

CJ Fotheringham

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Curriculum Vitae

Education

Bachelor of Arts, Biology
Occidental College
12 May 1996

Master of Science, Biology
California State University, Los Angeles
12 June 1999

Ph.D., Biology
University of California, Los Angeles
December 2009

Positions

- 2016-current Fish and Wildlife Biologist—GS11, USFWS-Carlsbad, Listing an Recovery. Assess current science impact on special status species, produce various documents including listing rules, 90-day reports, five year reports, recovery plans and white papers for agency use. Liaise with public, other federal, state and local government agencies and other entities to accomplish conservation goals and address any issues or questions that may arise. Provide support as available to conservation partners. Supervisor: Bradd Bridges.
- 2007-2013 Research Ecologist--GS11, USGS-BRD Sequoia-Kings Canyon. Design and conduct studies into role of urban fuels in structure loss during catastrophic fires. Data collection and statistical analysis, mapping, report development, literature review, write papers for submission to scientific journals, oral presentation of results. Supervisor: Jon Keeley
- 2004-2016 Independent consultant. Focused, census and established protocol botanical surveys, ecological assessments, habitat monitoring, jurisdictional delineation, fuel and fire management planning.
- 2002-2004 Research Associate II. Post-fire recovery in Arizona and New Mexico Shrublands. National Science Foundation #0240353. Design and conduct studies into impacts of fire on bi-modal rainfall chaparral in Arizona and New Mexico. Data collection and statistical analysis, mapping, report development, literature review, write

- papers for submission to scientific journals, oral presentation of results. P.I. Dr. Jon E. Keeley, University of California, Los Angeles.
- 1999-2003 Graduate student and Teaching assistant. Lecturing, instruction in laboratory technique, including care and proper handling of materials and equipment, and explanation of theory. Supervision of independent study courses. Duties include assistance in experimental design, monitoring of progress, and instruction in necessary skills. Supervisor: Phil Rundel. University of California, Los Angeles.
- 1999 Field Researcher-GS11, USGS-BRD Sequoia-Kings Canyon. Study design and implementation, site selection, data collection, plant identification, supervision of field staff, coordination with various government and private entities, data analysis and interpretation. Oral and written presentation of results. Supervisor: Jon Keeley
- 1998 Research Associate II. The Effects of El Nino Rains on Desert Annual Plants. National Science Foundation #9810674. Study design and implementation, site selection, data collection, plant identification, supervision of field staff, coordination with various government and private entities, data analysis and interpretation. P.I. Dr. Philip Rundel University of California, Los Angeles.
- 1997-1999 Adjunct Teaching Staff, at California State University, Los Angeles. Lecturing, instruction in laboratory technique, including care and proper handling of materials and equipment, and explanation of theory. Supervision of independent study courses. Supervisor: Robert Nakamura (deceased)
- 1996-1997 Research Assistant. Ecology and distribution of two rare native California Plants, *Astragalus brauntonii* and *Pentachaeta lyonii*. Study design and implementation, site selection, data collection, plant identification, coordination with various government and private entities, data analysis and interpretation. Oral and written presentation of results. Metropolitan Department of Water and Power, California Fish and Game contract #FG5636R5. P.I. Dr. Jon Keeley, Occidental College
- 1995-1996 Research Assistant. Post-Fire Recovery of Coastal Sage and Chaparral following the wild-fires of 1993. Data collection, plant identification, coordination with various government and private entities, data analysis and interpretation. Oral and written presentation of results. Metropolitan Department of Water and Power, Environmental Research Division P.I. Dr. Jon Keeley, Occidental College
- 1993-1996 Work study research assistant and teaching assistant. Research duties included development of biochemical assays, microscopy and staining techniques, experimental design, and evaluation of results. Teaching assistant duties include occasional lecturing, instruction in laboratory technique, including care and proper handling of materials and equipment, and explanation of theory. Supervision of independent study courses. Duties include assistance in experimental design, monitoring of progress, and instruction in necessary skills. Supervisor: Jon Keeley

Awards

- 1993 Long Beach City College Life Science Scholar's Award. Long Beach City

- College, Life Science Scholar's committee.
 1993 Robert M. Patterson Award for Excellence in Botanical Research
 1995 Raymond E. Selle Memorial Award for outstanding member of the junior class.
 Occidental College Biology department Faculty.

Professional Memberships

- Ecological Society of America since 1994
 ISOMED (The International Society of Mediterranean Ecologists) since 1994
 Southern California Botanists since 1993
 California Native Plant Society since 1993

Fellowships

- 2003-2004 University of California Dissertation Year Fellowship. \$21,318
 2002-2003 University of California Regents Fellowship \$6000
 2002-2003 Vavra Biology Fellowship \$7732
 1999-2002 Science to Achieve Results (S.T.A.R.) Graduate Research Fellowship. \$102,000.
 1999-2002 National Science Foundation Graduate Research Fellowship. \$76,500. Declined.
 1994 Ford Fellowship for Undergraduate Research. Smoke stimulated Germination in California fire-endemics. \$3000.00
 1993 Monsanto Corporation Fellowship for Undergraduate Research. Localization of carbonic anhydrase in *Amblystegium riparium*, an aquatic moss. \$3000.00

Grants

- 1998 Creating a computer database by correlating remote sensing imagery with data from an ongoing, ground-monitored study. Southwest Parks and Monuments. \$4993.75
 1994 Post-fire environmental stimulation of germination in California chaparral. California Native Plant Society. \$500.00
 1994 Effects of herbivory on post-fire recovery in chaparral and coastal sage scrub. Hardman Foundation, Inc. \$750.00

Publications

- Keeley, JE, CJ Fotheringham, PW Rundel. 2012. Postfire chaparral regeneration under Mediterranean and non-Mediterranean climates. *Madroño* 59(3): 109-127.
- Keeley, JE, H Safford, CJ Fotheringham, J Franklin, M Moritz. 2009. The 2007 southern California wildfires: Lessons in complexity. *Journal of Forestry* 107:287-296
- Keeley, J.E., C.J. Fotheringham, and M. Baer-Keeley. 2006. Demographic patterns of postfire regeneration in mediterranean-climate shrublands of California. *Ecological Monographs* 76:235-255.

Keeley, J.E., C.D. Allen, J. Betancourt, G.W. Chong, C.J. Fotheringham, and H.D. Safford. 2006. A 21st century perspective on postfire seeding. *Journal of Forestry* 104(1):1-2.

Fotheringham, C. J. and Keeley, J.E. 2005. NO news is no new news- a response to Preston *et al.*. *Seed Science Research* 15:367-371.

Keeley, J.E., M. Baer-Keeley, and C.J. Fotheringham. 2005. Alien plant dynamics following fire in mediterranean-climate California shrublands. *Ecological Applications* 15:2109-2125

Keeley, J.E. and C.J. Fotheringham. 2006. Wildfire management on a human dominated landscape: California chaparral wildfires, pp. 69-75. In G. Wuerthner, Editor, *Wildfire ---A Century of Failed Forest Policy*. Island Press, Covelo, CA.

Keeley, J.E., C.J. Fotheringham, and M. Baer-Keeley. 2005. Determinants of postfire recovery and succession in mediterranean-climate shrublands of California. *Ecological Applications* 15:1515-1534

Keeley, J.E., C.J. Fotheringham, and M. Baer-Keeley. 2005. Factors affecting plant diversity during postfire recovery and succession of mediterranean-climate shrublands in California, USA. *Diversity and Distributions*. 11:525-537

Keeley, J.E. and C.J. Fotheringham. 2005. Plot shape effects on plant species diversity measurements. *Journal of Vegetation Science* 16:249-256.

Keeley, J.E. et C.J. Fotheringham. 2004. La prévention des risques et la lutte contre les incendies dans un paysage fortement marqué par la présence humaine: les incendies de chaparral californien. In *Les Feux de Forests dans les Regions a Climat Mediterranéen, Domaine du Rayol, Le Royol-Canadel, République Française*.

Keeley, J.E., C.J. Fotheringham, and M. A. Moritz. 2004. Lessons from the 2003 Wildfires in Southern California. *Journal of Forestry* 102(7):26-31.

Keeley, J.E. and C.J. Fotheringham. 2004. Lessons learned from the wildfires, pp. 112-122. In R.W. Halsey, *Fire, chaparral and survival in southern California*. Sunbelt Publications, El Cajon, California.

Keeley JE, Fotheringham CJ. 2003. Species-area relationships in Mediterranean-climate plant communities. *Journal of Biogeography* 30:1629-1657

Keeley, J.E., D. Lubin, and C.J. Fotheringham. 2003. Fire and grazing impacts on plant diversity and invasives in the southern Sierra Nevada. *Ecological Applications* 13:1355-1374

Keeley, J.E. and C.J. Fotheringham. 2003. Historical fire regime in southern California. *Fire*

Management Today 631:8-9

Keeley, J.E. and C.J. Fotheringham. 2002. Impact of past, present, and future fire regimes on North American Mediterranean shrublands, pp. 214-258. In T.T. Veblen, W.L. Baker, G. Montenegro, and T.W. Swetnam (eds), *Fire Regimes and Climatic Change in Temperate and Boreal Ecosystems of the Western Americans*. Springer-Verlag, New York.

Keeley, J.E. and C.J. Fotheringham. 2001. History and Management of Crown-Fire Ecosystems: a Summary and Response. *Conservation Biology* 15 (6), 1561-1567

Keeley, J.E. and C.J. Fotheringham. 2001. The historical role of fire in California shrublands. *Conservation Biology* 15 (6), 1536-1548

Keeley, J.E. and C.J. Fotheringham. 2000. Role of fire in regeneration from seed, pp. 311-330. In M. Fenner (ed) *Seeds: The Ecology of Regeneration in Plant Communities*. 2nd Edition. CAB International, Oxon, UK.

Keeley, J.E., M.B. Keeley, and C.J. Fotheringham (eds). 2000. *2nd Interface Between Ecology and Land Development in California*. U.S. Geological Survey, Open-File Report 00-62. 299 p.

Ne'eman, G., C.J. Fotheringham, and J.E. Keeley. 1999. Patch to landscape patterns and the effect of burned canopies on post-fire recruitment in a serotinus conifer. *Plant Ecology*. 135:235-242

Keeley, J.E., C.J. Fotheringham, M. Morais. 1999 Re-examining fire suppression impacts on brushland fire regimes. *Science*. 284:1829-1832.

Fotheringham, C. J. and J. E. Keeley. 1998. Ecology and Distribution of Braunton's milkvetch (*Astragalus brauntonii*) and Lyon's Pentachaeta (*Pentachaeta lyonii*). Final Report for California Department of Fish and Game contract #FG5636R5.

Keeley, J.E., G. Ne'eman, and C.J. Fotheringham. 1999. Immaturity risk in a fire-dependent pine. *Journal of Mediterranean Ecology*. 1:41-47.

Keeley, J.E. and C.J. Fotheringham. 1998. Mechanisms of smoke-induced germination in a post-fire chaparral annual. *Journal of Ecology*, 86:27-36.

Keeley, J.E. and C.J. Fotheringham. 1998 Smoke-induced seed germination in Californian chaparral. *Ecology*. 79:2320-2336

Keeley, J.E. and C.J. Fotheringham. 1997 Trace Gas Emissions and Smoke-Induced Seed Germination. *Science*. 276:1248-51.

Professional Consultation Reports:

- 2015 Annual mitigation monitoring report for incidental take permit No. 2081-2002-018-06. Tom Dodson & Associates (San Bernardino, CA). 36 Pages
- 2015 Oak Identity and mapping for Pine Spring Ranch, San Jacinto, CA. Jericho Systems (Redlands, CA). Report, Shape files and Geotagged photos.
- 2014 Cactus Wren Nest Census Survey of Division 1 SBVWCD. Jericho Systems (Redlands, CA). Shape files and Geotagged photos.
- 2014 Millard Canyon Biological and Conservation Assessment. Jericho Systems (Redlands, CA). 52 Pages
- 2014 Biological Resources Report for the Upper Shields Canyon Property Los Angeles County, California. 62 Pages
- 2013 2013 Annual mitigation monitoring report for incidental take permit No. 2081-2002-018-06. Tom Dodson & Associates (San Bernardino, CA). 36 Pages
- 2013 Review of Vegetation Treatment Program, California Board of Forestry. Endangered Habitats League.
- 2012 2012 Annual mitigation monitoring report for incidental take permit No. 2081-2002-018-06. Tom Dodson & Associates (San Bernardino, CA). 34 Pages
- 2011 2011 Annual mitigation monitoring report for incidental take permit No. 2081-2002-018-06. Tom Dodson & Associates (San Bernardino, CA). 33 Pages
- 2010 2010 Annual mitigation monitoring report for incidental take permit No. 2081-2002-018-06. Tom Dodson & Associates (San Bernardino, CA). 35 Pages
- 2009 2009 Annual mitigation monitoring report for incidental take permit No. 2081-2002-018-06. Tom Dodson & Associates (San Bernardino, CA). 33 Pages
- 2008 2008 Annual mitigation monitoring report for incidental take permit No. 2081-2002-018-06. Tom Dodson & Associates (San Bernardino, CA). 34 Pages
- 2007 2007 Annual mitigation monitoring report for incidental take permit No. 2081-2002-018-06. Tom Dodson & Associates (San Bernardino, CA). 34 Pages
- 2007 General biological assessment and jurisdictional delineation for Chicken Springs wash storm drain and street improvements between 2nd street and 4th street USGS – Yucaipa, Section 1, T2S, R2W, S.B.M.
- 2007 Mountain View Avenue Extension Botanical Report USGS –Redlands Quad, Unsectioned portion, T1S R3W
- 2007 Western Riverside County Multiple Species Habitat Conservation Plan Consistency Analysis for Industrial Condominiums/Facilities 7th Street and Johnson Avenue (S. G Street) Perris, CA (APN#S 310160050, 310160051, 310160052)
- 2007 Botanical Survey of Eagle Ridge Development Phases 4-7, Blue Jay, CA USGS – Harrison Mountain, T2N, R3W, Sections 20, S.B.M. Tract No. 15612 APN 0334-071-02, 0335-011-35, 0335-011-35
- 2007 Western Riverside County Multiple Species Habitat Conservation Plan Constraint Analysis for Woodhouse Road off San Timoteo Canyon, USGS –El Casco T2S, R2W S27 APN #413180030)
- 2007 Soil Summary and Botanical survey of Wilson Road extension between Milliken Avenue to east of the Day Creek channel, Rancho Cucamonga, CA
- 2007 Soil Summary and Botanical survey of Wilson Road extension between Milliken Avenue

- to east of the Day Creek channel, Rancho Cucamonga, CA
- 2007 General Biological Assessment (USGS – Forest Falls, Section 32, T2S R1W) APN 0325-021-01, -09, and -17
- 2007 Soil Summary and Botanical survey of of the Cajon Creek adjacent to Glen Helen Devore, CA
- 2006 Fire management plan, vegetation and fuel mapping for El Toro Marine base reserve. Nature Reserve of Orange County.
- 2006 Revision of Fire management plan and Fire mapping for Orange County NCCP/HCP. Nature Reserve of Orange County. On going.
- 2006 2006 annual mitigation monitoring report for incidental take permit No. 2081-2002-018-06 Tom Dodson & Associates (San Bernardino, CA). 33 Pages
- 2006 Botanical, Narrow Endemic, and Criteria Area Plant Species Survey of the Indian Mesa Property. Tom Dodson & Associates (San Bernardino, CA). 31 Pages.
- 2006 Jackson Ranch, Yucaipa General Botanical, Heritage Tree and Oak Survey. Tom Dodson & Associates (San Bernardino, CA). 30 Pages.
- 2006 Botanical, Narrow Endemic, and Criteria Area Plant Species Survey of the Stoneridge Property. Tom Dodson & Associates (San Bernardino, CA).. 31 Pages
- 2006 General Biological Habitat and Assessment for Burrowing Owl (*Speotyto cunicularia*), and Jurisdictional Delineation for 25580 Jefferson avenue, Murrieta, CA. 92562. Tom Dodson & Associates (San Bernardino, CA). 22 Pages.
- 2006 BBARWA Drying Pond Botanical Survey. Tom Dodson & Associates (San Bernardino, CA). 13 Pages
- 2006 Greenspot S-curve Botanical Survey. Tom Dodson & Associates (San Bernardino, CA).. 17 Pages.
- 2006 Botanical survey of parcel at end of Flicker road in Fawnskin, CA. Tom Dodson & Associates (San Bernardino, CA). 14 Pages
- 2006 Botanical Assessment of VVWRA Phases 1&2 Interceptor Upgrade Project. Tom Dodson & Associates (San Bernardino, CA). 41 Pages.
- 2006 Greenspot Bridge Botanical Survey. Tom Dodson & Associates (San Bernardino, CA). 17 Pages.
- 2006 Preliminary Observations of City of Laguna Beach Goat-mediated Fuel Modification Program and the Impacts to Aliso and Wood Canyons Wilderness Park and the NCCP Reserve. 24 Pages.
- 2005 A review of strategy pertaining to chaparral and fire in United States Forest Service Region 5 Land Management Plan. 12 December 2005 14 Pages.
- 2005 Grass Valley Creek Botanical Survey. 26 September 2005. 11 Pages.
- 2005 Survey For Rare Plant Species on Offered Parcel Involved in the Proposed Doble Land Exchange. Do It Right, Environmental (Lake Arrowhead, CA). 25 Pages.
- 2005 Survey For Rare Plant Species on Parcel Involved in the Proposed Doble Land Exchange. Do It Right, Environmental (Lake Arrowhead, CA). 29 Pages.
- 2005 Botanical Census and Protocol Survey of Cajon Pass from Keenbrook to Summit. Tom Dodson & Associates (San Bernardino, CA). 224 pages.
- 2005 Post-fire vegetation regrowth and sedimentation at Elliot Reserve. Do It Right, Environmental (Lake Arrowhead, CA). 133 pages

- 2004 Survey for listed plant species on Parcels involved in the proposed Doble land exchange. Do It Right, Environmental (Lake Arrowhead, CA). 9 Pages.

Solicited Talks

- 2003 Challenges of Managing Fires along the Urban Wildland Interface-Lessons from the Santa Monica Mountains, Los Angeles, California. 3rd International Wildland Fire Conference, Sydney Australia
- 2002 Evolutionary aspects of seed germination strategies. CEA-CREST symposia, California State University, Los Angeles
- 2000 International Society of Mediterranean Ecologists, MEDECOS VIII. Germination in Desert Annual Plants
- 1997 Southern California Botanists. Smoke Induced Germination.

Contributed Talks

- 2003 Sweeney-Granite Mountains 25th anniversary symposium. Studies in community ecology at the Granite Mountain Reserve
- 1999 California Association for Fire Ecology. Reconstructing the natural fire regime in California shrublands.
- 1999 California Association for Fire Ecology. Debunking the myth of fire suppression impacts on brushland fire regimes.
1998. California Botanical Society 18th Graduate Student Meeting. Anatomical characteristics of smoke-stimulated Chaparral Seeds.
- 1997 MEDECOS VIII International Conference. Species Richness, Scale and Postfire Succession in California Chaparral.
- 1997 MEDECOS VIII International Conference. Role of Trace Gas Emissions and Seed Anatomy of Smoke-Induced Germination of Chaparral Fire-Endemics.
- 1997 Ecological Society of America. Role of Trace Gas Emissions in Smoke-Induced Germination of a Postfire Annual.
- 1997 Ecological Society of America. Anatomy and uptake characteristics of Smoke-Induced Seeds.
- 1997 California Association for Fire Ecology. Post-fire germination patterns in chaparral seed backs.
- 1997 California Association for Fire Ecology. Post-fire successional changes in species diversity patterns of chaparral.
- 1996 California Botanical Society 16th Graduate Student Meeting. Smoke stimulated Germination in Chaparral Seeds.
- 1994 Southern California Conference on Undergraduate Research. Post-Burn Area Regeneration.
- 1993 Southern California Conference on Undergraduate Research. Localization of Intracellular Carbonic Anhydrase in *Amblystegium riparium* and the relationship to the C13 value.