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

S. Borelle, J. Koch, C. McDonough MacKenzie, K. Ingeman, B. McGill, M. Lambert, A. Belasen, **J. Dudney**, C. Chang, A. Teffer, and G.Wu. "What does it mean to be for a place?" (In press, *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*.

IN REVIEW OR REVISION

Dudney, J., C. Willing, A. Das, J. Nesmith, N. Stephenson, A. Latimer, and J. Battles. "Climate change asymmetrically shifts infectious tree disease." (In revision, *Nature Communications*).

Nocco, M., C. M. MacKenzie, B. M. McGill, R. K. Tonietto, **J. Dudney**, M. C. Bletz, T. Young, S. E. Kuebbing. "Equity, mentorship, and, research productivity during the COVID-19 pandemic and beyond." (In revision, *Biological Conservation*).

Dudney, J., S. Stephens, R. York, C. Tubbesing, D. Foster, J. Battles. "Long-term forest management impacts on understory species and invasions." (In review, *Forest Ecology and Management*).

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 review, *Ecology*).

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 for resubmission).

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 implications for ecosystem stability." (In revision for resubmission).

BOOK CHAPTERS AND OPINION PIECES

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

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. "Plant Love Stories: Share your story and grow a movement." 2020. *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*.

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)

FELLOWSHIPS AND AWARDS (Total $399,200)

Fellowships and Science Awards

David H. Smith Conservation Postdoctoral Fellowship, 2019-2020 ($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 IN REVIEW (Total requested $225,000)

USFS Forest Health Protection Grant, Research Associate, 2021-2023 ($93,000)
NASA Early Career Investigator Program in Earth Science, Research Associate, 2021-2023 ($88,000)
National Geographic AI for Earth Grant, Research Associate, 2021-2022 ($44,000)

RESEARCH PUBLICATIONS IN PREPARATION (in draft form)

Dudney, J., P. van Mantgem, A. Latimer, Milano, L. A. Vandergast, J. Nesmith. "When extreme drought increases growth—the importance of the energy-water limitation threshold". (In prep).

Dudney, J., P. van Mantgem, A. Latimer. "Mechanisms of change in the subalpine: disentangling the relative importance of snowpack vs. temperature" (In prep).

Heilmayr, R., J. Dudney, F. Moore. "Trees are more drought-sensitive at their range cores than their dry range edges." (In prep).

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

Sheppard L., C. Portales Reyes, **J. Dudney**, L. Gherardi, L. Shoemaker, D. Reuman, K. Kottingham, K. Suding, L. Hallett. "Community synchrony, uneven-ness, and compensation modify the portfolio effect of grassland species diversity." (In prep).

Volpe, J., E. Higgs, R. Hobbs, **J. Dudney**, … S. Murphy. "Bionovelty in restoration." (in prep).

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

"Drought-Pathogen-Pest Interactions with Dr. Joan Dudney." Invited guest, Water Talk podcast, 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 (submitted proposal)

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-present

INVITED TALKS/SEMINARS

2020

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

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

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.

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

"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, 2020. Canceled due to COVID-19.

PRESENTATIONS/SCIENTIFIC REPORTS/POSTERS

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

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

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

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

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

Dudney, A. Das, J. Nesmith, N. Stephenson, J. Battles. "The future of white pines in the southern Sierra Nevada" 2019. Presented talk: *North American Forest Ecology Workshop.* Flagstaff, AZ.

Dudney, J. "Outlook for white pines in the southern Sierra: results from a long-term survey of blister rust and beetles." 2018. 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** presented at *Ecological Society of America Annual Symposium*. Portland, OR.

Dudney, J. 2016. "The future of white pines in the southern Sierra Nevada." Presented talk: *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 in Sequoia and Kings Canyon National Parks." Poster presented at: *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 at: *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*

SKILLS

Languages: Spanish (fluent), Guarani (conversant), R (advanced), GIS and QGIS (advanced)