

## **Curriculum Vitae: Daniel F. Doak**

### **Address:**

Daniel F. Doak, Environmental Studies Program, University of Colorado Boulder  
Attn 215 UCB, Boulder, CO 80309-0215

[daniel.doak@colorado.edu](mailto:daniel.doak@colorado.edu)

### **Education:**

Swarthmore College, Swarthmore, PA. B.A. with Distinction in Biology, Phi Beta Kappa.  
May 1983.

University of Washington, Department of Zoology, Seattle, WA. Ph.D. June 1990. P.  
Kareiva, Advisor.

### **Professional Appointments:**

Professor and Colorado Chair of Environmental Studies. Environmental Studies  
Program, Univ. of Colorado, Boulder, CO. 2012-present

Professor, Dept. Zoology and Physiology. University of Wyoming, Laramie, WY. 2007-  
2012

Professor, Ecology and Evolutionary Biology. University of California, Santa Cruz, July  
2002 to 2007

Associate Professor, Ecology and Evolutionary Biology. University of California, Santa  
Cruz, July 1999 to 2002

Associate Professor, Environmental Studies. University of California, Santa Cruz, July  
1997 to July 1999

Assistant Professor, Environmental Studies. University of California, Santa Cruz, July  
1991 to July 1997.

Lecturer. Winter 1991. Dept of Zoology, University of Washington.

Environmental Consultant. Sept. 1990 to Jan. 1991. Chambers Group, Santa Ana, CA.  
Data analysis and viability modeling of desert tortoise populations.

Lecturer. Winter 1990. Dept of Zoology, University of Washington

Lecturer. Summers 1990, 1989, 1988. San Francisco State University, Wildlands Studies  
Alaska Program.

Research Assistant. 1987-1990. University of Washington, Department of Zoology, with  
P. Kareiva. Modeling and data analysis, including development of search theory for  
conservation applications.

Research Assistant. 1982, 1983. University of Colorado, Institute of Arctic and Alpine  
Research, with P.J. Webber.

### **Awards and Honors:**

Ecological Society of America Fellow (elected in 2019)

Colorado Chair of Environmental Studies, 2012-present

Fellow, The California Academy of Sciences. Elected October, 2003.

Pepper-Giberson Endowed Chair in Environmental Studies, 1996-1999.

Excellence in Teaching Award, University of California, Santa Cruz, 1995.

Excellence in Teaching Award, Honorable Mention, University of California, Santa Cruz,  
2001.

## Publications:

(\*Graduate students in my lab, <sup>pd</sup>postdocs in my or other labs, <sup>og</sup>Graduates in other labs and universities with whom I have collaborated, <sup>ug</sup>undergraduates)

- Smith, A. B. et. al. (68 coauthors, including D. F. Doak). 2019. Alternatives to genetic affinity as a context for within-species response to climate. *Nature Climate Change* **9**:787–794.
- Chardon\*, N. I., S. Pironon, M. L. Peterson<sup>pd</sup>, and D. F. Doak. 2019. Incorporating intraspecific variation into species distribution models improves distribution predictions, but cannot predict species traits for a wide-spread plant species. *Ecography* <https://doi.org/10.1111/ecog.04630>.
- Louthan\*, A. L., E. Valencia, D. J. Martins, T. Guy, J. Goheen, T. Palmer, and D. F. Doak. 2019. Large mammals generate both top-down effects and extended trophic cascades, mediated through flowers, on floral visitor communities *Journal of Tropical Ecology* <https://doi.org/10.1017/S0266467419000142>
- Peterson<sup>pd</sup>, M., W.F. Morris, C. Linares, and D. F. Doak. 2019. Improving structured population models with more realistic representations of non-normal growth. *Methods in Ecology and Evolution*. doi:10.1111/2041-210X.13240
- Langendorf\*, R. and D. F. Doak. 2019. Can community structure causally determine dynamics of constituent species? A test using a host-parasite community. *American Naturalist*
- Chardon\*, N, I., C. Rixen, S. Wipf, and D. F. Doak. 2019. Human trampling disturbance exerts different ecological effects at contrasting elevational range limits. *Journal of Applied Ecology*. DOI: 10.1111/1365-2664.13384
- Zonana\*, D.M., J. M. Gee, E. S. Bridge, M. D. Breed, and D. F. Doak. 2019. Assortative behavior structures social networks in a quail hybrid zone. *American Naturalist*
- Waddle<sup>ug</sup>, E., L. Piedrahita<sup>ug</sup>, E. Hall<sup>ug</sup>, G. Kendziorski<sup>ug</sup>, W. F. Morris, M. L. Peterson<sup>pd</sup>, and D. F. Doak. 2019. Asynchrony in individual and subpopulation fecundity stabilizes reproductive output of an alpine plant. *Ecology* e02639. doi.org/10.1002/ecy.2639
- Montero-Serra<sup>og</sup>, I., J. Garrabou, D. F. Doak, J. Ledoux, and C. Linares. 2019. Marine protected areas enhance structural complexity but do not buffer the detrimental consequences of ocean warming for an overexploited precious coral. *J. Applied Ecology* 56:1063–1074. DOI: 10.1111/1365-2664.13321
- Dibner\*, R., M. L. Peterson<sup>pd</sup>, A. L. Louthan\*, and D.F. Doak. 2019. Comparative effects of multiple mechanisms conferring stability to isolated populations of a rare endemic plant. *Ecological Monographs* 89 <http://dx.doi.org/10.1002/ecm.1360>
- Peterson<sup>pd</sup>, M. L., D. F. Doak, and W. F. Morris. 2019. Incorporating local adaptation into forecasts of species' distribution and abundance under climate change. *Global Change Biology*. <http://dx.doi.org/10.1111/gcb.14562>
- Hall<sup>ug</sup>, E. S., L.R. Piedrahita<sup>ug</sup>, G. Kendziorski<sup>ug</sup>, E. Waddle<sup>ug</sup>, D. F. Doak, and M. L. Peterson<sup>pd</sup>. 2018. Climate and synchrony with conspecifics determine the effects

- of flowering phenology on reproductive success in *Silene acaulis*. *Arctic, Alpine, and Antarctic Research* 50. e1548866. DOI: 10.1080/15230430.2018.1548866
- Brodie, J. F., K. H. Redford, and D. F. Doak. 2018. Ecological Function Analysis: Incorporating species roles into conservation. *Trends in Ecology and Evolution* 33:840-850. DOI: 10.1016/j.tree.2018.08.013
- Louthan\*, A.M. and D.F. Doak. 2018. Measurement error of state variables creates substantial bias in results of demographic population models. *Ecology* 99: 2308–2317. <https://doi.org/10.1002/ecy.2455>
- Chardon\*, N., S. Wipf, C. Rixen, Christian, A. Beilstein, and D.F. Doak. 2018. Local trampling disturbance effects on alpine plant populations and communities: negative implications for climate change vulnerability. *Ecology and Evolution* 8:7921–7935. DOI: 10.1002/ece3.4276
- Montero-Serra<sup>og</sup>, I., C. Linares, D.F. Doak, J. B. Ledoux, and J. Garrabou. 2018. Strong linkages between depth, longevity and demographic stability across marine sessile species. *Proceedings of the Royal Society B*: DOI: 10.1098/rspb.2017.2688
- Bakker, V., M. Finkelstein, D. F. Doak, L. Young, E. VanderWerf, J. Arata, P. Sievert, C. Vanderlip. 2018. The albatross of assessing and managing risk for long-lived pelagic yet terrestrial breeding species. *Biological Conservation* 217:83-95. 285: 20172688. <http://dx.doi.org/10.1098/rspb.2017.2688>
- Louthan\*, A.M., R.M. Pringle, J.R. Goheen, T.M. Palmer, W.F. Morris, and D.F. Doak. 2017. Aridity weakens population-level effects of multiple species interactions in *Hibiscus meyeri*. *Proceedings of the National Academy of Sciences* doi:10.1073/pnas.1708436115 (early online publication)
- Peterson<sup>pd</sup>, M.L., D.F. Doak, and W.F. Morris. 2017. Both life history plasticity and local adaptation will shape range-wide responses to climate warming in the tundra plant *Silene acaulis*. *Global Change Biology* DOI: 10.1111/gcb.13990
- Dibner\*, R. M.E. Murphy, and D.F. Doak. 2017. Discrepancies in occupancy and abundance approaches to identifying and protecting habitat for at-risk species. *Ecology and Evolution* DOI: 10.1002/ece3.3131
- Irons, R.D.<sup>ug</sup>, A. Harding Scurr, A.P. Rose, J.C. Hagelin, T. Blake, and D.F. Doak. 2017. Wind and rain are the primary climate factors driving changing phenology of an aerial insectivore. *Proceedings of the Royal Society B* 284: 20170412. <http://dx.doi.org/10.1098/rspb.2017.0412>
- Genovart, M., D.F. Doak, J.M. Igual, S. Sponza, J. Kralj, and D. Oro. 2017. Varying demographic impacts of different fisheries on three Mediterranean seabird species. *Global Change Biology* DOI: 10.1111/gcb.13670
- Abbott, R., D.F. Doak, M. Peterson<sup>pd</sup>. 2017. Portfolio effects, climate change, and the persistence of small populations: analyses on the rare plant *Saussurea weberi*. *Ecology* 98:1071-1081
- Montero-Serra<sup>og</sup>, I, J. Garrabou, D. F. Doak, L. Figuerola, B. Hereu, J. Ledoux, and C. Linares. 2017. Accounting for life-history strategies and timescales in marine restoration. *Conservation Letters* DOI: 10.1111/conl.12341
- Keinath, D.A.\*, D.F. Doak, K.E. Hodges, L.R. Prugh, W. Fagan, C.H. Sekercioglu, S.H.M. Buchart, and M. Kauffman. 2017. A global analysis of traits predicting

species sensitivity to habitat fragmentation. *Global Ecology and Biogeography* 26:115-127

- Novak, M., J.D. Yeakel, A.E. Noble, D.F. Doak, M. Emmerson, J.A. Estes, U. Jacob, M.T. Tinker, and J.T. Wootton. 2016. Characterizing species interactions to understand press perturbations: What is the community matrix? *Annual Review of Ecology, Evolution, and Systematics* 47:409-432
- Winchell, E.W., R.S. Anderson, E.M. Lombardi, D.F. Doak. 2016 Gophers as geomorphic agents in the Colorado Front Range subalpine zone. *Geomorphology* 264:41-51
- Estes, J.A., A. Burdin, and D.F. Doak. 2016. Sea otters, kelp forests, and the extinction of Steller sea cow. *Proceedings of the National Academy of Sciences* 113:880-885. (published online in 2015)
- Louthan\*, A.M., D.F. Doak, and A.L. Angert. 2015. Where and when do species interactions set range limits? *Trends in Ecology and Evolution* 30:780-792.
- Villellas<sup>pd</sup>, J., D.F. Doak, M.B. García, and W.F. Morris. 2015. Demographic compensation among populations: what is it, how does it arise, and what are its implications? *Ecology Letters* 18: 1139–1152
- Yandow\*, L.H., A.D. Chalfoun, and D.F. Doak. 2015. Climate tolerances and habitat requirements jointly shape the elevational distribution of the American pika (*Ochotona princeps*) with implications for climate change effects. *PLOS One* 10(8):e0131082. doi:10.1371/journal.pone.0131082
- Dibner, R.\*, E. Lombardi, and D.F. Doak. 2015. An ecological engineer maintains consistent spatial patterning, with implications for community-wide effects. *Ecosphere* 6:art151. <http://dx.doi.org/10.1890/ES14-00415.1>
- Pardo<sup>pd</sup>, I., D.F. Doak, R. García-González, D. Gómez, M.B. García. 2015. Long-term response of plant communities to herbivore exclusion at high elevation grasslands. *Biodiversity and Conservation* 24: 3033–3047
- Doak D.F., Bakker, V. J., Goldstein, B. E., and Hale, B. 2015. What is the future of conservation? In G. Wuerthner, E. Crist & T. Butler (Eds.), *Protecting the Wild: Parks and Wilderness, the Foundation for Conservation* (pp. 27-35). San Francisco: Foundation for Deep Ecology. [reprint of a slightly modified version of Doak et al. 2014]
- Raventós, J., E. González, E. Mújica, and D.F. Doak. 2015. Population viability analysis of the epiphytic orchid *Dendrophylax lindenii*. *Biotropica* 47: 179–189
- Doak, D.F., G.K. Himes Boor, V.J. Bakker, W.F. Morris, A. Louthan\*, S.A. Morrison, A. Stanley, and L. Crowder. 2015. Recommendations for Improving Recovery Criteria under the US Endangered Species Act. *Bioscience* 65:189-99.
- Pironon, S.<sup>og</sup>, J. Villellas<sup>pd</sup>, W.F. Morris, D.F. Doak, and M.B. García. 2014. Do geographic, climatic or historical ranges differentiate the performance of central versus peripheral populations? *Global Ecology and Biogeography*. doi: 10.1111/geb.12263

- Doak, D.F. and K. Cutler\*. 2014. Van Manen et al. doth protest too much: new analyses of the Yellowstone Grizzly population confirm the need to reevaluate past population trends. *Conservation Letters* 7:332–333.
- Doak, D.F., V.J. Bakker, B.E. Goldstein, and B. Hale. 2014. Moving forward with effective goals and methods for conservation: a reply to Marvier and Kareiva. *Trends in Ecology and Evolution* 29:132-133.
- Doak, D.F., and W.F. Morris. 2014. Life and Times of Alaska's Tundra Plants: How Long Do They Live, and How Are They Responding to Changing Climate? *Alaska Park Science* 12(1).  
:http://www.nps.gov/akso/nature/science/ak\_park\_science/volume\_12\_issue\_1.cfm
- Louthan\*, A.M., D.F. Doak, J.R. Goheen, T.M. Palmer and R.M. Pringle. 2014. Mechanisms of plant – plant interactions: concealment from herbivores is more important than abiotic-stress mediation in an African savannah. *Proceedings of the Royal Society B*. B 281:20132647. <http://dx.doi.org/10.1098/rspb.2013.2647>
- Loso\*, M., D.F. Doak, and R. Anderson. 2014. Lichenometric dating of Little Ice Age glacier moraines using explicit demographic models of lichen colonization, growth, and survival. *Geografiska Annaler: Series A, Physical Geography* 96:21-41
- Doak, D.F., V.J. Bakker, B.E. Goldstein, and B. Hale. 2013. What is the future of conservation? *Trends in Ecology and Evolution* 29:77-81.
- Crone, E.E., M. Ellis, A. Stanley, W.F. Morris, T. Bell, P. Bierzychudek, D.F. Doak, J. Ehrlén, T. Kaye, T. Knight, P. Lesica, E. Menges, G. Oostermeijer, P. Quintana-Ascencio, T. Valverde, T. Ticktin, and J. Williams. 2013. Ability of Matrix Models to Explain the Past and Predict the Future of Plant Populations. *Conservation Biology* 27:968-978.
- Doak, D.F. and K. Cutler\*. 2013. Re-Evaluating evidence for past population trends and predicted dynamics of Yellowstone grizzly bears. *Conservation Letters* *early view*.
- Louthan\*, A., D.F. Doak, J.R. Goheen, T.M. Palmer, and R.M. Pringle. 2013. Climatic stress mediates the impacts of herbivory on plant population structure and components of individual fitness. *Journal of Ecology* 101:1074-1083.
- Doak, D.F., V.J. Bakker<sup>pd</sup>, and W. Vickers. 2013. Assessing alternative strategies to minimize disease threats to an endangered carnivore using population viability criteria. *Conservation Biology* 27:303-314.
- Brodie<sup>pd</sup>, J.F., E.S. Post, and D.F. Doak (editors). 2012. *Climate Change and Wildlife Conservation*. University of Chicago Press.
- Doak, D.F., J.F. Brodie<sup>pd</sup>, and E. Post. 2012. What to expect, and how to plan for, wildlife conservation in the face of climate change. Last chapter in: Brodie<sup>pd</sup>, J.F., E.S. Post, and D.F. Doak (editors). 2010. *Climate change and wildlife conservation*. University of Chicago Press.
- Finkelstein<sup>pd</sup>, M., D.F. Doak, D. George, J. Grantham, J. Burnett, J. Brandt, and D. Smith. 2012. The deceptive recovery of a critically endangered species: Lead poisoning and the California condor. *Proceedings of the National Academy of Sciences* 109(28):11449-54.

- Shriver<sup>ug</sup>, R.K., K. Cutler<sup>\*</sup>, and D.F. Doak. 2012. Comparative demography of an epiphytic lichen: support for general life history patterns and solutions to common problems in demographic parameter estimation. *Oecologia* 170:137-46.
- Ellis, M.M., J. L. Williams, P. Lesica, T.J. Bell, P. Bierzychudek, M. Bowles, E.E. Crone, D.F. Doak, J. Ehrlén, A. Ellis-Adam, K. McEachern, R. Ganesan, P. Latham, S. Luijten, T.N. Kaye, T.M. Knight, E.S. Menges, W.F. Morris, H. den Nijs, G. Oostermeijer, P.F. Quintana-Ascencio, J.S. Shelly, A. Stanley, A. Thorpe, T. Ticktin, T. Valverde, and C.W. Weekley. 2012. Matrix population models from 20 studies of perennial plant populations. *Ecology* 93:951. <http://dx.doi.org/10.1890/11-1052.1>
- Morrison, S.A., T.S. Sillett, C.K. Ghalambor, J.W. Fitzpatrick, D.M. Graber, V.J. Bakker, R. Bowman, C.T. Collins, P.W. Collins, K.S. Delaney, D.F. Doak, W.D. Koenig, L. Laughrin, A.A. Lieberman, J.M. Marzluff, M.D. Reynolds, J.M. Scott, J.A. Stallcup, W. Vickers, W.M. Boyce. 2011. Proactive Conservation Management of an Island-Endemic Bird Species in the Face of Global Change. *Bioscience* 61:1013-1021.
- Monson<sup>og</sup>, D.H., D.F. Doak, B.E. Ballachey, and J.L. Bodkin. 2011. Could residual oil from the *Exxon Valdez* spill create a long-term population “sink” for sea otters in Alaska? *Ecological Applications* 21:2917-2932.
- MacLean<sup>og</sup>, J.E., J.R. Goheen, D.F. Doak, T.M. Palmer, and T.P. Young. 2011. Cryptic herbivores mediate the strength and form of ungulate impacts on a long-lived savanna tree. *Ecology* 92:1626-1636.
- Conway-Cranos<sup>og</sup>, L.L. and D.F. Doak. 2011. Sampling errors create bias in Markov models for community dynamics: what is the problem and a method for its solution. *Oecologia* 167:199-207
- Novak<sup>og</sup>, M., J.T. Wootton, D.F. Doak, M. Emmerson, J.A. Estes, M.T. Tinker. 2011. Predicting community responses to perturbations in the face of imperfect knowledge and network complexity. *Ecology (Concepts and Synthesis section)* 92:836-846.
- Wolf<sup>og</sup>, S.G., M.A. Snyder, W.J. Sydeman, D.F. Doak, and D.A. Croll. 2010. Predicting population consequences of ocean climate change for an ecosystem sentinel, the seabird Cassin’s auklet. *Global Change Biology* 16:1923-1935.
- Finkelstein<sup>pd</sup>, M. E., D.F. Doak, M. Nakagawa<sup>ug</sup>, P.R. Sievert, and J. Klavitter. 2010. Assessment of demographic risk factors and management priorities: impacts on juveniles substantially affect population viability of a long-lived seabird. *Animal Conservation* 13:148-156.
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- Linares<sup>og</sup>, C., and D.F. Doak. 2010. Forecasting the combined effects of disparate disturbances on the persistence of long-lived gorgonians: a case study of *Paramuricea clavata*. *Marine Ecology Progress Series* 402:59-68.
- Finkelstein<sup>pd</sup>, M.E., S. Wolf, M. Goldman<sup>ug</sup>, D.F. Doak, P.R. Sievert, G. Balogh, and H. Hasegawa. 2010. The anatomy of a (potential) disaster: Volcanoes, behavior, and population viability of the short-tailed albatross (*Phoebastria albatrus*). *Biological Conservation* 143:321-331.
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