



Heather L. Rustigian-Romsos

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Ms. Rustigian-Romsos is a landscape ecologist/GIS specialist whose work has focused on predicting effects of land management and landscape change on vertebrates with spatially explicit habitat, population, and connectivity models. She has over 15 years of experience in applied ecological GIS analysis and modeling. Her recent work at CBI has focused on the conservation of fishers, martens, and other carnivores in the Sierra Nevada.

EDUCATION

M.S. Geography, Oregon State University, 1999

M.A. Biology, William Paterson University, 1998

B.A. Environmental Studies, Middlebury College, 1994

EMPLOYMENT HISTORY

2003 – present. **Conservation Biologist / GIS Analyst**, Conservation Biology Institute, Corvallis, OR

2002 – 2003. **Research Associate**, Department of Ecology, Montana State University, Bozeman, MT

2000 – 2002. **Associate Scientist**, Department of Wildlife Ecology, University of Maine, Orono, ME

1999 – 2000. **Environmental Specialist**, Military Programs Office, Charis Corporation, Barstow, CA

1997 – 1999. **Graduate Research Assistant**, Department of Geosciences, Oregon State University, Corvallis, OR

1995 – 1997. **Graduate Teaching and Research Assistant**, Department of Biology,

William Paterson University, Wayne, NJ

1995. **Wildlife Research Technician**, South Carolina Cooperative Fish and Wildlife Research Unit, Clemson, SC

SELECT PROJECT EXPERIENCE

Southern Sierra Nevada Fisher Conservation Assessment and Strategy. GIS analyst/modeler for multi-agency effort to conserve and recover an isolated and imperiled population of Pacific fisher (*Pekania pennanti*). Collaborated with team members to create predictive habitat models, model landscape connectivity, and perform multivariate statistical analyses to define conservation targets.

Effects of climate and vegetation on the current and future distribution of martens and fishers in the Sierra Nevada, California, Yale Mapping Framework. Investigated effects of climate and vegetation on the distribution of martens (*Martes caurina*) and fishers (*Pekania pennanti*) in the Sierra Nevada in California under current and projected future conditions to inform conservation efforts and investigate how different modeling methods and resolutions may affect predictions about species' responses to climate change.

Sierra Carnivores, Resources Legacy Fund. GIS analyst/modeler for effort to provide spatially explicit scientific guidance for forest management to enhance populations of four imperiled forest carnivores: marten (*Martes americana*), fisher (*Pekania pennanti*), wolverine (*Gulo gulo*), and Sierra Nevada red fox (*Vulpes vulpes necator*), in California's Sierra Nevada in light of climate change, habitat and population fragmentation, and forest and fire management options. Compiled and assessed existing data and models. Created new predicted probability of occupancy models. Evaluated habitat connectivity with least cost corridor modeling.

California Connectivity, Caltrans. Collaborative effort to identify and characterize areas important to maintaining a functional network of connected wildlands in California. Worked as a GIS analyst with a team of planners and biologists, with guidance from numerous agencies and stakeholders, to create three primary products: (1) a statewide Essential Habitat Connectivity Map, (2) a database characterizing areas delineated on the map, and (3) guidance for mitigating the fragmenting effects of roads and for developing and implementing local and regional connectivity plans. The project was given the 2011 Exemplary Ecosystem

Initiative Award by the Federal Highways Administration. Assembled state-wide GIS datasets, evaluated ecological integrity, and constructed wildlife habitat connectivity maps for CA using several analytic tools. Conducted prioritization analysis of connectivity areas for conservation.

Fisher Baseline Assessment and Cumulative Effects Analysis in the Sierra Nevada, California – US Forest Service, Region 5.

GIS analyst/modeler for assessment of the historic, current, and future habitat and population status of the fisher (*Pekania pennanti*) in the Sierra Nevada. Worked as part of team evaluating the cumulative effects of wildfires, fuels management, timber harvest, and other threats to this isolated population. The project involved coupling landscape-level models of fire and vegetation dynamics with fisher habitat suitability models and spatially explicit population dynamic models.

PUBLICATIONS

- Spencer, W.D., H. Rustigian-Romsos, K. Ferschweiler, and D. Bachelet. 2015. Simulating Effects of Climate and Vegetation Change on Distributions of Martens and Fishers in the Sierra Nevada, California, Using Maxent and MC1. Chapter 9, pp135-152 In: Bachelet, D. and D. Turner (editors) 2015. Global Vegetation Dynamics: Concepts and Applications in the MC1 Model. AGU Geophysical Monographs 214.
- Spencer, W.D., S.C. Sawyer, H.L. Romsos, W.J. Zielinski, R.A. Sweitzer, C.M. Thompson, K.L. Purcell, D.L. Clifford, L. Cline, H.D. Safford, S.A. Britting, and J.M. Tucker. 2015. Southern Sierra Nevada fisher conservation assessment. Unpublished report produced by Conservation Biology Institute.
- Zielinski, W.J., K.M. Moriarty, J. Baldwin, T. A. Kirk, K.M. Slauson, H.L. Rustigian-Romsos, and W. D. Spencer. 2015. Effects of season on occupancy and implications for habitat modeling: the Pacific marten *Martes caurina*. Wildlife Biology 21: 56-67.
- Scheller, R.M., W. Spencer, H. Rustigian, A. Syphard, B.C. Ward, and J. Strittholt. 2011. Using stochastic simulation to evaluate competing risks of wildfires and fuels management on an isolated forest carnivore. Landscape Ecology 26:1491-1504.
- Spencer, W., H. Rustigian-Romsos, J. Strittholt, R. Scheller, W. Zielinski, and R.

- Truex. 2010. Using occupancy and population models to assess habitat conservation opportunities for an isolated carnivore population. *Biological Conservation* 144:788- 803. DOI 10.1016/j.biocon.2010.10.027.
- Spencer, W.D., P. Beier, K. Penrod, K. Winters, C. Paulman, H. Rustigian-Romsos, J. Strittholt, M. Parisi, and A. Pettler. 2010. California Essential Habitat Connectivity Project: A Strategy for Conserving a Connected California. Prepared for California Department of Transportation, California Department of Fish and Game, and Federal Highways Administration. February 2010.
- Rustigian-Romsos, H., W. Spencer, and J. Strittholt. 2010. Predicting habitat suitability for the American marten on the Lassen National Forest. Final Report for the Lassen National Forest. Conservation Biology Institute: Corvallis, Oregon.
- Spencer, W.D., H.L. Rustigian, R.M. Scheller, A. Syphard, J. Strittholt, and B. Ward. 2008. Baseline evaluation of fisher habitat and population status, and effects of fires and fuels management on fishers in the southern Sierra Nevada. Unpublished report prepared for USDA Forest Service, Pacific Southwest Region. June 2008. 133 pp + appendices.
- Rustigian, H.L., M.V. Santelmann, and N.H. Schumaker. 2007. Potential impacts of alternative landscape designs on amphibian population dynamics. *In From the Corn Belt to the Gulf: Ecological and Societal Implications of Alternative Agricultural Futures*, edited by J. Nassauer, M. Santelmann, and D. Scavia. Washington, DC: Resources for the Future Press.
- Rubin, E.S., H.L. Rustigian, and M.D. White. 2006. Target Species Habitat Mapping for the Green Visions Plan For 21st Century Southern California. Technical Report for the University of Southern California Center for Sustainable Cities and GIS Research Laboratory. Conservation Biology Institute: Corvallis, Oregon.
- Strittholt, J.R. and H. Rustigian. 2004. Ecological Issues Underlying Proposals to Conduct Salvage Logging in Areas Burned by the Biscuit Fire. Technical Report. Conservation Biology Institute: Corvallis, Oregon.
- Strittholt, J.R. and H. Rustigian. 2004. Living in Fire Prone Natural Landscapes –

- Reducing the Risk to Rural Communities from Wildfire. Technical Report. Conservation Biology Institute: Corvallis, Oregon.
- Santelmann, M.V., D. White, K. Freemark., J.I. Nassauer, J.M. Eilers, K.B. Vache,, B.J. Danielson, R.C. Corry, M.E. Clark, S. Polasky, R.M. Cruse, J. Sifneos, H. Rustigian, C. Coiner, J. Wu, and D. Debinski. 2004. Alternative futures for agriculture in the U.S. Cornbelt. *Landscape Ecology* 19(4):357-374.
- Rustigian, H.L., M.V. Santelmann, and N.H. Schumaker. 2003. Assessing the potential impacts of alternative landscape designs on amphibian population dynamics. *Landscape Ecology*: 18(1):65-81.
- Rustigian, H.L., and W.B. Krohn. 2002. GIS-based evaluation of waterfowl and wading bird habitats in Maine. Technical Report to the Maine Department of Inland Fisheries and Wildlife.