course of 25+ learners taught as part of the Data Intensive Biology Summer Institute at the University of California, Davis teaching scientific computing skills to researchers using R

ECOL592 Introduction to R 2014

A semester-long, 1-credit graduate course of 20+ learners at Colorado State University including professors, postdocs, undergraduates, and local professionals teaching basic data manipulation and visualization using R

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

Davis R Users Group (D-RUG): "High quality plots using base R graphics" 2015

LIFE320 Ecology, Colorado State University: "Invasion Biology" 2013

Formal training

Educational psychology & instructional design, SoftwareCarpentry 2016

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. 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. 2016

Koontz, Michael J.. 2014-09-24. The eco-evolutionary consequences of multiple introductions for colonizing individuals. BSPM Departmental Seminar and Thesis Defense. Fort Collins, CO. 2014

Koontz, Michael J. and Ruth A. Hufbauer. 2014-08-08. The consequences of multiple introductions for colonizing individuals. Ecological Society of America Annual Meeting. Sacramento, CA. 2014

Koontz, Michael J. and Ruth A. Hufbauer. 2014-02-19. Parsing propagule pressure: The role of multiple introductions in the colonization of novel habitats. Front Range Student Ecology Symposium. Fort Collins, CO. 2014

Current Collaborations

Michael J. Koontz, Chhaya M. Werner, Stephen E. Fick, Malcolm P. North, and Andrew M. Latimer. Local variability of vegetation structure increases forest resilience to wildfire. [GitHub]

Michael J. Koontz, Andrew M. Latimer, Leif A. Mortenson, Chris J. Fettig, Connie I. Millar, and Malcolm P. North. The effect of spatial variability of forest structure on the severity of a tree-killing insect. [GitHub]

Michael J. Koontz and Jeff C. Schank. An agent based model simulation of the outbreak behavior of the western pine beetle during the 2012 to 2016 Sierra Nevada megadrought. [GitHub]

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 individuals to a novel environment facilitate adaptation by mitigating genetic load. [GitHub]

Reviewing Service

rOpenSci `R` packages (ccafs), Journal of Theoretical Biology

Professional Memberships

GLORIA Great Basin (https://www.gloriagreatbasin.org/)

- 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