

REBECCA GOLDMAN MARTONE

STANFORD UNIVERSITY ▪ HOPKINS MARINE STATION ▪ OCEANVIEW BLVD ▪ PACIFIC GROVE, CA 93950 USA
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EDUCATION

Ph.D. Candidate, Stanford University, Stanford, CA. (2003-Present, Expected 2008)

Biological Sciences; Ecology and Conservation Biology

Advisor: Dr. Fiorenza Micheli

M.E.M., Duke University, Durham, NC. (1998-2000)

Nicholas School of the Environment, Coastal Environmental Management and Environmental Toxicology

Thesis: The effects of alterations in coastal ecosystems on incidence of disease in Atlantic menhaden (*Brevoortia tyrannus* L.).

Advisors: Dr. Larry Crowder, Dr. Dan Rittschof

B.A., Northwestern University, Evanston, IL. (1993-1997)

Major: Environmental Sciences; Departmental Honors

Honors Thesis: Oil or Soil? A review of how oil and gas exploration and development contribute to salt marsh subsidence along the coast of Louisiana.

DISSERTATION

“Drivers of variability in demography of benthic marine herbivores and implications for management of small-scale fisheries”

Advisor: Dr. Fiorenza Micheli

My thesis research explores the spatial and temporal variation in demographic rates of *Megastraea undosa*, a harvested benthic marine herbivore, addressing the drivers of variability in biomass, growth and reproduction to predict responses of this species to management and conservation efforts. This work is also part of an NSF Biocomplexity project aimed at modeling the biophysical and socio-economic factors underlying variability in rights-based cooperative fishing communities in Baja California.

RESEARCH INTERESTS

- Biogeographic patterns of marine populations and communities, with specific interests in drivers of heterogeneity in demography and species interactions
- Interactive effects of multiple human activities on natural communities
- Links between species diversity and resistance and resilience to disturbance

FELLOWSHIPS AND AWARDS

- **Sigma Xi Grant in Aid of Research** (2008)
- **Grover Hermann Fellowship in Marine Studies**, Stanford University (2006)
- **Eugene & Aileen Haderlie Memorial Award**, Stanford University (2006)
- **Otter Bay custom wetsuit**, for subtidal research (2006)
- **Miller Scholar**, Stanford University (2005)
- **IGERT Fellowship for graduate studies**, University of California at Davis (2003) - declined
- **Doris Duke Conservation Fellowship**, Duke University (1998)

GRANTS

- Dr. Earl H. Myers and Ethel M. Myers oceanographic and Marine Biology Trust, “Spatial variation in vital rates of a benthic marine herbivore: a test of bioenergetic theory” (2007)
- Stanford University VPUE faculty grant to support undergraduate research, with Dr. Fiorenza Micheli (2006)
- National Center for Ecological Analysis and Synthesis (NCEAS), “A synthetic approach to the science of ecosystem-based management”, with Dr. Fiorenza Micheli, Dr. Andy Rosenberg, and Dr. Carrie Kappel (2005)
- Stanford University Woods Institute for the Environment, to support Interdisciplinary Colloquium for the Oceans, with Carrie Kappel, S. Elizabeth Alter, and Rebecca Vega (2005)

RESEARCH EXPERIENCE

Hopkins Marine Station, Stanford University

- Exploring the spatial and temporal variation in demographic rates of *Megastraea undosa*, a harvested benthic marine herbivore, addressing the correlates of variability in biomass, growth and reproduction using mark-recapture techniques, isotopes, and field observations.
- Linking the contribution of biophysical and socioeconomic drivers to variable performance in cooperative fishing communities using subtidal surveys, analysis of food web and community structure, and sociological surveys.
- Investigating interactions between human and natural disturbances in intertidal communities using biodiversity surveys and trampling experiments.
- Evaluated abalone population persistence and recovery and possible mechanisms for reduced recovery including habitat limitation, food limitation, disease, Allee effects and mortality.

National Center for Ecological Analysis and Synthesis (NCEAS), Santa Barbara, CA

- Ranking and mapping multiple human threats and impacts to marine ecosystems in the California current region
- Ecosystem boundary delineation for ecosystem based management. Testing how scale and limited data affect ecosystem boundaries to help managers define management units and prioritize data collection at different scales

Elkhorn Slough National Estuarine Research Reserve, Watsonville, CA

- Used experimental manipulations of nutrients, trampling, and hydrological modifications to examine synergistic effects of multiple human disturbances in salt marsh ecotone.

Duke University Marine Lab, Beaufort, NC

- Assisted in large-scale ecological study of effects of hypoxia on fish abundance, habitat use, and disease in the Neuse River estuary.
- Participated in project linking pelagic prey distributions to oceanographic features in spatial models to determine habitat used by species potentially impacted by pelagic longline fisheries.

National Marine Fisheries Service, Beaufort, NC

- Analyzed fish and marine mammal tissues for trace metals and mercury to examine pelagic food-web dynamics.
- Assisted in mark-recapture and radio telemetry of bottlenose dolphin and loggerhead sea turtles.

USGS Biological Resources Division, Las Vegas, NV

- Relocated and monitored threatened desert tortoises using radio telemetry. Assessed reproductive viability and quantified food and habitat availability.

PROFESSIONAL EXPERIENCE

Ecological Monitoring Coordinator (2002-2003)

Elkhorn Slough National Estuarine Research Reserve, Watsonville, CA

Designed, coordinated, and implemented long-term biological and physical monitoring programs. Trained and supervised volunteers and student interns.

Recycling Associate (2001-2002)

San Francisco Department of the Environment, San Francisco, CA

Coordinated, monitored, and improved waste prevention/recycling programs. Managed grants and contracts, solicited, evaluated and drafted agreements for grant program. Presented information to the public, prepared articles and press releases. Researched and assisted with policy initiatives.

TEACHING EXPERIENCE

Stanford University, Stanford, CA

Co-Instructor: California Coastal Law, Science, and Policy (Spring-Fall 2005)

Co-developed & taught a 9-week interdisciplinary course focused on marine science, law, and policy of the California coast for advanced undergraduate and graduate students in biology, engineering, and law.

Guest Lecturer: California Coastal Law, Science, and Policy (Winter 2007)

Lectured on estuarine ecology, conservation biology and multivariate statistics for interdisciplinary course focused on marine science, law, and policy of the California coast for advanced undergraduate and graduate students in biology, engineering, and law.

Teaching Assistant: Ecology, Evolution, and Plant Biology. (Spring 2005)

Led independent teaching sections, developed course materials and exams

Hopkins Marine Station of Stanford University, Pacific Grove, CA

Student mentor: (Winter-Summer 2007)

Mentoring undergraduate students doing honors theses on reproductive ecology of *Megastraea undosa* and indicators of disturbance in rocky intertidal communities.

Teaching Assistant: Marine Ecology (Winter 2005-2006)

Co-developed & co-taught a course in marine ecology. Lectured on estuarine ecology, invasive species, and multivariate statistics. Led labs and conservation debates.

Teaching Assistant: Invertebrate Zoology (Winter 2004-2005)

Assisted in labs and lectures and led an independent study session with undergraduate students

Guest Lab Instructor: Marine Ecology (Winter 2004-2005)

Developed and led a lab on estuarine ecology.

Duke University

Guest Lecturer Marine Ecology of the Pacific (Fall 2007)

Lectured on estuarine ecology and conservation biology for interdisciplinary course focused on marine science and policy of the California coast for advanced undergraduate and graduate students in environmental sciences.

Elkhorn Slough National Estuarine Research Reserve, Watsonville, CA.

Student mentor: (2002-2003)

Mentored and evaluated interns in independent research projects.

Aullwood Audubon Center, National Audubon Society, Dayton, Ohio.

Environmental Educator, Field Instructor: (Spring 1998)

Instructed students ages K-6 in biology and natural history. Designed and implemented curriculum for field and classroom.

PUBLICATIONS

Micheli, F., A.O. Shelton,* S.M. Bushinksy, A.L. Chiu, A.J. Haupt, K.W. Heiman, C.V. Kappel, M.C. Lynch, **R.G. Martone**, J. Watanabe. 2008. Persistence and recovery of depleted marine invertebrates in marine reserves of central California. *Biological Conservation* 141:1078-1090.

Martone, R.G., and K. Wasson. Multiple human disturbances facilitate invasion of non-native upland plants into a salt marsh. *Oecologia* (In revision)

Kappel, C.V.* B.S. Halpern, **R.G. Martone**, F. Micheli, and K.A. Selkoe. Ocean impact maps hold lessons for coastal and marine management. *Issues in Science and Technology* (Submitted)

PUBLICATIONS IN PREPARATION

Martone, R.G., and F. Micheli. Geographic variation in life history strategy of *Megastraea undosa*: implications for fisheries management. In prep for *Ecological Applications*

Martone, R.G., F. Micheli, and A. Haupt. Productivity gradients structure marine subtidal communities. In prep for *Marine Ecology Progress Series*

Micheli, F.,* S. Frascchetti, K. W. Heiman, C. V. Kappel, J. Martin, **R. G. Martone**, G. C. Osio, S. Sethi, A.O. Shelton, and M.J. Anderson. Natural and human disturbance combine to structure rocky-shore assemblages. In prep for *Ecological Monographs*

Micheli, F.,* L. Gonzalez, S. Guzman del Prío, A.J Haupt, **R.G Martone**, B. McCay, E. Serviere, G. Shester, W. Weisman. Productivity and community structure across the southern edge of giant kelp distribution in Baja California, Mexico: implications for small-scale fisheries. In prep for *Ecological Applications*

Teck, S., C.E. Shearer, B.S. Halpern, R. Cooke, C. Ebert, C.V. Kappel, **R.G. Martone**, F. Micheli, K.A. Selkoe. Using expert judgment to assess the vulnerability of marine ecosystems in the California Current. In prep for

*Position of authors after senior authors determined by alphabetical order

OTHER PUBLICATIONS

Micheli, F.M.*, K.W. Heiman, C.V. Kappel, M.C. Lynch, J. Martin, and **R.G. Martone**. 2006. Ecological impacts of human visitation of rocky shores. In *Ecosystem Observations – an annual publication of the Monterey Bay National Marine Sanctuary*. (Invited article)

Kappel, C. and **R.G. Martone**. 2006. "Ecosystem-based management." Encyclopedia of Earth. Eds. J Emmett Duffy. (Washington, D.C.: Environmental Information Coalition, National Council for Science and the Environment). [Published October 04, 2006]. (Peer-reviewed)
<http://www.eoearth.org/article/Ecosystem-based_management>

Goldman, R. 2001. Solving Problems of Oil Pollution in a Salt Marsh. *North Carolina Estuarine Research Reserve Technical Paper Series*, #3 <http://www.ncnerr.org/ccs/publications/index.html>

*Position of authors after senior authors determined by alphabetical order

PRESENTATIONS

American Fisheries Society, Annual Meeting

(2007) Micheli, F., L. Gonzalez, S. Guzmán del Prío, A. Haupt, **R.G. Martone**, E. Serviere, G. Shester. *Spatial variation in biological productivity and connectivity: implications for scales of management*

American Fisheries Society, Mexican Chapter Biennial Meeting

(2007) **Martone, R.G.**, Micheli, F.M., Roark, B., and Dunbar, R. *Variabilidad en el crecimiento de caracol panocha, *Megastraea undosa*, utilizando los isotópos estables del oxígeno*

Bay Area Conservation Biology Symposium

(2006) **Martone, R.G.** et al. *Persistence of depleted marine invertebrates in marine reserves of central California*

CalCofi Annual Conference

(2006) Micheli, F.M., C.V. Kappel, **R.G. Martone**, and A. Rosenberg. *Marine ecosystem-based management: theory and practice*

Student Collaborations for Ocean Research and Education (SCORE)

(2005) **Martone, R.G.** *Spatial and temporal variation of consumer-resource interactions*

Western Society of Naturalists

(2007) **Martone, R.G.**, and F. Micheli. Geographic variation in life history strategy of *Megastraea undosa*: to grow or reproduce?

(2004) **Martone, R.G.**, and K. Wasson. *Trampling and hydrological manipulations facilitate invasion of upland weeds into a California salt marsh.*

Monterey Bay National Marine Sanctuary Currents Symposium

(2002) Wasson, K., S. Fork, and **R.Goldman**. *ESNERR Invertebrate Monitoring Program*

PROFESSIONAL MEMBERSHIPS

Sigma Xi, Associate Member (2006-present)

Society for Conservation Biology (2005-present)

Ecological Society of America (2004-present)

Western Society of Naturalists (2003-present)

COMMUNITY SERVICE

Student representative, Education and Pedagogy Committee (2006-present)

Woods Institute for the Environment Stanford University. Advise on academic and extracurricular programs for graduate and undergraduate education.

Representative, Student Committee of Western Society of Naturalists (2004-2007)

Organize and manage student workshops, symposium, and auction for student travel.

Co-founder and leader, Students for Collaboration in Ocean Research and Education (SCORE) (2005-present). Stanford University. Created forum to bring together researchers from diverse disciplines to share ideas about marine research, education and outreach. Organized Ocean Colloquium for interdisciplinary research in ocean science & policy. Developing sustainable seafood campaign with Stanford Dining.

Student representative, Woods Institute for the Environment Marine Committee (2005)

Advised on academic and extracurricular programs for graduate students.

Treasurer, Hopkins Marine Station Graduate Research Organization (2004-present).

Manage funding and activities for graduate student organization.

ESNERR Representative, Research Activity Panel, Monterey Bay National Marine Sanctuary (2002)

Advised on scientific research and monitoring in the Sanctuary.

RELATED EXPERIENCE

Spanish, proficiency in speaking, reading, and writing

PADI SCUBA certified diver

AAUS Scientific Research diver