

BRIAN SMITHERS

111 HENDERSON WAY, BOZEMAN, MT 59715

BRIAN.SMITHERS@MONTANA.EDU ♦ 406-548-5200

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EDUCATION

- Ph.D. Ecology, (2017) University of California, Davis
Dissertation: Mechanisms of range shift in Great Basin sub-alpine forests
Committee: Malcolm North, Andrew Latimer, Constance Millar
- M.S. Tropical Biology (2003) James Cook University, Cairns
Thesis: Young provision in wedge-tailed shearwaters
Committee: Brad Congdon, Andrew Krockenberger
- B.S. Biology, *Magna cum laude* (1999) Loyola Marymount University
Minor: Biochemistry
- B.A. Theology, *Magna cum laude* (1999) Loyola Marymount University
Minors: Music, Theater

POST-DOCTORAL TRAINING

- University of California, Davis 2018
Forest vegetation response to climate change and fire regimes

RESEARCH EMPLOYMENT HISTORY

- Research Assistant Professor**, Montana State University, Bozeman, MT 2018 – present
Teach undergraduate and graduate courses in various topics in Ecology
Conduct research on physiological mechanisms of plant species range shifts
- Executive Director/Field Coordinator**, GLORIA Great Basin, Davis, CA 2016 – present
Oversee all operations of the organization to support alpine research
Coordinate fundraising operations
Coordinate citizen science volunteer involvement
Lead all aspects of data collection efforts with research teams in remote alpine locations
- Post-Doctoral Scholar**, University of California, Davis 2018
Conducted research on prescribed fire effects in previously naturally burned forest and on mechanisms of range shift in sub-alpine forests
Hired and supervised field crews
Prepared research for publication
Served as a mentor to undergraduate and graduate students
- Graduate Student**, University of California, Davis 2012-2017
Conducted research on mechanisms of species range shifts towards my Ph.D. in Ecology
Hired and supervised field crews in remote field operations
Lectured in undergraduate courses and taught lab/discussion sections as a TA
- Biological Technician**, Rocky Mountain Bird Observatory, Ft. Collins, CO 2012
Performed avian point counts throughout Wyoming and parts of Montana
Worked with local landowners and stakeholders to gain access to remote locations
Compiled and organized data

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- Marine bird and mammal technician**, Farallon Institute, Petaluma, CA 2012
Collected data on marine mammal and bird locations in the Eastern Pacific
- Wildlife Biologist**, Oregon Natural Diversity Database, Florence/Portland, OR 2003 – 2004
Collected population data on the Oregon population of the western snowy plover
Coordinated government agencies in conservation efforts
Updated the Oregon Sensitive Species list
- Graduate Student**, James Cook University, Cairns, Australia 2002 – 2003
Conducted research on young provisioning in wedge-tailed shearwaters
Taught General Ecology labs as a Teaching Assistant
- Wildlife Biologist**, North Carolina State University 2001
Banded and tracked red knots to study migratory timing on the eastern seaboard
Coordinated volunteers in banding red knots
- Research Assistant**, Loyola Marymount University, Los Angeles, CA 1996 – 1999
Analyzed geographic variation in songs of the green-tailed towhee
Studied nearshore marine benthic community turnover
Received the department's top award for field ecology

TEACHING EXPERIENCE

- Instructor**, Montana State University 2018 – present
Taught graduate, upper and lower division courses in Ecology such as Conservation Biology and Principles of Biological Diversity
Earned Center for Faculty Excellence Teaching Enhancement Certificate
Used instructional technology to enhance pedagogical technique
- Instructor**, University of California, Davis 2016
Taught undergraduate General Ecology
Integrated field data collection activities in a large (~150 students) class
- Middle/High School Science Teacher**, Open School, Portland, OR 2004 – 2009
Taught subjects at middle and high school levels including General Science, Alternative Energy, History, Spanish, and Social Studies topics
Served as an Advocate for a group of students to make sure social service needs were met
Named the ING National Unsung Hero for work in Alternative Energy curriculum development
- Teaching Assistant**, University of California, Davis 2012-2016
Led labs and discussion sections for the following courses: Principles of Ecology (graduate level), General Ecology, Introduction to Biology: Ecology and Evolution, and Introduction to Biology: Biodiversity
Created original curricula concerning reading and discussing scientific literature

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- Peace Corps Volunteer**, United States Peace Corps, Fiji Islands 2009-2011
Performed capacity building activities in local communities and lead workshops in: fisheries management, farm diversification, vegetable gardening, financial literacy, and HIV/AIDS education
Established the first Forest Reserve in the Lomaiviti province
Wrote a book on “backyard” gardening in Fiji that is used as a manual for Peace Corps volunteers throughout the region Pacific region
- Teaching Assistant**, James Cook University 2002
Taught lab sections of General Ecology
Overseeing student’s progress in data collection and analysis
- Teaching Assistant**, Loyola Marymount University 1996-1999
Biology of African Wildlife
Vertebrate Biology
Marine Ecology of Baja California
Intertidal Ecology
Principles of Ecology
General Chemistry

REFEREED PUBLICATIONS

- Smithers, BV**, MF Oldfather, MJ Koontz, J Nachlinger, J Bishop, C Bishop, S Sheth. 2019. Community turnover by composition and climate affinity across scales in an alpine system. *American Journal of Botany* 107:1-11.
- Smithers, BV**, Oldfather, MF. 2019. GLORIA Great Basin: Monitoring Long-Term Alpine Plant Community Response to Global Change *Mountain Views* 13:1.
- Smithers, BV**, Millar, CI, Latimer, AM, North, MP. 2018. Leap frog in slow motion: Divergent responses of tree species and life stages to climatic warming in Great Basin subalpine forests. *Global Change Biology* 24:2. DOI: 10.1111/gcb.13881.
- Smithers, BV**. 2017. Soil preferences in germination and survival of limber pine in the Great Basin White Mountains. *Forests* 11:8, DOI: 10.3390/f8110423
- Smithers, BV**. 2017. *Mechanisms of range shift in Great Basin sub-alpine forests* Doctoral dissertation. University of California, Davis.
- Congdon, BC, Krockenberger, AK, **Smithers BV**. 2005. Dual foraging and coordinated provisioning in a tropical Procellariiform, the wedge-tailed shearwater. *Marine Ecology Progress Series* 310: 293-301.
- Peck, DR. **BV Smithers**, AK Krockenberger, and BC Congdon. 2004. Sea surface temperature constrains wedge-tailed shearwater foraging success within breeding seasons. *Marine Ecology Progress Series* 281: 259-266.
- Smithers, BV**, DR Peck, AK Krockenberger, and BC Congdon. 2003. Elevated sea-surface temperature, reduced provisioning and reproductive failure of wedge-tailed shearwaters (*Puffinus pacificus*) in the southern Great Barrier Reef, Australia. *Marine and Freshwater Research* 54: 973-977.

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PUBLICATIONS IN REVIEW/PREP

Smithers, BV, North, MP. 2019. Germination and survival in limber pine and Great Basin bristlecone pine in the White Mountains, Great Basin, USA. *Forest Ecology and Management* (in review).

Smithers, BV, Bell, D. 2019. Drought effects on germination and survival of Great Basin sub-alpine forest tree seedlings. (in prep).

Boaz, B, **Smithers, BV**, Bruns, T. Interspecific interactions in species range expansion: ectomycorrhizal associations with treeline advance in bristlecone pine forests (in prep).

Smithers, BV, Maxwell, T, da Silva, L. Proximity effects on water use efficiency in Great Basin sub-alpine forests (in prep).

Mayo, M, **Smithers, BV**. Dispersal advantages in species range shifts: population structure differences in limber pine and Great Basin bristlecone pine forests of the Great Basin (in prep).

North, MP, **Smithers, BV**, Odland, M. Additive smoke deficit in Sierra Nevada airsheds as a result of fire suppression (in prep).

NON-REFEREED PUBLICATIONS

Oldfather, MF, J Nachlinger, **BV Smithers**. 2019. GLORIA 2019 Update. *The Midden: The Resource Management Newsletter of Great Basin National Park* 19:1.

Oldfather, MF, **BV Smithers**. "GLORIA White Mountains Master Site Update, Fall 2018." *White Mountains Research Center Newsletter*. Fall 2018.

Smithers, BV, CI Millar. "Playing Climate Change Leap-frog with Trees...in Very Slow Motion." *University of California Natural Reserve System Newsletter*. February 2018.

Smithers, BV. "Guest lecturing: CV gold and a pretty good time." *The Aggie Brickyard*. Summer 2017.

Smithers, BV. "Battle of the Pines." *The Aggie Brickyard*. Fall 2017.

Smithers, BV. "Playing Climate Change Leap-frog with Trees...in Very Slow Motion." *White Mountain Research Center Newsletter*. Fall 2017.

Smithers, BV. 2010. *Organic Gardening in Fiji*. Peace Corps, Fiji.

INVITED PRESENTATIONS

Mechanisms of range shifts in sub-alpine Great Basin forests. 2017. UC Davis Forest Biology Seminar Series. Davis, CA.

Tree species range shifts above treeline in the Great Basin and our disappearing alpine habitat. 2016. Nevada Native Plant Society. Reno, NV.

Tree species range shifts above treeline in the Great Basin and our disappearing alpine habitat. 2016. California Native Plant Society. Bishop, CA.

Organic gardening in Fiji. 2009, 2010, 2011. US Peace Corps, Fiji Pre-Service Training. Nausori, Fiji.

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Alternative fuel production and use. 2009. US Peace Corps, Fiji Early-Service Training. Nausori, Fiji.

Waste not, want not: making vegetable biofuel in the classroom. 2007. ING Annual Conference. Phoenix, AZ.

Waste not, want not: making vegetable biofuel in the classroom. 2006, 2007. NSTA National Conference. Dallas, TX. Anaheim, CA.

CONTRIBUTED PRESENTATIONS

Alpine plant community-climate relationships across elevation gradients in the White Mountains, California. 2018. CNPS Annual Meeting, Los Angeles, CA.

Fire disturbance-mediated effects on species range shifts in Great Basin sub-alpine forests. 2017. Davis Botanical Society Meeting. Davis, CA.

Upslope treeline shifts point to life stage climate envelope differences in Great Basin bristlecone pine forests. 2017. ESA Annual Meeting. Portland, OR.

Rapid demographic shifts at treeline in Great Basin sub-alpine forests. 2016. AGU Fall Meeting. San Francisco, CA.

Rapid demographic shifts at treeline in Great Basin bristlecone pine and limber pine forests. 2016. MtnClim. Leavenworth, WA.

Demographic shifts in Mt. Charleston pine establishment above treeline. 2016 Mount Charleston Science Symposium. Las Vegas, NV. *Invited Speaker.*

Climate change effects on treeline community dynamics in Basin and Range mountains. 2015. CNPS Conservation Conference. San Jose, CA.

Climate change effects on treeline dynamics in Basin and Range mountains. 2014. AGU Fall Meeting. San Francisco, CA.

Mechanisms of species range shift at treeline in bristlecone pine forests. 2014. Mountain Observatories. Reno, NV.

Mechanisms of treeline species range shift in bristlecone pine forests. 2014. ESA. Sacramento, CA.

El Niño-Southern Oscillation effects on young provisioning and chick growth in a tropical western Pacific seabird species, the Wedge-tailed shearwater. 2002. In 'BZoNQ'. Cairns, QLD.

Geographic variation in songs of the Green-tailed towhee. 1999. West Coast Conference of Undergraduate Research, UC Irvine, Irvine, CA.

Geographic variation in songs of the Green-tailed towhee. 1999. Loyola Marymount University Sigma Xi Research Conference, Los Angeles, CA. Biodiversity of the Marine Redondo Canyon. 1999. Loyola Marymount University Sigma Xi Research Conference, Los Angeles, CA.

Geographic variation in songs of the Green-tailed towhee. 1998. Southern California Conference of Undergraduate Research, Pasadena, CA.

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AWARDS AND HONORS

UC Davis Post-Doctoral Scholar, 2017
UC Dissertation Year Fellowship, 2016
CNPS Conference Best Student Talk, 2015
UC Davis Ecology Fellowship, 2013-2015
ING Unsung Heroes National Teaching Award, 2016
Toyota Tapestry Teaching Grant, 2005
Rotary Ambassadorial Scholarship, 2002
Loyola Marymount University Presidential Citation, 1999
Loyola Marymount University Seydoux Field Biology Award, 1998
Loyola Marymount University Raymunde McKay Service Award, 1998
Alpha Sigma Nu Induction, 1998
Sigma Xi Induction, 1998
Ebell of Los Angeles Scholarship, 1997
LA Philanthropic Scholarship, 1997
Pike Christopher Scholarship, 1997
Loyola Marymount University Fritz B. Burns Science Scholarship, 1994
Bret Harte High School Salutatorian, 1994

RESEARCH GRANTS

UC Davis Post-Doctoral Scholar, 2017	\$100,000
Davis Botanical Society Grant, 2016	\$1,800
UC Davis Plant Sciences GSR, 2016	\$96,686
NV Native Plant Society Grant, 2015	\$1,000
Mary Dedecker Botanical Grant, 2015-2016	\$1,940
Henry A Jastro Research Fellowship, 2014-2016	\$6,600
CA Native Plants Society Grant, 2013-2016	\$2,000
White Mountains Research Minigrant, 2012-2016	\$4,000
Toyota Tapestry Teaching Grant, 2005	\$20,000
Rotary Ambassadorial Scholarship, 2002	\$25,000
Ebell of Los Angeles Scholarship, 1997	\$1,000
LA Philanthropic Scholarship, 1997	\$1,000
Pike Christopher Scholarship, 1997	\$500

UNDERGRADUATE/GRADUATE MENTORING

Iris Allen, UC Davis undergraduate student	2014-2015
Jamey Wilcher, UC Davis undergraduate student	2015-2016
Asa Holland, UC Davis undergraduate student	2016-2017
Kaili Brande, UC Davis undergraduate student	2016
Lilia Mourier, UC Davis undergraduate student	2016
Dawson Bell, UC Davis undergraduate student	2016-2018
Sierra Kortge, UC Davis undergraduate student	2016
Maxwell Odland, UC Davis graduate student	2017-2019
Marshall Pierce, UC Davis graduate student	2019-
Franklin Alpogi, MSU undergraduate student	2018-2019

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ACADEMIC SERVICE

Current:

MSU Department of Ecology Assessment of Outcomes Committee

Reviewer:

USFS *Synthesis of Science to Inform Land Management within the NW Forest Plan Area*

USFS *Northeastern California Plateaus Bioregion Science Synthesis*

Canadian Journal of Forestry

Trends in Ecology and Evolution

AoB PLANTS

Forests

Recent Service:

MtnClim Conference Volunteer, 2016

Natural Areas Conference Planning Committee, 2016

CA Native Plant Society Conference Volunteer, 2015

UC Davis Graduate Group in Ecology Admissions Committee, 2014-2016

UC Davis Graduate Group in Ecology Odyssey Lecturer, 2014-2017

GLORIA California volunteer botanist, 2013-2016

White Mountains GLORIA public workshop leader, 2013-2016

Davis Society for Conservation Biology, 2014-2016

UC Davis Graduate Group in Ecology Odyssey TA, 2013

US Peace Corps Volunteer, Natural Resource Specialist, 2009-2011

International Medical Assistance (Mexico), Spanish translator, 2004

LANGUAGES: English, French, Spanish, Fijian

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REFERENCES

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