

JOAN CELESTE DUDNEY

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EDUCATION

- Ph.D. 2019. Environmental Science, Policy and Management, University of California, Berkeley
B.A. 2006. Biology, Occidental College, Honors in Biology

PEER-REVIEWED PUBLICATIONS

- Dudney, J.**, C. Willing, A. Das, J. Nesmith, N. Stephenson, A. Latimer, and J. Battles. "Nonlinear shifts in infectious rust disease due to climate change." (In press, *Nature Communications*).
- Walter, J., L. G. Shoemaker, N. K. Lany, M. Castorani, S. B. Fey, **J. Dudney**, L.A. Gherardi, C. Portales-Reyes, A. L. Rypel, K. L. Cottingham, K. N. Suding, D. C. Reuman, and L. M. Hallett. "The spatial synchrony of species richness and its relationship to ecosystem stability." (In press, *Ecology*).
- Luo, M., 1, D. Reuman, L. Hallett, L. Shoemaker, L. Zhao, M. Castorani, **J. Dudney**, L.A. Gherardi, A. L. Rypel, L. Sheppard, J. A. Walter, S. Wang. "Timescale-dependent effects of dispersal on population synchrony and variability: implications for metapopulation studies." (In press, *Oikos*).
- Dudney, J.**, R. York, A. T. Roughton, C. Tubbesing, D. E. Foster, S. L. Stephens, J. Battles. 2021. "Overstory removal and biological legacies influence long-term forest management outcomes on introduced species and native shrubs." *Forest Ecology and Management*.
- Nocco, M., C. M. MacKenzie, B. M. McGill, R. K. Tonietto, **J. Dudney**, M. C. Bletz, T. Young, S. E. Kuebbing. 2021. "Equity, mentorship, and, research productivity during the COVID-19 pandemic and beyond." *Biological Conservation*.
- S. Borelle, J. Koch, K. Ingeman, B. McGill, M. Lambert, **J. Dudney**, C. Chang, A. Teffer, and G.Wu. 2020. "What does it mean to be for a place?" *Pacific Conservation Biology*.
- Dudney, J.**, A. Das, M. C. Cahill, J. Cribbs, D. M. Duriscoe, J. Nesmith, N. Stephenson, and J. Battles. 2020. "Compounding effects of blister rust, mountain pine beetle, and fire threaten four white pines." *Ecosphere*.
- Slaton, M, S. Gross, M. Meyer, P. van Mantgem, **J. Dudney**, and J. Nesmith. 2019. "Distribution, health, and status of whitebark pine (*Pinus albicaulis*) in California." *Fremontia*.
- Dudney, J.**, R. Hobbs, R. Heilmayr, J. Battles, and K.N. Suding. 2018. "Navigating novelty and risk in resilience management." *Trends in Ecology and Evolution*.
- Dudney, J.**, L.M. Hallett, L. Larios, E. Farrer, and K.N. Suding. 2017. "Lagging behind: have we overlooked previous year precipitation effects in annual grasslands?" *Journal of Ecology*.

OPINION PIECES & BOOK CHAPTERS

- Dudney, J.**, K.N. Suding. 2020. "The elusive search for tipping points." *Nature Ecology and Evolution*.

Dudney, J. "Infectious disease, bark beetles, and wildland fire impacts on southern Sierra white pines." 2020. Invited publication for *The Bulletin of the Ecological Society of America*.

L. E. Valentine, N. Shackelford, B. A. Johnson, M. D. Craig, M. P. Perring, K. B. Hulvey, L. M. Hallett, R. Campbell, **J. Dudney**, T. E. Erickson, A. Ritchie, H. Harrop-Archibald, C. E. Ramalho, R. J. Standish. 2020. "Richard J. Hobbs: how one ecologist has influenced the way we think about restoration ecology." *Restoration Ecology*.

MacKenzie, Caitlin M., R. Barak, S. Bayer, M. Bletz, M. Brunson, **J. Dudney**, O. Gaoue, J. Gill, A. Harris, S. Kuebbing, B. McGill, M. Nocco, R. Tonietto, M. Vahsen, E. Waring. 2020. "Plant Love Stories: Share your story and grow a movement." *The Bulletin of the Ecological Society of America*.

MacKenzie, Caitlin M., S. Kuebbing, R.S. Barak, M. Bletz, **J. Dudney**, B. M. McGill, R. K. Tonietto. 2019. "We do not want to 'cure plant blindness' we want to grow plant love." *Plants, People, Planet*.

Dudney, J., L.M. Hallett, and K.N. Suding. 2017. "Invasive species and ecological restoration." In Allison, S. and S. Murphy (Ed.). *The Routledge Handbook of Ecological and Environmental Restoration*.

IN REVIEW OR REVISION

van Mantgem, **J. Dudney**, Milano, L. A. Vandergast, J. Nesmith. "Growth response of whitebark pine to extreme drought in the Sierra Nevada." (In revision, *Ecological Applications*).

Hallett, L.H., L. Shoemaker, L. Zhao, S. Wang, R. J. Hobbs, A. L. Downing, **J. Dudney**, ... K. Suding. "The long and the short of it: Decomposing synchrony and compensatory dynamics across temporal scales." (In revision, *Ecology*).

Volpe, J., E. Higgs, R.J. Hobbs, S. D. Murphy, **J. Dudney** "Bionovelty and ecological restoration." (In revision, *BioScience*).

Shackelford, N., **J. Dudney**, M. Stueber, V. M. Temperton., K. L. Suding. "Measuring at all scales: Sourcing data for restoration references." (In revision, *Restoration Ecology*).

FELLOWSHIPS AND AWARDS (Total \$399,200)

Fellowships and Science Awards

David H. Smith Conservation Postdoctoral Fellowship, 2019-2021 (\$200,000)

National Science Foundation Graduate Research Fellowship, 2014-2019 (\$138,000)

Robert and Patricia Switzer Fellowship, 2017 (\$15,000)

Regent's Department Fellowship, 2014 (\$18,000)

William Carroll Smith Fellowship, 2016 (\$18,000)

Cal-IPC Presenter Award, 2014

Rose Hills Foundation Science Award, 2006 (\$10,000)

Teaching and Outreach Awards

College of Natural Resources Best Overall Photo Award, Berkeley, 2019

Represented UC Berkeley for Graduate Research Advocacy Day in Sacramento, 2018
Summer Writing Contest Winner, UC Berkeley, 2018
Berkeley Grad Slam Championship - 2nd Place, 2017
Outstanding GSI Award, Berkeley, 2016

RESEARCH GRANTS (Total \$708,370)

Sequoia Parks Conservancy research grant, 2020 (\$4,700)
Small Research Grant, USGS, 2019 (\$4,500)
FWS grant for expanding scope of SSA, 2018-2019 (\$60,000)
FWS Whitebark Species Status Assessment (SSA), 2018-2019 (\$100,000)
FWS Whitebark Species Status Assessment (genetic component), Collaborator, 2018-2019 (\$80,000)
Gloria Barron Wilderness Society Scholarship, 2017 (\$10,000)
Garden Club of America Restoration Grant, 2017 (\$8,000)
USFS Forest Health Protection Grant, Research Associate, 2015-2017 (\$210,000)
USGS Natural Resource Preservation Program Grant, Research Associate, 2015-2016 (\$180,000)
Sequoia Parks Conservancy Travel Award, 2016 (\$270)
Lewis and Clark Research Fellowship, 2016 (\$4,700)
Summer Travel Award, Berkeley, 2015 (\$400)
Northern California Botanists Scholarship, 2014 (\$1,000)
California Native Plant Society Scholarship, 2014 (\$1,500)
Guadalupe-Coyote Resource Conservation District Grant, 2013 (\$10,000)
City of Palo Alto Fire Research Contract, 2013 (\$10,000)
PATF Grant for Young Women's Scholarship Program in Paraguay, 2008 (\$7,000)
Peace Corp's Small Project Assistance Grant, 2007 (\$5,000)
The Richter Research Abroad Award, 2005 (\$9,000)
Environmentalist of the Year Scholarship, 2002 (\$4,000)
Occidental College Student Research Grant, 2003 (\$2,000)
Sierra Nevada Memorial Hospital Scholarship, 2002 (\$2,000)
Nevada County Library Scholarship, 2002 (\$1,000)

RESEARCH GRANTS IN REVIEW (Total requested \$835,000)

Department of Energy, Co-Principal Investigator, 2022-2024 (\$835,000)

RESEARCH PUBLICATIONS IN PREPARATION

Dudney, J., R. Hobbs., K. Suding, R. Standish, C. D'Antonio. "Encouraging innovation in restoration through resilience-based thinking." (Invited review for *Restoration Ecology*).

Heilmayr, R., J. Dudney, F. Moore. "Trees are more drought-sensitive at their range cores than their dry range edges." (a global dendro study prepared for *Science*).

PRESS, NEWS, PODCASTS, AND BLOGS OF RESEARCH-RELATED WORK

"White Pines in Decline - Research Highlights 20 Years of Change." By Linda Much, National Parks Service, [Sequoia Kings Canyon National Parks](#), 2020

"Drought-Pathogen-Pest Interactions with Dr. Joan Dudney." Invited guest, [Water Talk](#) podcast, 2020

"New Study on Mortality Trends in Southern Sierra Nevada Sugar Pine and other White Pines." [The Sugar Pine Foundation Blog](#), 2020

"The tipping points at the heart of the climate crisis." [The Guardian](#), 2020

"Global heating – abrupt changes could bring interconnected tipping points." [Nuclear News](#), 2020

"The Sugar Pine Foundation partners with a new science advisor." [The Tahoe Daily Tribune](#), 2019

"The Big Picture: What Sustains Biodiversity." [NCEAS News and Features](#), 2019

"Alumna, postdoc awarded Smith Fellowship." [Environment Berkeley News](#), 2019

"Science Adventures to Help Curb Extinction." [Berkeley Graduate News](#), 2018

"Inspiring Legislators to Support Graduate Education." [Berkeley Graduate News](#), 2018

"Rethinking resilience-based management before it's too late." [Nature Berkeley News](#), 2018

"Graduate Student Joan Dudney Awarded Switzer Fellowship." [Nature Berkeley News](#), 2017

"Berkeley Selects Champion for UC-Wide Grad Slam!" [Berkeley Graduate News](#), 2017

"Ten Graduate Students selected for Outstanding GSI Award." [Environment Berkeley News](#)

"Understanding the Effects of Previous-Year Rainfall on Grasslands." [Environment Berkeley News](#), 2016

"Discovering something previously overlooked in annual grasslands." [Journal of Ecology Blog](#), 2016

PROFESSIONAL EXPERIENCE

David H. Smith Conservation Postdoctoral Fellow, University of California, Davis, 2019-2021

Co-Investigator, Species Status Assessment, U.S. Fish and Wildlife Service, 2018-2021

Graduate Teaching Assistant, Department of Environmental Science, Policy and Management, University of California, Berkeley

Director of Restoration, Acterra, Palo Alto, CA, 2009-2013

Peace Corps Volunteer, Environmental Education, Aguaity, Paraguay, 2006-2008

INVITED SYNTHESIS WORKING GROUPS AND WORKING GROUPS

National Center for Ecological Analysis and Synthesis (NCEAS), Ecosystem transitions: increased variability and regime shifts, led by Cristy Portales-Reyes and Anny Chung (2021-2022)

National Center for Ecological Analysis and Synthesis (NCEAS), Future of Synthesis in Science Workshop, Jan-Feb 2021

National Center for Ecological Analysis and Synthesis (NCEAS), Synchrony LTER, led by Lauren Hallett, Katharine Suding, and Daniel Reuman, 2017-2019

Bio-novelty and Restoration Workshop, led by Eric Higgs and John Volpe, Vancouver, BC, 2019

PROFESSIONAL DEI AND OUTREACH TRAININGS

JEDI training through the The Raben Group, Smith Fellowship, Hawai'i, 2019

Media training with Intermedia Communications, Smith Fellowship, Washington DC, 2019

DEI training through the Switzer Fellowship, Point Reyes, 2018

COMPASS science communication and advocacy workshop, Washington DC, 2017

DEI training through the Switzer Fellowship, Point Reyes, 2017

Culture and diversity training through the Peace Corps, 2006

Diversity training at Occidental College for Resident Advisors, 2004 & 2005

INVITED TALKS/SEMINARS

2021

Seminar speaker: Managing multiple aspects of forest resilience and drought impacts on subalpine systems. Seminar series, California Botanical Society.

Invited speaker: The importance of the energy-water limitation threshold in drought impact studies. Invited talk for the *North American Forest Ecology Workshop*.

2020

Seminar speaker: "Predicting the unpredictable: Nonlinear climate change impacts on infectious tree disease." Seminar series, Chicago Botanic Garden.

Guest lecturer: "Ecosystem management in an era of rapid change." iNaturalist training, Palo Alto. Canceled due to COVID-19.

Invited speaker: "Dynamics and drivers of change in WPBR incidence and severity over a 20 year period in the S. Sierra Nevada." H5III Conference, Canceled due to COVID-19.

Guest lecturer: "Pest and pathogens outbreaks under climate change." University of California, Santa Barbara.

2019

Seminar speaker: "Conifers, Blister Rust and Beetles." Conservation and Restoration Ecology Seminar Series, University of California, Santa Barbara

Guest lecturer: "Ecosystem management in an era of rapid change." iNaturalist training, Palo Alto.

Guest lecturer: "Sustainable natural resource management in an era of rapid change." University of California, Santa Barbara.

2018

Keynote speaker: "The importance of outreach and diversity in academia." University of California, Berkeley, Grad Slam Competition.

Inspire speaker: "Resilience management, novelty, and state changes." Ecological Society of America Annual Symposium. New Orleans, Critical Transitions Inspire Session.

Seminar speaker: "Tracking a tree killer: blister rust and the future of white pines in the southern Sierra Nevada." Occidental College.

2017

Seminar speaker: "The future of white pines in the southern Sierra Nevada." Department of Environmental Science, Policy and Management, UC Berkeley, Symposium.

Ignite speaker: "Lagging behind: have we overlooked precipitation lags in annual grasslands?" Ecological Society of America, *Bloom and Bust Ignite Session*.

ORGANIZED SPECIAL SESSIONS

"Causal inference in global change studies: new approaches and emerging opportunities." Co-organizing an oral session with Laura Dee for ESA, 2021.

"From genes to tree-rings: characterizing long-term climate drivers and extreme drought effects on Sierra Nevada whitebark pine." Organized special session for the H5III Conference, 2021.

PRESENTATIONS/SCIENTIFIC REPORTS/POSTERS

Dudney, J. 2020. "The importance of the water-energy limitation threshold in drought impact studies." Oral presentation: *AGU Fall Meeting*,

Dudney, J. "Nonlinear climate change impacts on infectious disease." 2020. Presented talk: *Ecological Society of America Annual Symposium*.

Heilmayr, R., J. Dudney, F. Moore. 2020. "Cutting to the core: measuring variable drought sensitivity in tree species across their climatic niches." Oral presentation: *AGU Fall Meeting*.

Cribbs, J., **J. Dudney**, J. Nesmith, P. van Mantgem. 2020. "Using stable isotope analysis and foliar growth measurements to understand physiological responses to drought in whitebark pine." Mentee's poster: *Ecological Society of America Annual Symposium*.

Dudney, J. 2019. "Interacting effects of drivers of tree mortality decline across an altitudinal stress gradient." Presented talk: *Ecological Society of America Annual Symposium*. Louisville, KY.

Dudney, J., S. Stephens, R. York, C. Tubbesing, J. Battles. 2019. "Invasions in the Sierra Nevada: forest management impacts on understory species." Presented talk: *North American Forest Ecology Workshop*. Flagstaff, AZ.

- Dudney, A.** Das, J. Nesmith, N. Stephenson, J. Battles. 2019. "The future of white pines in the southern Sierra Nevada" 2019. Presented talk: *North American Forest Ecology Workshop*. Flagstaff, AZ.
- Dudney, J.** 2018. "Outlook for white pines in the southern Sierra: results from a long-term survey of blister rust and beetles." Presented talk: *Ecological Society of America Annual Symposium*. New Orleans, LA.
- Dudney, J.,** N. Stephenson, A. Das, J. Nesmith, and J. Battles. 2018. "Assessing the severity and rate of spread of an invasive forest pathogen: a foundation for management response in the Sierra Nevada national parks." Available through the USGS.
- Cribbs, J., **J. Dudney,** N. Stephenson, A. Das, J. Nesmith, and J. Battles. 2017. "Tracking a tree killer: results from a long-term survey of blister rust in the Southern Sierra." Mentee's poster: *Ecological Society of America Annual Symposium*. Portland, OR.
- Dudney, J.** 2017. "The future of white pines in the southern Sierra Nevada." Presented talk at *SEKI Science Symposium*. Three Rivers, CA.
- Bulaon, B., N. Stephenson, A. Das, P. Moore, **J. C. Dudney,** J. J. Battles, M. Cahill. 2015. "A case study in collaboration: assessing the severity and rate of spread of an invasive forest pathogen." Presented poster: *Science for Parks and Parks for Science*. Berkeley, CA.
- Dudney, J.** 2015. "Managing California's rangelands: implications of weather patterns on plant composition." Presented talk: *Cal-IPC Symposium*. Chico, CA.
- Dudney, J.** 2014. "Precipitation effects on plant composition in California rangelands." Presented poster at: *99th ESA Annual Meeting*. Sacramento, CA.
- Dudney, J.** 2012. "Carbon sequestration and habitat restoration." Invited talk: Bay Area Climate Corps, CA.
- Dudney, J.** 2011. "Mapping, monitoring and removing medusahead." Presented poster at: *Cal-IPC Symposium*. Tahoe City, CA.
- Dudney, J.** 2011. "Restoration in Palo Alto Open Space." Invited talk: City of Palo Alto Council Meeting, CA.

TEACHING/MENTORING EXPERIENCE

- Mentor, Strategies for Ecology Education, Diversity and Sustainability (SEEDS), ESA 2020
- Mentor, Society for Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS), 2019 & 2020.
- Mentor, Strategies for Ecology Education, Diversity and Sustainability (SEEDS), ESA 2019
- Forest Sustainability Seminar, Santa Barbara, 2018
Invited to teach a class on the history of sustainable forest management in the US
- Biology Field Course, Occidental College, 2018

Taught field-based experimental design to undergraduate students
Developed curriculum and taught a course on forest health in Sequoia National Park

Americans and the Global Forest, University of California, Berkeley, 2015
Graduate student instructor
Guest lecturer: Adaptive Management and Climate Change

Restoration Internship Program, Palo Alto, CA, 2009-2013
Mentored undergraduate and master's students in adaptive management field research and restoration

Biology, Universidad de Eusebio Ayala, 2007, Paraguay
Developed curriculum and taught a biology class in Spanish and Guarani

Ecology, Occidental College, 2005, Teaching Assistant

RESEARCH EXPERIENCE

2018-2021

Species Status Assessment, U.S. Fish and Wildlife Service, Sierra Nevada-focus

2015-2018

Western Ecological Research Center (USGS), Sequoia and Kings Canyon National Parks
Blister rust project manager, led crews of up to eight people on wilderness research trips

2014

Blodgett Forest Research Station, Georgetown, CA
Managed field crew to investigate understory species' responses to forest management

2013

Niwot Ridge Long-Term Ecological Research Site, CO
Sampled vegetation in long-term monitoring ITEX (International Tundra Experiment) plots

2012

Jasper Ridge Biological Preserve, Stanford, CA
Assisted with field surveys on native ants and invasive Argentine ants

2005

Awarded the Richter Grant to study indigenous women's roles in conservation, Belize

2003-2004

Awarded research grant and collaborated with TNC restoration ecologists to research the effects of feral pigs on invertebrate populations, Santa Cruz Island

PROFESSIONAL SERVICE/OUTREACH

Science Advisor, Sugar Pine Foundation, 2019-present, [Announcement](#)

Science Advisor, Grassroots Ecology, 2019-present

Diversity Committee, Society for Conservation Biology, 2019-present

Diversity Committee, Graduate Group in Ecology, University of California, Davis, 2019-present

ESA Braun Award Judge, 2017

“Saving the Preserve.” 2013. *Verde Magazine* featured my mentee’s restoration project.

<http://verdemagazine.com/saving-the-preserve>

“Acterra Stewardship and Habitat Tracker Programs.” 2013. Developed a program for youth that was featured in Microsoft Bay Area video,

<https://www.youtube.com/watch?v=O4fwyQxmkJ4>

“Field Work: offering youth a natural way to learn and lead.” 2013. *Catalyst* of Microsoft spotlighted my youth program. <http://catalyst.microsoftbayarea.com/stories/field-work/>

Member of the Santa Clara County Weed Management Area, 2010-2012

Reviewer: *Ecology*, *Ecosphere*, *Journal of Plant Ecology*, *Plant Ecology*, *Journal of Vegetation Science*, *Plants and People*, *Trends in Plant Science*

LANGUAGES

Spanish (fluent), Guarani (conversant)