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EDUCATION

Ph.D., Quantitative Ecology and Resource Management (QERM), University of Washington, June 2018
Title: "Modeling population dynamics and species interactions in a changing climate"
Committee: Joshua Lawler (chair), Mark Kot, Laura Prugh, Trevor Branch, Janneke Hille Ris Lambers

M.S., QERM, University of Washington, March 2015
Title: "Quantifying sensitivity and exposure to climate change in Western North American species"

B.S., Mathematics, The Evergreen State College (TESC), June 2005

PUBLICATIONS

In review   Pazdral RS, Lawler JJ, **Rinnan DS**, Michalak JL, Carroll C. Protecting geophysical diversity as a strategy for biodiversity conservation and land prioritization in the face of climate change in western North America.

In review   **Rinnan DS**, Jetz W. Terrestrial conservation opportunities and inequities revealed by global multi-scale prioritization. Available on bioRxiv. https://doi.org/10.1101/2020.02.05.936047

2020   Lawler JJ, **Rinnan DS**, Michalak JL, Withey JC, Randels CR, Possingham HP. Planning for climate change through additions to a national protected area network: implications for cost and configuration. *Philosophical Transactions of the Royal Society B*, 375(1794). https://doi.org/10.1098/rstb.2019.0117

2019   **Rinnan DS**, Lawler JJ. Climate niche factor analysis: a spatial approach to quantifying species vulnerability to climate change. *Ecography*, 42(8) 1494-1503. https://doi.org/10.1111/ecog.03937

2018   **Rinnan DS**. Population persistence in the face of climate change and competition: a battle on two fronts. *Ecological Modelling*, 385, 78-88. https://doi.org/10.1016/j.ecolmodel.2018.07.004

2018   **Rinnan DS**. The dispersal success and persistence of populations with asymmetric dispersal. *Theoretical Ecology*. 11(1), 55-69. https://doi.org/10.1007/s12080-017-0348-x

2017   Harsch MA, Phillips A, Zhou Y, Leung MR, **Rinnan DS**, Kot M (2017). Moving forward: insights and applications of moving-habitat models for climate change ecology. *Journal of Ecology*, 105(5), 1169-1181. https://doi.org/10.1111/1365-2745.12724

PROFESSIONAL EXPERIENCE

Postdoctoral Associate, Yale Center for Biodiversity and Global Change, Yale University, 2018 – present
- Project title: "Reserve network design for the global conservation of terrestrial vertebrates"

Co-Instructor, Ecology & Evolutionary Biology Department, Yale, 2019
- Course title: Biodiversity Change Research in the Age of Big Data

Instructor, Professional and Continuing Education Program, UW, 2016 – 2018
- Course title: Data Analysis and Modeling with R

Research Assistant, UW, 2011 – 2018
- Project title: "Measuring habitat outcomes of state acquisitions and regulations"
- Project title: "Assessing return on conservation investment in the face of climate change"
- Project title: "Modeling the effects of species range shifts"
- Project title: "Pacific Northwest climate change vulnerability assessment"

Teaching Assistant, Professional and Continuing Education Program, UW, 2014 – 2016
- Course title: Intro to Statistical Analysis with R
- Course title: Data Analysis and Modeling with R
- Course title: Advanced R Programming and Graphics

Tutor, self-employed, 2006 – 2011
- Subjects included mathematics, physics, chemistry, English, Spanish

Teaching Assistant, TESC, Olympia, WA, 2004 – 2005
- Program title: Methods of Applied Mathematics. Courses included nonlinear dynamics, linear algebra, mathematical biology, differential equations

Tutor, Quantitative Reasoning Center, TESC, Olympia, WA, 2004 – 2005
- Subjects included mathematics, physics, chemistry, biology

SOFTWARE

CENFA package for R: tools for climate- and environmental- niche factor analysis of spatial data, including methods for visualization of spatial variability of species sensitivity, exposure, and vulnerability to climate change. Available at https://cran.r-project.org/package=CENFA.

HONORS, AWARDS, FELLOWSHIPS & GRANTS

UW Student Technology Fee Grant, $47,442 for proposal of high-performance remote servers for QERM program, June 2015

ANIMOVE Summer School Fellowship, Max Planck Institute for Ornithology, Germany, August 2013

STATMOS Visualization of Climate Data Fellowship, National Center for Atmospheric Research, May 2013

Best Student Presentation, QERM Seminar, UW, March 2013

Hall-Ammerer-WRF Top Scholar Award, UW, September 2011 – June 2012

Computer Science, Engineering, and Mathematics Scholar, National Science Foundation, 2004 – 2005

Scholastic Achievement Award, TESC, September 2003 – June 2005

PRESENTATIONS

Talks:

Half-Earth Day Conference: Pathways to a Half-Earth Future, Berkeley, CA, October 2019.
- "Which half? Global priorities for terrestrial vertebrate conservation," (Global and Regional Conservation Priorities in Oceans and on Land session)
- "Spatial reserve design for global conservation" (Half-Earth Project Educator Ambassador Institute workshop)

Ecological Society of America Conference, Louisville, KY, August 2019. "Which half? A global reserve network for the conservation of every terrestrial vertebrate species"

Spatial Reserve Design Symposium, Yale, September 2018. "Incorporating climate change into spatial conservation plans"

Ecological Society of America Conference, Portland, OR, August 2017. "The dispersal success and persistence of populations with asymmetric dispersal"

Quantitative Seminar, School of Aquatic and Fishery Sciences, UW, April 2016. "Incorporating biological processes into species distribution models"

Species on the Move Conference, Hobart, Tasmania, AUS, February 2016. "Incorporating interspecific interactions and dispersal into species distribution models"

Graduate Climate Conference, Woods Hole Oceanographic Institute, MA, October 2015. "Population persistence in the face of climate change and competition: a battle on two fronts"

AniMOVE Symposium, Max Planck Institute for Ornithology, Radofzell, Germany, August 2013. "Quantifying sensitivity and exposure to climate change in Western North American species"

Visualization of Climate Data Workshop, NCAR, Boulder, CO, May 2013.

Posters:

Program on Climate Change Summer Institute, Friday Harbor Laboratories, WA, September 2017

Graduate Climate Conference, Pack Forest Conference Center, WA, October 2016

Program on Climate Change Summer Institute, Friday Harbor Laboratories, WA, September 2015

Graduate Student Symposium, School of Environmental and Forestry Sciences, UW, March 2014

Guest Lectures:
    ESRM 441: Landscape Ecology, UW, October 2017. "An introduction to species distribution modeling"
    QERM 597: Current Topics in Quantitative Ecology, UW, March 2017. "Data visualization with Shiny"
    ESRM 350: Wildlife Biology and Conservation, UW, November 2015. "Modeling species competition"
    ESRM 441: Landscape Ecology, UW, November 2015. "Species distribution modeling with MaxEnt"

SCIENCE ADVISORY WORK

2019 – present Member of the Nature Map Earth consortium, contributing biodiversity science and expertise to guide policy for the Convention on Biological Diversity's post-2020 framework

2019 Scientific consultant for the Rainforest XPRIZE design

2019 "Gaining consensus on spatial and temporal biodiversity metrics for informed decision-making", Map of Life representative to the UN Environment World Conservation Monitoring Centre

2018 – present "Which half? A spatial reserve network for the preservation of every terrestrial vertebrate", decision science and education support for the E.O. Wilson Biodiversity Foundation's Half-Earth Project

2017 "Measuring habitat outcomes of state acquisitions and regulations", report for the Joint Legislative Audit and Review Committee, Washington State Legislature, coauthor

2015 – 2017 "Protecting geophysical diversity as a strategy for biodiversity conservation and land prioritization in the face of climate change in western North America", coauthor and mentor for Rosemary Pazdral, graduated, M.S. student

2015 – 2016 "Climate change vulnerability assessment for the Treaty of Olympic Tribes", report for the Quinault Indian Nation, Hoh Tribe, and Quileute Tribe, contributor

OUTREACH & ACTIVITIES

Journal reviewer
    - One Earth
    - Ecology and Evolution
    - Journal of Mammalogy
    - Theoretical Ecology
    - PLOS One

Grant Review Panelist, Yale Institute for Biospheric Sciences, 2019
Member, Program on Climate Change Graduate Steering Committee, UW, 2017 – 2018
Project Leader and Senior Editor, The Public Comment Project, 2016 – present
Organizer, Climate Change Video Contest, UW, 2015
Senator, Graduate & Professional Student Senate, UW, 2013 – 2015
Member, Ecological Society of America, 2011 – present
Member, Puget Sound Mycological Society, 2011 – present
Crew Leader, Oregon Country Fair Recycling Crew, OR, 2008 – present

RELEVANT COURSEWORK

Stochastic modeling
Experimental design
Mathematical ecology
Optimization techniques for natural resources
Numerical computing for the natural resources
Ecological scaling
Time series analysis
Geographic information systems
Beautiful graphics in R
Super advanced R
Statistical inference
Multiple ecology seminars
Wildlife biology seminar
Communicating climate change
Applied improvisation for science communications

SKILLS

Statistics: inference, predictive modeling, time series, spatial analysis, Bayesian methods
Mathematics: linear algebra, differential equations, nonlinear dynamics, optimization
Software and programming: R, GitHub, Google Earth Engine, ArcMap, R package development, LaTeX
Data visualization
Geospatial analysis
Pacific Northwest natural history
Mushroom identification
Proficiency in Spanish

REFERENCES

Walter Jetz
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Department of Ecology & Evolutionary Biology
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