

Jessica A. Castillo Vardaro

Department of Ecology and Evolutionary Biology
106A Guyot Hall, Princeton NJ 08544
jvardaro@princeton.edu

Academic Positions

Postdoctoral Research Associate October 2015 – present
Princeton University, Department of Ecology and Evolutionary Biology
Pringle and Tarnita Labs

Education

PhD, Wildlife Science August 2015
Oregon State University, Department of Fisheries and Wildlife
Major professor: Clinton W. Epps
Dissertation Title - *Population genetics of American pika (Ochotona princeps): Investigating gene flow and genetic diversity across multiple, complex landscapes.*

Graduate Certificate in College and Undergraduate Teaching June 2015
Oregon State University

B.S., Conservation and Resource Studies May 2008
University of California, Berkeley
Honors Thesis - *Endangered Feces: an analysis of predator diets in Carrizo Plain National Monument, California.* Faculty advisor: Justin Brashares.

Scholarships and Awards

2014 Ted Thorgaard Student Research Fund. Dept. of Fisheries and Wildlife, Oregon State University

2013 Savery Outstanding Doctoral Student Award. College of Agricultural Sciences, Oregon State University

2013 Student award competition finalist, International Congress for Conservation Biology, Baltimore MD. Society for Conservation Biology

2011 Graduate Student Research Grant. Mazamas Mountaineering Education Organization

2011 Briggs Scholarship in Biogeography. Dept. of Fisheries and Wildlife, Oregon State University

2011 Gender and Ethnic Diversity Working Group, Professional Development Travel Grant. The Wildlife Society

2010 - 2015 Graduate Research Fellowship. The National Science Foundation

2010 University Graduate Laurels Scholarship. Oregon State University

2007 - 2008 Sponsored Projects for Undergraduate Research (SPUR) Grant. College of Natural Resources, UC Berkeley

Experience

Teaching

Summer 2015 **Graduate Teaching Assistant**, FW 256: Field Sampling. Oregon State University.
Online course

Spring 2015 **Instructor of record**, FW 499/599: Techniques in Vertebrate Specimen Preparation for Natural History Museums. Oregon State University. *Designed and taught*

- 2011 **Graduate Teaching Assistant**, FW 317: Mammalogy. Oregon State University.
Online course development
- Spring 2008 **Undergraduate Student Instructor**, IB 198: General Comparison and Diversity in Vertebrate Anatomy and Museum Approaches in the Museum of Vertebrate Zoology. University of California, Berkeley
- Volunteer*
- 2009 **Mammalogist**. UC Berkeley Museum of Vertebrate Zoology/Universidad de San Carlos de Guatemala Museo de Historia Natural, International Cooperative Research Project. California, USA and Guatemala
- 2005 - 2009 **Museum Preparator**. Museum of Vertebrate Zoology, UC Berkeley
- Spring 2006 **Field Assistant** with Ph.D. candidate, Tom Devitt: Speciation and Hybridization in *Ensatina* Salamanders. UC Berkeley
- Spring 2005 **Field Assistant** with Ph.D. candidate, McCrea Cobb: Population Dynamics of Tule Elk at Point Reyes National Seashore, California. UC Berkeley
- Employment*
- 2005 - 2009 **Curatorial Assistant, Field Assistant, Lab Technician**: Grinnell Resurvey Project. Museum of Vertebrate Zoology, UC Berkeley
- Summer 2007 **NSF REU Student Researcher**: Phylogenetic and Biogeographic History of High Altitude Adaptation in Hummingbirds. UC Berkeley, Peru
- Summer 2005 **Biological Field Intern**. Great Swamp National Wildlife Refuge, USFWS

Publications

Peer Reviewed

- Castillo, J. A.**, C. W. Epps, A. R. Davis, and S. A. Cushman. 2014. Landscape effects on gene flow for a climate-sensitive montane species, the American pika. *Molecular Ecology* 23:843-856.
- Epps, C. W., **J. A. Castillo**, A. Schmidt-Kuentzel, P. du Preez, G. Stuart-Hill, M. Jago, and R. Naidoo. 2013. Contrasting Historical and Recent Gene Flow among African Buffalo Herds in the Caprivi Strip of Namibia. *Journal of Heredity* 104:172-181.

Peer Reviewed - currently in review or in prep

- Zero, V.H., A. Barocas, D.M. Jochimsen, A. Pelletier, X. Giroux-Bougard, D.R. Trumbo, **J.A. Castillo**, D. Evans Mack, M.A. Linnell, R.M. Pigg, J. Hoisington-Lopez, S.F. Spear, M.A. Murphy, L.P. Waits. Functional Connectivity of imperiled Idaho ground squirrels: A landscape genetics approach. *In review*, *Molecular Ecology*.
- Castillo, J.A.**, C.W. Epps, M.R. Jeffress, C. Ray, T.J. Rodhouse, and D. Schwalm. Landscape configuration and climate shape functional connectivity for a climate sensitive species, the American pika (*Ochotona princeps*). *In review*, *Ecological Applications*.
- Schwalm, D., C.W. Epps, T.J. Rodhouse, W.B. Monahan, **J.A. Castillo**, and C. Ray. Characterizing the American pika's bioclimatic niche with habitat and gene flow metrics indicates divergent future population trajectories. *In review*, *Global Change Biology*.

Reports and Outreach

- Epps, C. W. and **J. A. Castillo** (2011). *Pikas in Peril Project Research Objective Brief*. National Parks Service, Upper Columbia Basin Network.
http://science.nature.nps.gov/im/units/ucbn/monitor/pika/pika_peril/docs/PIP_OBJ2-ResourceBrief_May2011.pdf

Epps, C.W., D. Schwalm, **J.A. Castillo**, et al. (2013). *Analysis of Proposed Rock Quarrying and Trail Improvement Impacts on American Pikas in Grand Teton National Park*. NPS Natural Resource Technical Report (NPS/UCBN/NRTR-2013/756)

Presentations

Oral

- Castillo, J.A.**, D. Schwalm, C.W. Epps, W.B. Monahan, N.H. Schumaker, and T.J. Rodhouse. 2015. *An eco-evolutionary IBM improves predictions of future genetic connectivity for American Pikas (Ochotona princeps) in Crater Lake National Park, Oregon*. International Association of Landscape Ecology World Congress, Portland, Oregon. Invited symposium contributor.
- Castillo, J.A.**, C.W. Epps. 2015. *A Survey of genetic diversity and structure across space and time for American pikas*. 3rd Conference of the North American Pika Consortium, Golden, Colorado.
- Castillo, J.A.**, C.W. Epps, M.R. Jeffress, and C. Ray. 2014. *Landscape effects on gene flow of American pika: a comparative landscape genetics study*. Society for Conservation Biology North American Congress for Conservation Biology, Missoula, Montana.
- Castillo, J.A.** and C.W. Epps. 2014. *Landscape effects on American pika dispersal: a comparative landscape genetics study*. The Oregon Chapter of the Wildlife Society Annual Conference, Bend, Oregon.
- Castillo, J.A.** and C.W. Epps. 2014. *Landscape effects on American pika dispersal: a comparative analysis*. Research Advances in Fisheries, Wildlife and Ecology Symposium, Corvallis, Oregon.
- Castillo, J.A.** and C.W. Epps. 2013. *Landscape genetics of American pika at Crater Lake National Park, Oregon: evaluating the use of Mantel tests in a causal modeling framework*. The International Congress for Conservation Biology, Baltimore, Maryland. Student Award Competition Finalist.
- Castillo, J.A.** and C.W. Epps. 2012. *Comparing genetic structure of American pika populations at different elevations: how does the spatial scale of gene flow vary among landscapes?* Society for Conservation Biology North American Congress for Conservation Biology, Oakland, California.
- Castillo, J.A.**, 2009. *Endangered Feces: an analysis of predator diets in Carrizo Plain National Monument, California*. Bay Area Conservation Biology Symposium, Palo Alto, California.
- Castillo, J.A.**, 2009. *Endangered Feces: an analysis of predator diets in Carrizo Plain National Monument, California*. Museum of Vertebrate Zoology Evolutionary Biology Seminar Series, Berkeley, California.
- Witt, C. C., A. B. Johnson, **J. A. Castillo**, J. A. McGuire and R. Dudley. 2008. *Evolution of Hypoxia Resistance in Andean Hummingbirds*. American Ornithological Union 126th Meeting, Portland, Oregon. Presented by C. C. Witt.

Poster

- Castillo, J. A.**, C. W. Epps, and A. R. Davis. 2012. *Modeling connectivity and gene flow of American pikas in National Parks in the Western United States*. The Wildlife Society Annual Conference, Portland, Oregon. Student Research in Progress Poster.

Outreach

- Castillo, J.A.**, C.W. Epps. 2014. *American Pika in the Hart-Sheldon Landscape*. The Oregon Natural Desert Association 2014 Oregon Desert Conference. Bend, Oregon September 2014.
- Castillo, J.A.** and B. Siegel. 2011. *Pikas in Peril? A multi-regional vulnerability assessment of a climate-sensitive sentinel species*. Casual Conversations with Park Researchers, Crater Lake National Park, Oregon.

Jeffress, M and **J. A. Castillo**. 2010. *Pika Monitoring and “Pikas in Peril”*: Efforts to better understand our pika populations. Upper Columbia Basin Network Annual Science Advisory Committee Meeting, John Day, Oregon.

Service

Professional Education and Outreach

Workshop instructor, Preparation of Bird and Mammal Museum Study Skins. Oregon State University Student Chapter of the Wildlife Society and American Fisheries Society. Corvallis, OR, April 25-26, 2015.

Workshop co-instructor, Museum Collections and Specimen Vouchers. Society for Northwestern Vertebrate Biology Annual Meeting, Portland, Oregon, 24 Feb. 2015.

Community Outreach

Instructor, Winter Wonderings Program for local 3rd and 4th grade students. Animal Tracks and Signs. February 22, 2014

Peer Review:

Molecular Ecology. Top reviewer's list, 2014 - 2015

Professional Affiliations

The Wildlife Society, 2007 – present

Society for Conservation Biology, 2007 – present

North American Pika Consortium, Genetics Working Group, present

Professional References (contact info upon request)

Clinton W. Epps

Associate Professor of Wildlife

Department of Fisheries and Wildlife

Oregon State University

James Patton

Emeritus Professor/Curator of Mammals,

Museum of Vertebrate Zoology

University of California, Berkeley

Samuel Cushman (PhD Committee)

Research Ecologist

USDA Forest Service

Rocky Mountain Research Station