

CARLOS DAVIDSON
CV

EDUCATION

Ph.D., Ecology, Conservation Ecology Emphasis Area. University of California, Davis. 2000. Dissertation: Spatial Patterns of California Amphibian Declines and Ecological Limits. Advisor: H. Bradley Shaffer.

Masters degree, Economics. University of California, Berkeley. 1990.

Bachelor's degree, Economics. University of California, Berkeley. 1982.

CURRENT POSITION

Professor. 2010-present. Environmental Studies Program. San Francisco State University. 1600 Holloway Ave., San Francisco CA 94132.

ACADEMIC POSITIONS

Program director/Program coordinator. 2005-2015. Environmental Studies Program. San Francisco State University. 1600 Holloway Ave., San Francisco CA 94132.

Associate Professor. 2005-2010. Environmental Studies Program. San Francisco State University. 1600 Holloway Ave., San Francisco CA 94132.

Assistant Professor. 2000 - 2005. Environmental Studies Department. California State University, Sacramento.

AWARDS AND HONORS

California State University System. Campus as a Living Laboratory grants. Course redesign: Student Research for Campus Water Efficiency Projects. \$15,439. AY 15-16.

Office for Research and Sponsored Projects, SF State. Individual investigator grants. Climatic refuges for declining amphibian populations. \$18,844, AY 12-13.

U.S. Fish and Wildlife Service. Impacts of a fungal pathogen, pesticides, and temperature on the cascades frog in the mountains of northern California. With Janet Foley, Sharon Lawler, Karen Pope, Nathan Nieto, Kevin Aceituno, PIs: Catherine Johnson and Jonah Piovia-Scott. \$395,122. AY 10-13.

Rose Foundation for Communities and the Environment. Effects of sub-lethal pesticide exposure on frog's immune response. \$20,000. 2005-2006.

State Water Quality Control Board, PRISM grant. Pesticide residues in frogs and amphibian declines in the California Cascades and Sierra Nevada. \$190,000. 2004-2006.

U.S. Environmental Protection Agency. STAR grant. Airborne pesticides and disease outbreaks in Sierra Nevada frogs. Roland Knapp co-PI. \$215,000. 2003-2004.

U.S. Fish and Wildlife Service. Historic pesticide use and California amphibian declines. Research grant. \$29,000. 2001-2002.

PUBLICATIONS

Refereed journal articles

- Vincent K, and Davidson C. 2015. The toxicity of glyphosate alone and glyphosate-surfactant mixtures to western toad (*Anaxyrus boreas*) tadpoles. *Environmental Toxicology and Chemistry*
- Boone MD, Bishop CA, Boswell LA, Brodman RD, Burger J, Davidson C, et al. 2014. Pesticide regulation amid the influence of industry. *Bioscience* 64:917-922.
- Davidson C, Williamson C, Vincent K, Simoni ch S, Yip KS, Hero JM, et al. 2013. Anuran population declines occur on an elevational gradient in the Western Hemisphere. *Herpetological Conservation and Biology* 8:503-518.
- Davidson, C., K. Stanley, and S. Simonich. 2012. Contaminant residues and declines of the Cascades frog (*Rana cascadae*) in the California Cascades, USA. *Environmental Toxicology and Chemistry* 31:1895-1902
- Grasso, R. L., R. M. Coleman, and C. Davidson. 2010. Palatability and antipredator response of Yosemite Toads (*Anaxyrus canorus*) to nonnative Brook Trout (*Salvelinus fontinalis*) in the Sierra Nevada mountains of California. *Copeia* **2010**: 457-462.
- Stanley, K., S. M. Simonich, D. Bradford, C. Davidson, and N. Tallent-Halsell. 2009. Comparison of pressurized liquid extraction and matrix solid phase dispersion for the measurement of semi-volatile organic compound accumulation in tadpoles. *Environmental Toxicology and Chemistry* **28**: 2038-2043.
- Davidson, C., M. Benard, H. B. Shaffer, J. Parker, C. O'Leary, J. M. Conlon, and L. A. Rollins-Smith. 2007. Effects of chytrid infection and carbaryl exposure on survival, growth and antimicrobial peptide defenses in foothill yellow-legged frogs (*Rana boylei*). *Environmental Science and Technology* 41:1771-1776.
- Davidson, C., and R. Knapp. 2007. Multiple stressors and amphibian declines: dual impacts of pesticides and fish on yellow-legged frogs. *Ecological Applications* 17:587-597.
- Conlon, J. M., A. al-Dhaheri, E. al-Mutawa, R. al-Kharrge, E. Ahmed, J. Kolodziejek, N. Nowotny, P. F. Nielsen, and C. Davidson. 2007. Peptide defenses of the Cascades frog *Rana cascadae*: implications for the evolutionary history of frogs of the Amerana species group. *Peptides* 28:1268-1274.
- Conlon, J. M., N. Al-Ghafari, L. Coquet, J. b. Leprince, d., T. Jouenne, H. Vaudry, and C. Davidson. 2006. Evidence from peptidomic analysis of skin secretions that the red-legged frogs, *Rana aurora draytonii* and *Rana aurora aurora*, are distinct species. *Peptides* **27**:1305 - 1312.
- Conlon, J. M., A. Sonnevend, C. Davidson, A. Demandi and T. Jouenne. 2005. Host-defense peptides isolated from the skin secretions of the Northern red-legged frog *Rana aurora aurora*. *Developmental and Comparative Immunology* 29:83-90.
- Davidson, C. 2004. Declining downwind: California amphibian population declines and historic pesticide use. *Ecological Applications*. **14**:1892-1902.
- Conlon, J. M., A. Sonnevend, C. Davidson, D. Smith and P. F. Nielsen. 2004. The ascaphins: a family of antimicrobial peptides from the skin secretions of the most primitive extant frog, *Ascaphus truei*. *Biochemical and Biophysical Research Communications* 320:170-175.
- Conlon, J. M., A. Sonnevend, M. Patel, C. Davidson, P. F. Nielsen, T. Pal and L. A. Rollins-Smith. 2003. Isolation of peptides of the bevinin-1 family with potent cadidacidal activity from the skin secretions of the frog *Rana boylei*. *Journal of Peptide Research* 62:207-213.
- Davidson, C., H. B. Shaffer, and M. R. Jennings. 2002. Spatial tests of the pesticide drift, habitat destruction, UV-B and climate change hypotheses for California amphibian declines. *Conservation Biology* 16: 1588-1601.
- Davidson, C., H. B. Shaffer, and M. R. Jennings. 2001. Declines of the California red-legged frog: climate, UV-B, habitat and pesticides hypotheses. *Ecological Applications* 11:464-479.

- Davidson, C. 2000. Economic growth and the environment: Alternatives to the limits paradigm. *BioScience* 50:433-440.
- Davidson, C. 1998. Issues in measuring landscape fragmentation. *Wildlife Society Bulletin*, 26:32-37.
- Shaffer, H. B., R. N. Fisher, and C. Davidson. 1998. The role of natural history collections in documenting species declines. *Trends and Reviews in Ecology and Evolution* 13:27-30.

Books

- Elliot, L., Gerhardt, C. and Davidson, C. 2008. *The Frogs and Toads of North America: A comprehensive guide to their identification, behavior and calls*. Houghton Mifflin, Boston

Audio Publications

- Davidson, C. 1995 first edition, 2014 Second edition. Audio field guide to frog and toad calls of the Pacific Coast. CD/Cassette and booklet. Cornell Laboratory of Ornithology, Ithaca, NY.
- Davidson, C. 1996. Audio field guide to the frog and toad calls of the Rocky Mountains and Southwest. CD/Cassette and booklet. Cornell Laboratory of Ornithology, Ithaca, NY.

Selected reports

- C. Davidson. 2009 Greenhouse Gas Emissions Inventory for Pacifica, California for 2005. Pacifica Climate Committee, pp 11.
- Fager, C. and C. Davidson. 2008 Greenhouse Gas Emissions Inventory 1990-2006 for San Francisco State University. Report prepared for the SF State Facilities Department for submission to the American University and College Presidents Climate Commitment, pp 22.

SELECTED PRESENTATIONS

- Climate refuges, climate and the decline of red and yellow legged frogs. Amphibian Diseases annual meeting, Arizona State University, Tempe AZ. 2014
- Anuran population declines occur on an elevational gradient in the Western Hemisphere. Amphibian Diseases annual meeting, Arizona State University, Tempe AZ. 2013
- Evaluating the pesticide hypothesis for amphibian population declines: Evidence from landscapes to laboratories. Invited symposium talk. World Congress of Herpetology. Vancouver, BC. 2012.
- Are contaminants contributing to the declines of Cascades Frogs in California? California Nevada Amphibian Populations Task Force, Bodega Bay, CA 2009.
- Agricultural pesticide drift and amphibians. Agriculture and Air Quality Conference, U.C. Davis, 2008.
- Pesticide use and California amphibian declines. Invited talk. Univ. of California, Davis, CA. 2008.
- Why are amphibian population declines concentrated in mountains? Invited talk. Sonoma State Univ. Rhonert Park, C A. 2008.
- Pesticide use and California amphibian declines. Invited talk. Miami University, Oxford, Ohio. 2006.
- Spatial associations between pesticide use and amphibian declines in California. Society for Conservation Biology. San Jose, CA 2006.

TEACHING EXPERIENCE

Professor. 2010-present. Environmental Studies Program. San Francisco State University. Courses taught: Applied Local Sustainability, Environmental Leadership and Organizing, Senior Seminar, Internship, Research Methods, and Introduction to Environmental Studies.

Associate Professor. 2005-2010. Environmental Studies Program. San Francisco State University. Taught Environmental Problems and Solutions, Senior Seminar, Internship, Research Methods, and Applied Local Sustainability courses.

Assistant Professor. 2000 - 2005. Environmental Studies Department. California State University, Sacramento. Taught Introduction to Environmental Science, Field Methods for Environmental Science, and Senior Thesis.

Invited instructor. January 2004. Graduate short-course for students from Latin and North America titled "Advanced training in amphibian population decline research." Costa Rica.

Instructor. Environmental Analysis, Spring 2000, U.C. Davis. Designed and taught the introductory course for majors in Department of Environmental Science and Policy.

PROFESSIONAL AND CIVIC ACTIVITIES

University Service

Member CHSS elections committee, 2015-2017

Chair Environmental Studies faculty search committee, Fall 2015

Director/Program Coordinator Environmental Studies Program, SF State. 2005-2015

Faculty advisor to the ECO-Students student organization SFSU 2005-07; 2011- present.

Member All University Sustainability Committee Fall 2008-2012.

Member Romberg Tiburón director search committee, SF State, 2007.

Reviewer for *Conservation Biology*, *Biological Conservation*, *Ecological Applications*, *Copeia*, *Oecologia*, *Diversity and Distributions*, and *Herpetological Review*.

Community Service

Alternate Advisory Board member, San Mateo County Community Choice Energy, 2015-2016

Co-founder and member Pacifica Climate Committee, Fall 08 - present

Chair, City of Pacifica Climate Action Plan Task Force, 2010 - 2012

Board member Pacifica Land Trust, 2007-2010