

Courtenay A. Ray

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Education

- 2017-** **University of California, Berkeley** - Ph.D. Candidate, Environmental Science, Policy, and Management; **Advisor:** Dr. Benjamin Blonder; Transferred from Arizona State University with advisor in January 2020.
- 2016** **University of California, Santa Cruz** - M.A. Ecology and Evolutionary Biology
Thesis: Invading coastal California's forests: Impacts and best management practices for the perennial grass, *Ehrharta erecta*; **Advisor:** Dr. Ingrid Parker
- 2011** **University of Washington**- Double major B.S. in Biology: Evolution & Ecology and Earth & Space Sciences with emphasis in Biology
- 2006** **Everett Community College**- Associate Degree in Arts and Sciences

Publications

- Blonder, B., Brodrick, P.G., Walton, J.A., Chadwick, K.D., Breckheimer, I.K., Marchetti, S., **Ray, C.A.**, Mock, K. 2021. Remote sensing of cytotype and its consequences for canopy damage in quaking aspen. [Global Change Biology](#). doi:10.1111/gcb.16064
- Franzman, J., Brush, M., Umemura, K., **Ray, C.**, Blonder, B., and Harte, J. 2021. Shifting macroecological patterns and static theory failure in a stressed alpine plant community. [Ecosphere](#). 12:e03548.
- Blonder, B., **Ray, C.A.**, Walton, J., Castaneda, M., Chadwick, K., Clyne, M., Gaüzère, P., Iversen, L., Lusk, M., Strimbeck, R., Troy, S., and Mock, K. 2021. Cytotype and genotype predict mortality and recruitment in Colorado quaking aspen (*Populus tremuloides*). [Ecological Applications](#). doi:10.1002/eap.2438.
- Gaüzère, P., Morin, X., Violle, C., Capesta, I., **Ray, C.A.**, and Blonder, B. 2020. Vacant yet invisable niches in forest community assembly. [Functional Ecology](#). doi:10.1111/1365-2435.13614.
- Gallagher, R.V.,..., **Ray, C.A.**, *et al.* 2020. The Open Traits Network: Using Open Science principles to accelerate trait-based science across the Tree of Life. [Nature Ecology & Evolution](#). doi:10.1038/s41559-020-1109-6.
- Kattge, J.,..., **Ray, C.A.**, *et al.* 2020. TRY plant trait database – enhanced coverage and open access. [Global Change Biology](#). doi:10.1111/gcb.14904.

Weiss, K.C.B. and **Ray C.A.*** 2019. A framework of functional traits for ecological communities: Synthesizing taxonomic divides. *Ecography*. doi: 10.1111/ecog.04387.
*Shared first authorship. E4 award paper.

Ray, C.A., Sherman, J.J., Godinho, A.L., Hanson, N., and Parker, I.M. 2018. Impacts and Best Management Practices for Erect Veldtgrass (*Ehrharta erecta*). *Invasive Plant Science and Management*. doi: 10.1017/inp.2018.2.

Thompson M.E., **Ray, C.A.**, and Donnelly, M.A. 2015. Microhabitat use of recently metamorphosed Mexican Treefrogs in Palo Verde National Park, Guanacaste Province, Costa Rica. *Herpetological Review*. 46:168-170.

Chambers, M., David, G., **Ray, C.**, Leitner, B., and Pyle, P. 2011. Habitats and conservation of molt-migrant birds in southeastern Arizona. *Southwestern Naturalist*. 56:204-211.

Book Review: CenTREAD Working Group (Cesar, R.G., Cohen, H., Crandall, S.G., Holl, K.D., **Ray, C.A.**, Reid, J.L.). 2013. Restoring Tropical Forests: A Practical Guide by Elliott, S.D., Blakesley, D., and Hardwick, K. *International Forestry Review*. 15:270.

Fellowships and Awards

- 2021** Environmental Policy, Science, and Management, UC Berkeley: **Bryan Wilson Fellowship**: \$3,100
- 2021** Environmental Policy, Science, and Management, UC Berkeley: **William Carroll Smith Fellowship**: \$2,000
- 2021** Rausser College, UC Berkeley: **Dr. E. Ralph de Ong Student Support**: \$1,300
- 2021** Sigma Xi, Berkeley Chapter: **Grants in Aid of Research**: \$500
- 2021** Rocky Mountain Biological Laboratory: **Jean Langenheim Award**: \$3,000
- 2020** Rocky Mountain Biological Laboratory: **Jean Langenheim Award**: \$3,000
- 2020** Colorado Native Plant Society: **John Marr Grant**: \$850
- 2019** Arizona State University: **RTI Graduate Student Support**: \$1,928
- 2019** Colorado Mountain Club: **Kurt Gerstle Fellowship**: \$2,000
- 2019** Rocky Mountain Biological Laboratory: **Snyder Endowment Graduate Fellowship**: \$645
- 2019** Arizona State University: **College Graduate Excellence Award**
- 2019** Arizona State University: **Graduate College Travel Award**: \$500
- 2019** Arizona State University: **Graduate College Travel Award**: \$500
- 2019** Arizona State University: **Graduate Student Travel Award**: \$400
- 2018** Arizona State University: **Individual Travel Grant**: \$446
- 2018** Arizona State University: **Graduate Student Travel Award**: \$400
- 2018** Arizona State University: **Graduate College Fellowship**: \$10,000
- 2017** Arizona State University: **Doctoral Recruitment Award**: \$5,000
- 2013** Organization for Tropical Studies: **Post Course Award**: \$500
- 2013** University of California, Santa Cruz: **Chancellor's Graduate Intern**

- 2012-2017** National Science Foundation: **Graduate Research Fellowship:** \$90,000
- 2007-2010** University of Washington: **Husky Promise Student:** Guaranteed full academic support and stipend
- 2006** Association of Women in Science: **E. Robert Winter Memorial Scholarship:** \$1,000

Professional Service

Reviewer for: Ecology and Evolution, Perspectives in Plant Ecology, Evolution and Systematics, IUCN (International Union for Conservation of Nature)

Teaching and Outreach

- 2021** Weekly 7th grade science mentor at middle schools in the Berkeley Unified School District through the “Be a Scientist” program
- 2021** Graduate Student Instructor-Climate Change and the Future of CA, UC Berkeley
- 2018-2019** Instructor at Sky School, an inquiry-based science program which predominantly serves low income public schools, Tucson, AZ
- 2018** Teaching Assistant- Animal Behavior, Arizona State University
- 2017** Teaching Assistant- Introductory Biology Laboratory, Arizona State University
- 2016** STEM Day volunteer at Bradley Elementary, Watsonville, CA
- 2015** Designed biology lessons for Santa Cruz Children’s Museum of Discovery
- 2015** Organized a weed pulling workshop on UC Santa Cruz campus
- 2014** Guest Lecturer in Plant Ecology, UC Santa Cruz
- 2014** Designed and led two workshops for middle school girls on seed dispersal, Expanding your Horizons Conference
- 2014** Lead demonstration on properties of liquid nitrogen-Cesar Chavez MS
- 2014** Teacher Assistant-Intro Biology and Plant Systematics, UC Santa Cruz
- 2013** Westlake Elementary Science Fair Judge, Santa Cruz, CA
- 2013** Santa Cruz County Science Fair Judge
- 2013** Teacher Assistant-Behavioral Ecology, UC Santa Cruz

Presentations

- 2019** British Ecological Society Meeting, Belfast, N. Ireland, Poster
- 2018** Ecological Society of America Meeting, New Orleans, LA, Talk
- 2017** Ecological Society of America Meeting, Portland, OR, Talk
- 2016** Missouri Botanical Garden Seminar, “Factors influencing pampas grass distributions in the Colombian páramos”, November 3rd, Invited talk
- 2016** Ecological Society of America Meeting, Ft. Lauderdale, FL, Talk

- 2016** UCSC Ecology and Evolution Graduate Symposium, Talk
2016 Graduate Student Symposium, UCSC, Talk
2015 Ecological Society of America Meeting, Baltimore, MD, Poster
2014 Graduate Student Symposium, UCSC, Poster
2013 University of California, Santa Cruz Plant Symposium, Talk
2013 California Botanical Society Centennial Celebration, Berkeley, CA, Talk
2013 UCSC Ecology and Evolution Graduate Symposium, Talk
2013 CA Invasive Plant Council Symposium, Lake Arrowhead, CA, Poster

Mentorship

Bachelor's thesis students

- Emily Xie (UC Berkeley), Winner of Melis Medal - 2020-2021
Annika Rose-Person (UC Santa Cruz) - 2015-2016
Anna Godinho (UC Santa Cruz), Winner of Chancellor's Award - 2012-2013
Emilie Winfield (UC Santa Cruz) - 2012-2013
Nicole Hanson (UC Santa Cruz) - 2013-2014

Summer undergraduates

- Nicole Smith (University of Michigan), Co-supervisor - 2020
Gavin Belfry (University of Tennessee), Co-supervisor - 2019-2020
Thomas Jenkins (University of Oxford), Main supervisor - 2019
Connie Webb (Western Washington University), Co-supervisor - 2019

Research / lab project students

- Brigitte Jaramillo (UC Berkeley) - 2020
Crystal Suazo (Arizona State University) - 2018-2019
Deidra Johnson (Arizona State University) - 2018-2019
Madison Lusk (Arizona State University) - 2019
Noah Weakly (Arizona State University) - 2018-2019
Otis Clyne (Arizona State University) - 2018

High School students

- Aidan Wells (Summer field assistant) - 2019-2020
One-on-one weekly science fair mentor (Watsonville High School, CA) - 2012-2013

Previous Research

August 2016-2017

- Research Associate, Rogers Lab, **Iowa State University**
Iowa and Mariana Islands
Supervisor: Dr. Haldre Rogers

Responsibilities: helped train and manage field crews in the Mariana Islands; oversaw data entering and organization; cleaned and assembled tidy datasets from long-term data

January-May 2012

Seedling Census Volunteer, **Institute for Tropical Ecosystem Studies**

Luquillo Forest Dynamics Plot, Puerto Rico

Supervisor: Chris Nytech

Research objectives: to examine the effects of land use history and hurricanes on seedling germination, recruitment, and growth in tropical forests

June-October 2011

Independent Research Project, **University of Washington**

Advisor: Dr. Janneke Hille Ris Lambers

Topic: Differences in pollinator regimes along an elevation gradient in sub-alpine meadows in Mt. Rainier National Park

October-December 2011

Intern, **Stanford University**

Robinson Crusoe Island, Chile

Supervisor: Dr. Lis Nelis

Research objectives: to examine synergistic interactions among invasive species across trophic levels

June-October 2011

Intern, **University of Washington**

Mount Rainier National Park Research Project, Washington

Supervisor: Dr. Janneke Hille Ris Lambers

Research objectives: to determine how tree growth, tree mortality, seed production, and recruitment vary across large environmental gradients

March-June 2011

Intern, **Smithsonian Migratory Bird Center**

Island Scrub Jay Project, Santa Cruz Island, California

Supervisors: Dr. Scott Sillett, Michelle Desrosiers

Research objectives: to monitor the stability of island scrub jay populations and determine the frequency of extra-pair mating, the sex ratio and clutch size of nests, nest vegetation preferences, and sources of nest failure

April 2009-April 2010

Intern, **University of Washington**, Ecology of Bird Loss Project, Mariana Islands

Supervisors: Dr. Haldre Rogers, Dr. Joshua Tewksbury, Dr. Janneke Hille Ris Lambers

Research objectives: to quantify the effects birds have on seed dispersal, seedling recruitment, tree species diversity, insect control and herbivory

July-September 2007

Intern, **Institute for Bird Populations**, Molt Migration and Stopover Project, SE Arizona

Supervisor: Peter Pyle

Research objectives: to determine which migratory bird species stopover in the monsoon regions of Arizona and Mexico during fall migration in order to molt

May-July 2007

Intern, **Institute for Bird Populations**, Willow Flycatcher Project, Yosemite National Park

Supervisor: Bob Wilkerson

Research objectives: to determine whether there are still resident populations of Willow Flycatchers in Yosemite National Park

March-May 2007

Intern, **Point Reyes Bird Observatory**, Off-road Vehicles and Bird Populations, Mojave Desert

Supervisor: Christopher McCreedy

Research objectives: to examine the effects of off-road vehicle usage in desert washes on avian species diversity, abundance, and breeding success

September-December 2006

Student Research Assistant, **University of Washington**, Song Sparrow Research, Seattle, WA

Supervisor: Dr. Michael Beecher

Research Objectives: to determine if hatch-year song sparrows enhance their song repertoire by visiting the territories of older birds during their first winter.

March-June 2006

Intern, **Dartmouth College**, Trophic Cascades in Fragmented Coastal Sage Scrub Habitat, Southwest California

Supervisor: Dr. Eric Walters

Research Objectives: to measure the effects of habitat fragmentation on avian nest success, natal dispersal in California towhees, and arthropod abundance

Specialty Courses and Workshops

- 2019** Using data provenance to create reproducible, transparent, and well-documented code-British Ecological Society, Belfast, UK
- 2019** Stage-based demographic models in ecology, evolution and conservation-Natural Environmental Research Council, Oxford, UK
- 2017** A Hands-On Short Course on Species Distribution Modeling in Conservation Using R: From Start to Finish-Ecological Society of America, Portland, OR
- 2014** Curso de Actualización en Taxonomía y Sistemática de Cyperaceae (Course on Taxonomic and Systematic Updates in Cyperaceae)-Bogota, Colombia
- 2013** OTS Tropical Biology: An Ecological Approach, Costa Rica
- 2010** University of Washington: Field Geology, Australian Outback
- 2010** University of Washington: Field Geology, Western Montana

Society Membership

Colorado Native Plant Society