

Marissa L. Baskett

CONTACT INFORMATION

Department of Environmental Science and Policy
University of California, Davis
One Shields Ave, Davis, CA 95616-5270
Website: <http://www.des.ucdavis.edu/faculty/baskett>

Voice: (530) 752-1579
Fax: (530) 752-3350
E-mail: [mlbaskett\(at\)ucdavis.edu](mailto:mlbaskett@ucdavis.edu)

RESEARCH INTERESTS

My research connects theoretical evolutionary ecology and conservation biology: I use mathematical models and simulations to investigate how anthropogenic impacts cause rapid evolution and community change. While researching a wide range of topics from life history evolution to ecosystem resilience, I develop theory relevant to conservation management decisions.

EDUCATION

Princeton University, Princeton, New Jersey USA
Ph.D., Ecology and Evolutionary Biology, September 2006
M.A., Ecology and Evolutionary Biology, November 2003
Dissertation Topic: Marine Reserve Design and Life History Variation (Advisor: Simon A. Levin)

Stanford University, Stanford, California USA
B.S., Biological Sciences (minor: Mathematics) with Distinction, June, 2001
Honors Thesis: A Polygenic Model of Genomic Imprinting Evolution (Advisor: Marcus W. Feldman)

PROFESSIONAL EXPERIENCE

University of California, Davis
Assistant Professor, Department of Environmental Science and Policy 2008 - present

University of California, Santa Barbara
Postdoctoral Associate, National Center for Ecological Analysis and Synthesis 2006 - 2008

TEACHING EXPERIENCE

Environmental Science and Policy, University of California, Davis

<i>Co-instructor</i> , Environmental Analysis	Taught annually, 2009-present
<i>Instructor</i> , Population Ecology	Taught biannually, 2010-present
<i>Co-instructor</i> , Computational Methods in Population Biology	Taught biannually, 2010-present
<i>Instructor</i> , Topics in Ecology and Evolution	2008-2011
<i>Instructor</i> , Group study: Grant writing	2010

Ecology and Evolutionary Biology, Princeton University

<i>Teaching Assistant</i> , Conservation Biology	Fall 2004
<i>Teaching Assistant</i> , Theoretical Ecology	Spring 2004

PUBLICATIONS

M.L. Baskett and R.S. Waples. Evaluating alternative strategies for minimizing unintended fitness consequences of cultured individuals on wild population. In revision, *Conservation Biology*.

M.L. Baskett. Evolution of Dispersal. In press, *Encyclopedia of Theoretical Ecology* (A. Hastings and L. Gross, eds.), University of California Press, Berkeley, CA.

M.L. Baskett. 2012. Integrating mechanistic organism-environment interactions into the basic theory of community and evolutionary ecology. *Journal of Experimental Biology* 215:948-961.

M.L. Baskett and R. Gomulkiewicz. 2011. Introgressive hybridization as a mechanism for species rescue. *Theoretical Ecology* 4:223-239.

J.W. White, L.W. Botsford, **M.L. Baskett**, L.A.K. Barnett, R.J. Barr, and A. Hastings. 2011.

Linking models and monitoring data in assessing performance of no-take marine reserves. *Frontiers in Ecology and the Environment* 9:(7)390-399.

M.L. Baskett and A.K. Salomon. 2010. Recruitment facilitation can drive alternative states on temperate reefs. *Ecology* 91(6):1763-1773.

J.L. Orrock, **M.L. Baskett**, and R.D. Holt. 2010. Spatial interplay of plant competition and consumer foraging mediates plant coexistence and drives the invasion ratchet. *Proceedings of the Royal Society B: Biological Sciences* 277:3307-3315.

J.L. Orrock, R.D. Holt, and **M.L. Baskett**. 2010. Refuge-mediated apparent competition in plant-consumer interactions. *Ecology Letters* 13:11-20.

M.L. Baskett, R.M. Nisbet, C.V. Kappel, P.J. Mumby, and S.D. Gaines. 2010. Conservation management approaches to protecting the capacity for corals to respond to climate change: a theoretical comparison. *Global Change Biology* 16(4):1229-1246.

M.L. Baskett, S.D. Gaines, and R.M. Nisbet. 2009. Symbiont diversity may help coral reefs survive moderate climate change. *Ecological Applications* 19(1):3-17.

R.A. Pelc, **M.L. Baskett**, T. Tranci, S.D. Gaines, and R.R. Warner. 2009. Quantifying larval export from South African marine reserves. *Marine Ecology Progress Series* 394:65-78.

E.S. Dunlop, **M.L. Baskett**, M. Heino, and U. Dieckmann. 2009. The propensity of marine reserves to reduce the evolutionary effects of fishing in a migratory species. *Evolutionary Applications* 2:371-393.

M.L. Baskett and B.S. Halpern. 2009. Marine Ecosystem Services. In: *Guide to Ecology* (S.A. Levin, ed.), Princeton University Press, Princeton, NJ, pp. 619-624.

M.L. Baskett, J.S. Weitz, and S.A. Levin. 2007. The evolution of dispersal in reserve networks. *American Naturalist* 170(1):5978.

M.L. Baskett, F. Micheli, and S.A. Levin. 2007. Designing marine reserves for interacting species: Insights from theory. *Biological Conservation* 137(2):163-179.

M.L. Baskett. 2007. Simple fisheries and marine reserve models of interacting species: an overview and example with facilitation. *CalCOFI Reports* 48:71-81.

M.L. Baskett. 2006. Prey size refugia and trophic cascades in marine reserves. *Marine Ecology Progress Series* 328:285-293.

M.L. Baskett, M. Yoklavich, and M.S. Love. 2006. Predation, competition, and the recovery of overexploited fish stocks in marine reserves. *Canadian Journal of Fisheries and Aquatic Sciences* 63(6):1214-1229.

M.L. Baskett, S.A. Levin, S.D. Gaines, and J. Dushoff. 2005. Marine reserve design and the evolution of size at maturation in harvested fish. *Ecological Applications* 15(3):882-901.

L. Jin, **M.L. Baskett**, L.L. Cavalli-Sforza, L.A. Zhivotovsky, M.W. Feldman and N.A. Rosenberg. 2000. Microsatellite evolution in modern humans: a comparison of two data sets from the same populations. *Annals of Human Genetics* 64:117-134.

AWARDS AND GRANTS

Managing Natural Resources for Adaptive Capacity: the Central Valley Chinook Salmon Portfolio. CALFED Bay-Delta Program (NOAA/US Fish & Wildlife Service/California Department of Fish & Game), 2012-2015, \$489,343, Co-PIs: Stephanie Carlson (lead PI), Steven Lindley, William Satterthwaite, Michael Springborn, and Robin Waples.

The interaction between spatially and temporally heterogeneous selection: Salmon as a model system, National Science Foundation, 8/1/09-7/31/12, \$132,691 (PI; CI: Robin Waples)

Adaptive Management: Predicting Responses to Marine Protected Areas for Comparison to Monitoring Data, California Sea Grant, 2010-2012, \$226,374, Co-PIs: Louis Botsford (lead PI) and Alan

Hastings

National Science Foundation Graduate Research Fellowship, 2003-2006

Burroughs Wellcome Program in Biological Dynamics Training Grant Recipient, 2001-2006

INVITED
PRESENTATIONS

- 2011 Institute of Biodiversity, Animal Health & Comparative Medicine, University of Glasgow, Glasgow, UK
The Journal of Experimental Biology 2011 Symposium: Integrating Biomechanics and Ecology, Cambridge, UK
- 2010 Wildlife Seminar Series, University of California, Berkeley
Hopkins Marine Station seminar series, Stanford University, Monterey, CA
- 2009 Western Society of Naturalists Annual Meeting, Seaside, CA
Aquatic Ecology Seminar Series, University of California, Berkeley
International Temperate Reef Symposium, Adelaide, Australia
- 2008 International Symposium on the Effects of Climate Change on the World's Oceans, Gijon, Spain
Ecology and Evolutionary Biology, Brown University, Providence, RI
Bodega Marine Laboratory, University of California, Davis
- 2006 College of Agricultural and Environmental Sciences, University of California, Davis
California Cooperative Oceanic Fisheries Investigations Annual Conference, Pacific Grove, CA
Department of Ecology, Evolution and Marine Biology, University of California, Santa Barbara
Section of Evolution and Ecology, University of California, Davis
- 2004 Ecological and Environmental Economics workshop on Spatial Aspects of Reserve Design
Optimization under Economic Constraints, Abdus Salam International Centre for Theoretical Physics, Trieste, Italy

PROFESSIONAL
MEMBERSHIPS AND
SERVICE

- Steering Committee member, Comparative Analysis of Marine Ecosystem Organization, 2009-present
Member, American Fisheries Society
Member, Ecological Society of America

REFEREE
ACTIVITIES

Aquatic Living Resources, American Naturalist, Canadian Journal of Fisheries and Aquatic Sciences, Conservation Biology, Conservation Letters, Ecological Applications, Ecological Modelling, Ecological Monographs, Ecology, Ecology Letters, Environmental Conservation, Evolutionary Applications, Fisheries Research, Journal of Theoretical Biology, Marine Ecology Progress Series, Oikos, Proceedings of the National Academy of Sciences, Proceedings of the Royal Society B: Biological Sciences, Public Library of Science ONE, Theoretical Ecology, Theoretical Population Biology

COMMUNITY
SERVICE

- Volunteer, *Kids Do Ecology* 2007-2008
Member, *Greening Princeton* 2002-2006
Participant, *Scholars in the Schools* 2003-2004
Volunteer, *Students for Environmental Education* 1998-2001