Curriculum Vitae

Diane M. Thomson

Professor of Biology and Environmental Science

W.M. Keck Science Department

Claremont McKenna, Pitzer and Scripps Colleges

925 N. Mills Ave.

Claremont, CA 91711

909-607-0029

dthomson@kecksci.claremont.edu

## Education

2001 Ph.D., Environmental Studies (Conservation Biology)

University of California, Santa Cruz

1995 M.Phil., Geography (Environment and Development)

University of Cambridge

1994 B.S., Ecology and Evolutionary Biology (summa cum laude)

University of Arizona

### Professional positions

2018-present Professor of Biology and Environmental Analysis

W.M. Keck Science Department

2011-2017 Associate Professor of Biology and Environmental Analysis

W. M. Keck Science Department

2004-2010 Assistant Professor of Biology

W. M. Keck Science Department

2002-2004 Postdoctoral research associate

University of California, Davis

Biological Invasions IGERT

(Interdisciplinary training grant: environmental science and policy)

2001-2002 Postdoctoral research associate

University of California, Davis

Conservation ecology (Mark Schwartz lab)

**Courses taught**

Introduction to R in Science (quarter credit class)

Advanced Data Analysis in Biology (half credit class)

Conservation Ecology and Management (for non-majors, with lab)

Transferable Stem Skills (TSS) for Educators: Methodology and Statistics (team-taught, Claremont Graduate University)

Applied Ecology and Conservation (with and without computer lab)

Advanced Topics in Environmental Biology (seminar class)

Biostatistics (with and without computer lab)

Field Biology (with lab)

Animal Behavior

Accelerated Integrated Science Sequence (introductory, team-taught)

Introductory Biology (Ecology and Evolution)

Introductory Biology lab (both Ecology and Evolution and Molecular and Cellular)

Great Ideas in Science (non-majors, with lab, team-taught)

**External Grants and Fellowships**

*Federal grants*

Guillams, C. Matt, K. Hasenstab-Lehman. K. McEachern and D.M. Thomson. 2021-2023. Using genetic data to guide conservation actions for the endangered single-island endemic plant *Castilleja mollis* Pennell (soft-leaved island paintbrush). U.S. Fish and Wildlife Service, Recovery Challenge Program. $98,319.

Thomson, D.M. and K. McEachern. NSF RUI. 2010-2015. Interacting effects of climate and invasive herbivores on island plant populations and communities: Santa Rosa Island as a model system. National Science Foundation. $274,359.

Meyer, W., L. McDade, J. Wright, D. Thomson and L. Neckar. 2013. Planning proposal: strengthening research and educational opportunities at the Robert J. Bernard field station. National Science Foundation. $23,521.

Thomson, D. and D.F. Doak. National Science Foundation Doctoral Dissertation Improvement Grant. 1999-2001.Critical tests of invasive species effects: impacts of the exotic European honey bee on native plant-pollinator interactions. $8500.

*Other funding*

Claremont Keck Grant, 2021-22 ($5000)

Pitzer College Faculty Research Grant, 2010 ($2000)

Claremont Keck Grant, 2010 ($1500)

Claremont Keck Grant, 2006-2009 ($14,200)

Claremont Keck Grant, 2006 ($500)

U.S. Geological Survey, 2006-2007 ($6500)

Claremont Mellon Grant, 2004-2005 ($5000)

*Fellowships*

National Science Foundation Graduate Research Fellowship, 1995-1998.

Regents’ Fellowship, University of California, 1995.

Churchill Scholar, Cambridge University, 1994-1995.

Flinn Foundation Scholarship, University of Arizona, 1990-1994.

## Submitted manuscripts

(\* undergraduate co-author; \*\*former undergraduate co-author, + corresponding author)

**Thomson, D.M.+**. Using demographic modeling to develop post-fire restoration strategies for a native shrub. In review, *Restoration Ecology*.

## Research publications

(\* undergraduate co-author; \*\*former undergraduate co-author, + corresponding author)

**Thomson, D.M.+**, A. Kathryn McEachern, Emily L. Schultz\*\*, Kenneth Niessen, Katherine A. Chess, Lauren F. Cole\*, Jennifer D. Phillips\*, Ruth Y. Oliver\*, and Acadia Tucker\*. 2022. Diverse native island flora shows rapid passive recovery after exotic herbivore removal on Santa Rosa Island, California. *Biological Invasions*. https://doi.org/10.1007/s10530-022-02735-4

**Thomson, D.M.+**, Wallace M. Meyer, and Isobel Whitcomb\*. 2021. Non-native plant removal and high rainfall years promote post-fire recovery of *Artemisia californica* in southern California sage scrub. *PLoS One* <https://doi.org/10.1371/journal.pone.0254398>

**Thomson, D.M.+** 2021. Novel data support model linking floral resources, honey beecompetition with bumble beepopulations in coastal scrub. *Journal of Pollination Ecology* 27(4): 47-56.

Funk, Jennifer L., Ingrid M. Parker, Erik T. Aschehoug, Wayne Dawson, S. Luke Flory, Carla M. D’Antonio, Virginia Matzek, **Diane M. Thomson**, and Justin Valliere. 2020. Keys to enhancing the value of invasion ecology research for management. *Biological Invasions* 22:2431–2445.

**Thomson, D.M.+**, Adin Bonapart\*, Rachel A. King\*, Emily L. Schultz\*\*, and Charlotte Startin\*. 2020. Long-term monitoring of a highly invaded annual grassland community through drought, before and after an unintentional fire. *Journal of Vegetation Science* 31: 307-318.

**Thomson, D.M. +**and M.L. Page\*\*. 2020. The importance of competition between insect pollinators in the Anthropocene. *Current Opinion in Insect Science* 36:55-62.

**Thomson, D.M. +**2019**.** Effects of long-term variation in pollinator abundance and diversity on reproduction of a generalist plant. *Journal of Ecology* 107: 491-502.

https://besjournals.onlinelibrary.wiley.com/doi/abs/10.1111/1365-2745.13055

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**Thomson, D.M. +**, Jonas M. Kwok\* and Emily L. Schultz\*\*. 2018. Extreme drought alters growth and interactions with exotic grasses, but not survival, for a California annual forb. *Plant Ecology* 219: 705-717.

**Thomson, D.M**. **+**, Rachel A. King\* and Emily L. Schultz\*\*. 2017. Between invaders and a risky place: exotic grasses alter demographic tradeoffs of native forb germination timing. *Ecosphere* 8 (10): Article e01987.

**Thomson. D.M**. **+**2016. Local *Bombus* decline linked to recovery of honey bees, drought effects on floral resources. *Ecology Letters* 19 (10): 1247-1255.

**Thomson, D.M**. **+**, Roxanne Cruz-de Hoyos\*, Keala Cummings\*, and Emily L. Schultz\*. 2016. Why are native annual abundances low in invaded grasslands? Testing the effects of competition and seed limitation. *Plant Ecology* 217: 431-442.

**Thomson, D.M. +**, Baythavong, B.S. and K.J. Rice. 2011. Serpentine invasions and the evolution of range limits. In S.P. Harrison and N. Rajakuruna, eds., *Serpentine: A model for Ecology and Evolution*. University of California Press. 201-219.

McEachern, K.A., **D.M. Thomson+**and K. Chess. 2009. Climate alters response of an endemic island plant to removal of invasive herbivores. *Ecological Applications* 19: 1574-1584.

Dishman, D. L.\*, **D.M. Thomson+**and N.J. Karnovsky. 2009. Does simple feeding

enrichment raise activity levels of captive ring-tailed lemurs (*Lemur catta*)? *Applied Animal Behaviour Science* 116: 88-95.

**Thomson, D.M. +**2007. Do source-sink dynamics promote the spread of an invasive grass into a novel habitat? *Ecology* 88: 3126-3134.

**Thomson, D.M. +** 2006. Detecting the effects of introduced species: a case study of competition between *Apis* and *Bombus*. *Oikos* 114: 407-418.

**Thomson, D.M. +**and M.W. Schwartz. 2006. Using population count data to assess

the effects of changing river flow on an endangered riparian plant. *Conservation Biology* 20: 1132-1142.

# **Thomson, D.M**.**+** 2005. Measuring the effects of invasive species on the demography of a rare endemic plant. *Biological Invasions* 7: 615-624.

**Thomson, D.M**. **+** 2005. Matrix models as a tool for understanding invasive plant and native plant interactions. *Conservation Biology* 19: 917-928.

Hastings, A., K. Cuddington, K. Davies, C. Dugaw, S. Elmendorf, A. Freestone, S.

Harrison, M. Holland, J. Lambrinos, B. Melbourne, C. Taylor, and **D. Thomson**. 2005. The spatial spread of invasions: new developments in theory and evidence. *Ecology Letters* 8: 91-101.

**Thomson, D.M**. **+** 2004. Competitive effects of the invasive European honey bee on the

reproductive success of a native bumble bee. *Ecology* 85: 458-470.

Brigham, C.A. and **D.M. Thomson**. 2003. Approaches to modeling population viability

in plants: an overview. Pages 145-171 in C.A. Brigham and M.W. Schwartz, eds., *Population Viability in Plants*. Springer-Verlag, Berlin.

Doak, D.F., **D.M. Thomson** and E.S. Jules. 2002. PVA for plants: understanding the

demographic consequences of seed banks for population health. Pages 312-337 in S. Beissinger and D. McCullough, eds., *Population Viability Analysis*.

Harding, E., E. Crone, B.D. Elderd, J. Hoekstra, A. McKerrow, J. Perrine, J.

Regetz, L. Rissler, A. Stanley, E. Walters, and **NCEAS HCP Working Group**.

2001. The scientific foundations of habitat conservation plans: A

quantitative assessment. *Conservation Biology*, 15: 488-500.

Morris, W.F., D.F. Doak, M. Groom, P. Kareiva, J. Fieburg, L. Gerber, P. Murphy, and

**D. Thomson**. 1999. *A Practical Handbook for Population Viability Analysis*. 80 pp. The Nature Conservancy Press, New York.

Doak, D.F., D. Bigger, E. Harding, M.A. Marvier, R. O’Malley, and **D. Thomson**. 1998.

The statistical inevitability of stability-diversity relationships in community ecology. *American Naturalist* 151: 264-276.

**Teaching publications**

**Thomson, D.M.** 2010. Basics of statistical analysis. In S. Gallagher and E.A. Wiley, eds., *Current Protocols in Essential Laboratory Techniques*, online edition*.* John Wiley & Sons, Hoboken, NJ.

## Examples of recent talks and presentations

(\* undergraduate co-author)

2023. Invited talk, University of California at Riverside.

**2023.** Smith, L.\*, K.A. McEachern, C.M. Guilliams, K.H. Lehman, D.M. Thomson. Water content differences between paintbrush species, *Castilleja* spp., on Santa Rosa Island. 10th California Islands Symposium, Ventura, CA.

2023. **Thomson, D.M**. Higher rainfall, non-native removal, and their interactions promote post-fire recovery in demographic modeling of the native shrub *Artemisia californica*. Ecological Society of America meeting, Portland, OR.

2022. **Thomson, D.M**. Fire in California scrub reduces honeybees but benefits *Bombus* and their preferred floral resources. Entomological Society of America meeting, invited symposium, online.

2022. **Thomson, D.M**. Fire leads to initial decline in feral honeybees, increase in native bumble bees and their preferred forage plants. International Union for the Study of Social Insects meeting, symposum organizer, San Diego, CA.

2020. **Thomson, D.M**. New data support model linking floral resource availability and Apis mellifera competition to local Bombus decline in coastal California. Ecological Society of America meeting, online.

2017. **Thomson, D.M**., Rachel A. King\* and Emily L. Schultz. Priority effects in invaded grasslands: quantifying fitness consequences of native annual germination timing. Ecological Society of America meeting, Portland, OR.

2017. Invited talk, University of California at Riverside.

2016. Invited talk, Loma Linda University.

2015. Invited talk, Rancho Santa Ana Botanic Garden.

2015. Invited talk, Harvey Mudd College.

2015. **Thomson, D.M.** Decline of a native *Bombus* population linked to recovery of feral *Apis mellifera*, drought effects on key food plant. Ecological Society of America meeting, Baltimore, MD.

2015. McEachern, K., **D. Thomson**, B. Thines and E. Medford\*. Is hybridization between an endemic and a widespread native plant cause for conservation concern? California Native Plant Society Conservation Conference. San Jose, CA.

2014. Kaheani, K.\*, E. Schultz, K. McEachern and **D.M. Thomson**. Optimizing survey strategies for a more efficient monitoring program. Ecological Society of America Meeting, Sacramento, CA.

2012. Cole, R.\*, L. Oliver\*, E.L. Schultz, K. McEachern and **D.M. Thomson**. California Channel Islands Symposium.

2012. Schultz, Emily L., J. Phillips\*, A. Tucker\*, K. McEachern, and **D.M. Thomson**. Effects of introduced herbivore removal on an island rare and endemic plant community. Ecological Society of America annual meeting, Portland, OR.

2012. Phillips, J.\*, A. Tucker\*, E.L. Schultz, K. McEachern and **D.M. Thomson**. Rare and endemic plants on Santa Rosa Island: recovering from herbivory. California Native Plant Society Meeting.

2011. \*Almeida, Leah, E. Schultz, K. McEachern and **D.M. Thomson**. Quantifying the effects of invasive pigs and climate variation on survivorship of an island endemic plant. Poster, Ecological Society of America annual meeting, Austin, TX.

2010. Invited talk, University of California at San Diego.

2010. Invited talk, Rancho Santa Ana Botanic Garden/Claremont Graduate University.

2010. McEachern, K. A., **D. M. Thomson** and K. Chess. Climate affects response of an island endemic plant to removal of invasive herbivores. Southern California Academy of Sciences meeting, Los Angeles, CA.

2009. **Thomson, D.M**., L. Almeida\*, K. Cummings\*, C. Gurney\*, A. Scott\*, and J. Shih\*. Tree demography and carbon fixation in a regenerating tropical secondary forest.

Ecological Society of America annual meeting, Albuquerque, NM.

2009. Schultz, E.\*, K. Cummings\*, R. Cruz\*, E. Hashimoto\*, L. Ng\*, and **D. Thomson**.

The roles of seed limitation and competition in limiting native annual forb abundance in an invaded California grassland. Poster, Ecological Society of America annual meeting, Albuquerque, NM.

2008. McEachern, K. A., **D. M. Thomson** and K. Chess. Climate affects response of an island endemic plant to removal of invasive herbivores. Ecological Society of America annual meeting, Milwaukee, WI.

2007. Sommers, P. L.\* and **Thomson, D.M.** The long and short of population viability analysis: sources of error in estimates of extinction risk for population count data. Poster, Ecological Society of America meeting, San Jose, CA.

**Departmental and college service**

(Only service since tenure listed)

*W. M. Keck Science Department*

W.M. Keck Science Executive Committee (2023-24)

RPT Committee (Spring 2023)

Environmental Analysis convener (chair) (2017-19)

Biology co-convener (chair) (spring 2016)

Biology convener (chair) (2013-14)

W.M. Keck Science Executive Committee (2008-10)

Member, search committee for tenure-track position in climate science (2023)

Chair, search committee for tenure-track position in ecology/evolution of disease (2017)

Chair, search committee for visiting professor in conservation ecology (spring 2016)

Chair, search committee for visiting professor in ecology (spring 2013)

W.M. Keck Science Review, Promotion and Tenure (RPT) (2011-12, 2012-13)

Chair, ad hoc committee, RPT (2011-12)

Chair, Discipline Review subcommittees (fall 2015, fall 2020)

*Claremont Colleges consortium*

Academic Planning Committee, Pitzer (2023-24)

Ad Hoc Member, lateral tenure review, Pitzer (spring 2023)

Institutional Review Board, Pitzer (2022-2023)

Appointment, Promotion and Tenure committee, CMC (2019-21)

Computer Science/Data Science committee, CMC (2018-19)

Campus Planning and Facilities committee, CMC (2018-19)

Writing committee, CMC (2017-18, Fall 2021)

Academic Affairs committee, CMC (2016-18)

Ad hoc committee on writing, CMC (2016-17)

Planning committee for Redford Conservancy, Pitzer College (fall 2015)

Teaching Load Assessment Committee, Scripps College (2014-15)

Bernard Field Station faculty advisory committee, 2011-12 (3 semesters, chair for 2)

Bernard Field Station interim faculty advisory committee (2010-11)

HHMI curriculum committee (2012-13) (3 semesters, chair for 1)

Member, search committee for computational biologist, HMC (fall 2012)

## Examples of professional service

Panel reviewer, NSF (2010, 2017)

External reviewer, NSF (2010, 2021)

Selection committee, Churchill Foundation Fellowship (2009)

Member, advisory committee for endangered species management at the Antioch Dunes National Wildlife Refuge (U.S. Fish and Wildlife Service, 2019-2021).

Journal reviewer:

*Journal of Pollination Ecology; Ecological Monographs; PNAS; Ecological Applications; Ecology; American Naturalist; Oecologia; Basic and Applied Ecology; American Journal of Botany; Biology Letters; Journal of Applied Ecology; Journal of Ecology; Journal of Insect Conservation; Acta Oecologia; Arctic, Alpine and Antarctic Research; Behavioral Ecology; Biological Conservation; Restoration Ecology; Australian Journal of Botany; Journal of the Torrey Botanical Society, Madroño; Agricultural and Forest Entomology; Proceedings of the California Islands Symposium; Population Ecology; Plant Ecology; Plos One; Ecosphere; Ecological Entomology; Apidologie;* *Conservation in a human-dominated world* (textbook).