

Elena Marie Finkbeiner

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Research Interests

- Self-organization, resilience, and adaptive capacity in social-ecological systems
- Small-scale fisheries governance
- Role of diversification in fisheries
- Environmental entitlements and access
- Solution-based science
- Human rights and social justice considerations in natural resource management and conservation

Current Affiliations

Early Career Fellow, Center for Ocean Solutions, Stanford University

Postdoctoral Researcher, Hopkins Marine Station, Stanford University

Education

Stanford University, Hopkins Marine Station

Ph.D., Biology, December 2014

Dissertation: [*Survival and sustainability in small-scale Mexican fisheries: a cross-scale examination of resilience in marine social-ecological systems.*](#)

Advisor: Dr. Larry Crowder

Duke University, Nicholas School of the Environment

M.E.M., Coastal Environmental Management, May 2009

Master's Project: [*Establishing a socio-economic baseline of sea turtle ecotourism in Baja California Sur, Mexico.*](#)

Advisor: Dr. Larry Crowder

University of California, Santa Cruz

B.S., Ecology and Evolutionary Biology, May 2005

Independent Research: *Plant flora and dispersal agents on two islands and the mainland in northwest Costa Rica.*

Study Abroad Program: Tropical Biology, Costa Rica

Fellowships, Grants, Awards

Walton Family Foundation Grant, Center for Ocean Solutions, Stanford University, 2016

Early Career Fellowship, Center for Ocean Solutions, Stanford University, 2015

Dr. Earl H. Myers & Ethel M. Myers Oceanographic and Marine Biology Trust Award, Stanford University, 2012

Conference Travel Award, Nicholas School of the Environment, 2008, 2009, 2011

Student Travel Award, International Sea Turtle Society, 2008, 2009, 2011

Graduate Student Field Research Grant, Center for Latin American and Caribbean Studies, 2008, 2010

The Nicholas School Alumni Association Fellowship, 2008-2009

Whitney Lawson Chamberlin Memorial Endowment Fund, 2008

Kuzmier-Lee-Nikitine Internship Fund, 2008

Research Experience

Early Career Fellow, Center for Ocean Solutions, Stanford University, January 2015 – Present

Designing global literature review and online survey in three languages, targeting small-scale fisheries practitioners, to glean lessons learned and best practices on the integration of human rights based approaches in fisheries governance.

Postdoctoral Research, Baja Peninsula, Mexico and Stanford University, January 2015 – Present

Designing and conducting behavioral economic field experiments with small-scale fishers among different coastal communities along the Baja Peninsula as part of an NSF funded research project at Stanford University: Enhancing resilience of coastal ecosystems and human communities to oceanographic variability.

PhD Research, Baja California Sur, Mexico, 2009-2014

Analyzed official catch data of small-scale fisheries, conducted focus groups and interviews in Spanish among different coastal communities in Baja California Sur, Mexico for PhD Dissertation research: *Survival and sustainability in small-scale Mexican fisheries: a cross-scale examination of resilience in marine social-ecological systems.*

Graduate Student Research Assistant, Dr. Xavier Basurto, Duke University, 2010

Organized, cleaned and coded data in Spanish from oral interviews with fishermen from communities in southern Baja. Performed preliminary statistical analysis on data for use in future conference papers and publications.

Directed Research Leader, Ocean Discovery Institute, California and Mexico, 2009

Lead research investigation on testing visual deterrents to reduce sea turtle bycatch in small-scale gillnet fisheries in northwestern Mexico. Coordinated data collection tasks and responsibilities with Mexican gillnet fishermen and high school students from California.

Bycatch Analyst, Project Global, Duke University Marine Lab, 2008

Developed a nationwide bycatch estimate of sea turtles for US. Conducted a literature review of sea turtle genetic and satellite tracking data. Mapped hierarchical sea turtle *Regional Management Units* in ArcGIS. Products presented at Marine Turtle Specialist Group Burning Issues Meeting and in several peer-reviewed journals.

Masters Research, Baja California Sur, Mexico, 2008

Conducted a focus group, trained Mexican college students on survey administration techniques, and administered over 300 surveys and interviews in Spanish among different coastal communities in Baja California Sur, Mexico for Master's Project research: *Establishing a socio-economic baseline of sea turtle ecotourism in Baja California Sur, Mexico.*

Contracted Research Assistant, Ocean Conservancy, 2007

Conducted a literature review on conservation best practices for ecotourism and sea turtle viewing specifically.

Research Technician, Deedee Paschal Barrier Island Trust, South Carolina, 2006

Sea turtle nest relocation and inventory duties on a private island and national island refuge. Upkeep of restricted access bird nesting habitat.

Biological Research Assistant, PRETOMA, Costa Rica, 2005

Field research including tagging and measuring nesting sea turtles, verifying nesting status, relocating eggs to hatchery, or other sites on the beach, and releasing hatchlings from hatchery.

Biological Research Assistant, University of California, Santa Cruz, 2004-2005

Field research including gathering samples of native marsh plants for distribution and dispersal mechanism studies, working under a graduate student.

Teaching Experience

Graduate Student Teacher's Assistant and Guest Lecturer, Duke University, Stanford University, California State University Monterey Bay, 2009-2015

Lecturing and discussion leading in graduate- and undergraduate-level courses: *Marine Megafauna, From Water to Washington* (an undergraduate Capstone course), *Governance of Social-Ecological Systems, Marine Ecology, Synthesis in Ecology, Marine Ecological Modeling, Experimental Design and Probability, Collective Action and Environmental Resource Management, Marine Conservation, Ocean Policy, Social Oceans, and Sustainability of Marine Systems*; assisting professors in writing and grading tests and assignments, planning guest lectures, providing office hours for students, and planning and conducting labs.

Resident Lecturer in Environmental Policy and Socioeconomics, School for Field Studies, Baja California Sur, Mexico, 2011

Developed curriculum, lectures, assignments, field exercises and individual research projects for a college-level, full-credit course concerning current topics in environmental policy and socioeconomics in the context of Pacific Mexican fishing communities. Advised students on individual research projects and coordinated data collection for an ongoing School for Field Studies research effort on the characterization of small-scale fishing fleets of Magdalena Bay, Baja California Sur.

Educator, Ocean Discovery Institute, California and Mexico, 2009

Taught scientific research methods, data analysis and statistics, scientific writing and oral presentation skills to high school students. Additionally, lectured on sea turtle biology and conservation, endangered species fisheries bycatch, small-scale fisheries dynamics in northwestern Mexico, and local marine ecology and conservation both in the field (Baja, Mexico) and in the classroom (San Diego, CA).

Sea Turtle Educator, Deedee Paschal Barrier Island Trust, South Carolina, 2006

Educator responsibilities in nature center and wet lab including tours, educational lectures, camps, presentations, and community outreach.

Professional Experience

Symposium Organizer, Resilience, Stockholm, 2017

Invited speakers, co-organized, and co-wrote proposal for accepted symposium at 2017 Resilience meeting: *Using big data to understand marine social-ecological systems: challenges, opportunities, and frontiers.*

Workshop Organizer and Facilitator, Center for Ocean Solutions, Monterey, CA, 2016

Organized and facilitated a workshop, 'Developing practical guidance for just small-scale fisheries sustainability', convening over 20 representatives from funding organizations, academic institutions, NGOs, government agencies, fisher collectives, and the FAO to co-produce academically robust and practically sound advice, tailored to funders and practitioners, to guide the development of just and sustainable fisheries solutions.

Symposium Organizer, AAAS, Chicago, 2014

Invited speakers, organized, and wrote proposal for accepted symposium at 2014 AAAS meeting: *Challenges and opportunities for transitioning small-scale fisheries to sustainability.*

Peer-Reviewer, 2012-present

Peer-review duties for scientific journals and funding institutions: *Ecology and Society; Fish and Fisheries; Biological Conservation; Journal of the Marine Biological Association of the United Kingdom; Chelonian Conservation and Biology; Regional Environmental Change; Conservation Letters; Endangered Species Research; Latin American Journal of Aquatic Research; National Fish and Wildlife Foundation; National Oceanic and Atmospheric Administration, National Geographic.*

Program Officer, International Sea Turtle Society, 2007-2014

Responsible for grant writing, fundraising and developing outreach tools to enhance Society's financial development for Symposia in South Carolina, Baja California Sur, Mexico, Queensland, Australia, Goa, India, California, Maryland and Louisiana.

Vice President, Duke Chapter American Fisheries Society, Duke University, 2008-2009

Promoted sustainable and local seafood through the organization of community outreach and university related events. Coordinated fundraising efforts to support local organizations facilitating sustainable seafood and fishing practices.

Volunteer Coordinator, International Sea Turtle Society, Mexico, 2008

Coordinated international conference logistics and volunteers in Baja California Sur, Mexico.

Research & Administrative Assistant, Dr. Wallace J. Nichols, California, 2006-2007

Financial and book keeping responsibilities, grant writing, literature review and research for the Endangered Species Act, event organizing, participation and attendance at international conferences, coordination and attendance of outreach events.

Peer-Reviewed Publications

In Review

Finkbeiner, E.M., F. Micheli, N. Bennett, A. Ayers, E. Le Cornu, A. Doerr (In Review)
Examining trade-offs in climate change response in the context of Pacific Island Fisheries. Marine Policy.

- Le Cornu, E., A. Doerr, **E. Finkbeiner**, D. Gourlie, L.B. Crowder (In Review) Spatial approaches to small-scale fisheries management: a potential framework for climate change adaptation in Pacific Islands. *Marine Policy*.
- Finkbeiner E.M.**, F. Micheli, A. Saenz-Arroyo, L. Vazquez-Vera, C.A. Perafan, J.C. Cárdenas (In Review) Local response to global uncertainty: insights from experimental economics. *Global Environmental Change*.
- Finkbeiner, E.M.**, N. Bennett, T.H. Frawley, D. Briscoe, C. Brooks, J. Mason, C. Ng, R. Ourens, K. Seto, S. Swanson, J. Urteaga, L.B. Crowder (In Review) Reconstructing overfishing: moving beyond Malthus for comprehensive and equitable solutions. *Fish and Fisheries*.
- Rodríguez-Perafán, C.A., A. Sáenz-Arroyo, **E. Finkbeiner**, L. Vázquez-Vera, F. Micheli (In Review) What shapes fishers' adaptive capacity? A collaborative perspective from Baja California, Mexico. *Marine Policy*.

Published or In Press

- Kittinger, J. N., L. Teh, E. Allison, N.J. Bennett, **E.M. Finkbeiner**, C.G. Scarton, K. Nakamura, Y. Ota, J. Young, L.B. Crowder, et al. (2017) Committing to Socially Responsible Seafood. *Science* 356(6341): 912-913.
- Bennett, N.J., L. Teh, Y. Ota, P. Christie, A. Ayers, J. Day, P. Franks, D. Gill, R. Gruby, J. Kittinger, Z. Koehn, N. Lewis, J. Parks, M. Vierros, T. Whitty, A. Wilhelm, K. Wright, J. Aburto, **E.M. Finkbeiner**, C. Gaymer, H. Govan, N. Gray, R. Jarvis, M. Kaplan-Hallam, & T. Satterfield (2017) An appeal for a code of conduct for marine conservation. *Marine Policy* 81: 411-418.
- Whitney, C.K., N.J. Bennett, N. Ban, E. Allison, D. Armitage, J. Blythe, J.M. Burt, W. Cheung, **E. Finkbeiner**, M. Kaplan-Hallam, I. Perry, N.J. Turner, L. Yumagulova (2017) Adaptive capacity: from assessment to action in coastal social-ecological systems. *Ecology and Society* 22(2).
- Finkbeiner, E.M.**, T.H. Frawley, S.H. Peckham, L.B. Crowder (2017) Unintended consequences of conservation action: impacts on protected species and fishing communities of Pacific Mexico. *SAMUDRA* 75.
- Leslie, H., M. Nenadovic, X. Basurto, L. Sievanen, O. Aburto-Oropeza, K.C. Cavanaugh, J.J. Cota-Nieto, B.E. Erisman, **E.M. Finkbeiner**, G. Hinojosa-Arango, M. Moreno-Baez, S. Nagavarapu, S.M.W. Reddy, A. Sánchez-Rodríguez, K. Siegel, J.J. Ulibarria-Valenzuela, A.H. Weaver (2015) Operationalizing the social-ecological systems framework to assess sustainability. *Proceedings of the National Academy of Science* 112(19): 5979-5984.
- Finkbeiner, E.M.** (2015) The role of diversification in dynamic small-scale fisheries: lessons from Baja California Sur, Mexico. *Global Environmental Change* 32: 139-152.
- Aguilera, S., J. Cole, **E.M. Finkbeiner**, E. Le Cornu, N.C. Ban, M.H. Carr, J.E. Cinner, L.B. Crowder, S. Gelcich, C.C. Hicks, J.N. Kittinger, R. Martone, D. Malone, C. Pomeroy, R.M. Starr, S. Seram, R. Zuercher, K. Broad. (2015) Managing small-scale commercial fisheries for adaptive capacity: Insights from dynamic social-ecological drivers of change in Monterey Bay. *PLOS ONE*. DOI:10.1371/journal.pone.0118992
- Finkbeiner, E.M.**, X. Basurto (2015) Redefining co-management to facilitate small-scale

- fisheries reform: An illustration from northwest Mexico. *Marine Policy* 51:433-441.
- Kittinger, J.N., J.Z. Koehn, E. Le Cornu, N.C. Ban, M. Gopnik, M. Armsby, C. Brooks, M.H. Carr, J.E. Cinner, A. Cravens, M. D'Iorio, A. Erickson, **E.M. Finkbeiner**, M.M. Foley, R. Fujita, S. Gelcich, K. St. Martin, E. Prahler, D.R. Reineman, J. Shackeroff, C. White, M.R. Caldwell, L.B. Crowder (2014) A practical approach for putting people into ecosystem-based ocean planning. *Frontiers in Ecology and the Environment* 12(8): 448-456.
- Le Cornu, E., J.N. Kittinger, J.Z. Koehn, **E.M. Finkbeiner**, L.B. Crowder (2014) Current practice and future prospects for social data in coastal and ocean planning. *Conservation Biology* 28(4): 902-911.
- Kittinger, J.N., **E.M. Finkbeiner**, N.C. Ban, K. Broad, M.H. Carr, J.E. Cinner, S. Gelcich, M.L. Cornwell, J.Z. Koehn, X. Basurto, R. Fujita, M.R. Caldwell, L.B. Crowder. (2013) Emerging frontiers in social-ecological systems research for sustainability of small-scale fisheries. *Current Opinion in Environmental Sustainability* 5(3): 352-357.
- Kittinger, J.N., **E.M. Finkbeiner**, E.W. Glazier, and L.B. Crowder. (2012) Human dimensions of coral reef social-ecological systems. *Ecology and Society* 17(4): 17.
- Wallace, B.P., A.D. DiMatteo, A.B. Bolten, M.Y. Chaloupka, B.J. Hutchinson, F.A. Abreu-Grobois, J.A. Mortimer, J.A. Seminoff, D. Amorcho, K.A. Bjorndal, J. Bourjea, B.W. Bowen, R. Briseño Dueñas, P. Casale, B.C. Choudhury, A. Costa, P.H. Dutton, A. Fallabrino, **E.M. Finkbeiner**, A. Girard, M. Girondot, M. Hamann, B.J. Hurley, M. Lopez-Mendilaharsu, M.A. Marcovaldi, J.A. Musick, R. Nel, N.J. Pilcher, S. Troëng, B. Witherington, R.B. Mast. (2011) Global conservation priorities for marine turtles. *PLoS ONE* 6(9):e24510. doi:10.1371/journal.pone.0024510.
- Finkbeiner, E.M.**, B.P. Wallace, J.E. Moore, R.L. Lewison, L.B. Crowder. (2011) Cumulative estimates of sea turtle bycatch and mortality in U.S.A. fisheries between 1990-2007. *Biological Conservation* 144: 2719-2727.
- Wallace, B.P., R.L. Lewison, S.L. McDonald, R.K. McDonald, C.Y. Kot, S. Kelez, R.K. Bjorkland, **E.M. Finkbeiner**, S. Helmbrecht, L.B. Crowder (2010) Global patterns of marine turtle bycatch. *Conservation Letters* 3(3): 131-142.
- Wallace, B.P., A.D. DiMatteo, B.J. Hurley, **E.M. Finkbeiner**, A.B. Bolten, M.Y. Chaloupka, B.J. Hutchinson, F.A. Abreu-Grobois, D. Amorcho, K.A. Bjorndal, J. Bourjea, B.W. Bowen, R. Brisen-Duenas, P. Casale, B.C. Choudhury, A. Costa, P.H. Dutton, A. Fallabrino, A. Girard, M. Girondot, M.H. Godfrey, M. Hamann, M. Lopez-Mendilaharsu, M.A. Marcovaldi, J.A. Mortimer, J.A. Musick, R. Nel, N.J. Pilcher, J.A. Seminoff, S. Troeng, B. Witherington, R.B. Mast (2010) Regional management units for marine turtles: a novel framework for prioritizing conservation and research across multiple scales. *PLoS ONE* 5(12):e15465. doi:10.1371/journal.pone.0015465.

Book Chapters

- Finkbeiner, E.M.**, K.L. Oleson, J.N. Kittinger (2017) Social resilience in the Anthropocene ocean. In, (eds. P.S. Levin and M.R. Poe) *Conservation for the*

Anthropocene Ocean: Interdisciplinary Science in Support of People and Nature. Academic Press.

Finkbeiner, E.M., A. Ayers, J.N. Kittinger, L.B. Crowder (2015) A comparison of small-scale fisheries governability: Baja California Sur, Mexico and the Hawaiian Islands. In, (eds. S. Jentoft and R. Chuenpagdee) Interactive Governance for Small-scale fisheries. MARE Publication Series 13. Springer International Publishing, Switzerland.

Invited Seminars

Finkbeiner, E.M. Studying marine fisheries as coupled social-ecological systems. MARINE Seminar Series, University of California Santa Cruz, January 27th, 2017.

Finkbeiner, E.M. Achieving resilience fisheries in a dynamic world: lessons from response diversity. RTC Seminar Series, Romberg Tiburon Center, San Francisco State University, September 16th, 2015.

Conference Presentations

Finkbeiner, E.M. Reflections on using field economic experiments to understand collective behavior under increasing uncertainty in fisheries (Oral Presentation), Resilience, Stockholm, Sweden, August 2017.

Finkbeiner, E.M., F. Micheli, J.C. Cardenas, L. Vasquez, C.A. Perafan, A. Saenz. Small-scale fisheries stewardship in a changing world: lessons from behavioral economics (Oral Presentation), International Marine Conservation Congress, St. Johns, Newfoundland, CA, August 2016.

Finkbeiner, E.M., N. Bennett, C. Brooks, T. Frawley, J. Mason, C. Ng, R. Ourens, K. Seto, S. Swanson, J. Urteaga, D. Wingfield, L.B. Crowder. Reconstructing overfishing: moving beyond Malthus for comprehensive and equitable solutions (Oral Presentation), Association for American Geographers Annual Meeting, San Francisco, California, March, 2016.

Lear, K., **E.M. Finkbeiner**. Cultural and professional challenges encountered by interdisciplinary-oriented graduate students (Oral Presentation), Ecological Society of America Annual Meeting, Baltimore, Maryland, August, 2015.

Finkbeiner, E.M. Exploring social-ecological resilience in small-scale fisheries (Oral Presentation), Workshop on Human Dimensions of Coastal Marine Ecosystems, Stanford University, May 20th 2015.

Finkbeiner, E.M. Barriers and opportunities for stakeholder engagement in Mexican small-scale fisheries (Oral Presentation), Association for Environmental Studies and Sciences Annual Meeting, San Diego, CA, June 26th 2015.

Finkbeiner, E.M. Scales of resilience: lessons from small-scale fishing cooperatives in Baja California Sur, Mexico (Oral Presentation), 2nd World Small-scale Fisheries Congress, Merida, Mexico, September 2014.

Finkbeiner, E.M., L.B. Crowder. On access and adaptive capacity: lessons from small-scale fishing cooperatives in Baja California Sur, Mexico (Oral Presentation), International Marine Conservation Congress, Glasgow, Scotland, August 2014.

Finkbeiner, E.M. Mitigating the effects of external drivers through diversification: lessons from small-scale fishing cooperatives in Baja California Sur, Mexico

- (Oral Presentation) Achieving Resilience in Small-Scale Fisheries: Applying Emerging Frontiers in Social-Ecological Systems Research, Resilience, Montpellier, France, May 2014.
- Finkbeiner, E.M.** Unintended consequences in small-scale fisheries management (Oral Presentation) Challenges and Opportunities for Transitioning Small-scale Fisheries to Sustainability Symposium, AAAS, Chicago, Illinois, February 2014.
- Finkbeiner, E.M.** Management of Mexican fisheries and the potential for self-governance: An argument for cross-scale coordination in fisheries management (Oral Presentation). Social Coast Forum, Charleston, SC, February 2012.
- Finkbeiner, E.M.** Exploring Density-Dependence in Loggerhead (*Caretta caretta*) Population Viability Analysis (Poster Presentation). 31st Annual Symposium on Sea Turtle Biology and Conservation, San Diego, CA, April 2011.
- Finkbeiner, E.M.,** B. Nahill, L.B. Crowder, W.J. Nichols. Establishing a socio-economic baseline of sea turtle conservation tourism in Baja California Sur, Mexico (Oral Presentation). 29th Annual Symposium on Sea Turtle Biology and Conservation, Brisbane, Australia, February 2009.
- Wallace, B.P., **E.M. Finkbeiner,** S. Helmbrecht. Development of regional management units for sea turtles: applications for threats evaluation, gap analysis, diversity hotspots assessments, and conservation priority setting (Oral Presentation). 29th Annual Symposium on Sea Turtle Biology and Conservation, Brisbane, Australia, February 2009.
- Finkbeiner, E.M.,** E. Griffin, B.P. Wallace, J.E. Moore. Cumulative sea turtle bycatch estimates across U.S. fisheries and their relative impacts on nesting and reproductive stocks (Poster Presentation). 29th Annual Symposium on Sea Turtle Biology and Conservation, Brisbane, Australia, February 2009.
- Finkbeiner, E.M.,** B. Nahill, W.J. Nichols. *SEE Turtle* Best Practices: A practical guide to conservation tourism (Poster Presentation). 28th Annual Symposium on Sea Turtle Biology and Conservation, Loreto, Baja California Sur, Mexico, January 2008.
- Finkbeiner, E.M.,** W. J. Nichols. Sea turtle bycatch and terrestrial ecology: A review of the interactions between strandings, scavengers and terrestrial ecosystems (Poster Presentation). 27th Annual Symposium on Sea Turtle Biology and Conservation, Myrtle Beach, South Carolina, U.S.A, March 2007.

Professional Affiliations

American Fisheries Society
International Sea Turtle Society
Ocean Revolution

Service

New Faculty Search Student Evaluation Team, Department of Environmental Earth System Science, Stanford University, 2013
Coordinator, Hopkins Marine Station Fall Seminar Series, Stanford University, 2013
Youth Outreach, Hilton Habitat of Carmel Valley and Watsonville High School, 2011
Co-Coordinator, Green Wave, Duke University Marine Lab, 2010-2011
International Sea Turtle Society Student Committee, 2010-2011

Co-Coordinator, Mostly Marine Informal Seminar Series, 2008-2009
Earth Day Event Coordinator, Duke University, 2008
Vice-President, Duke Chapter of American Fisheries Society, 2007-2008
Farmhand Sustainable Dinner Committee, Duke University, 2007-2008

Skills

- ❖ Extensive field experience in California and South Carolina, Guanacaste, Costa Rica, Baja California Sur, Mexico
- ❖ Spanish language speaking, reading and writing proficiency; experience in social science survey and economic experiment development and implementation in second language
- ❖ Proficient in ArcGIS, NVIVO, R, Matlab, and Microsoft Office suite
- ❖ Strong technical writing skills including grants, research and biological papers
- ❖ Strong communication skills and articulate public speaker
- ❖ Experience in coordination of outreach events and international conferences
- ❖ Lifeguard, First Aid and CPR training. Motorboat Operator Certified by USFWS. PADI Open Water, Advanced Open Water, and Rescue Diver Certification, AAUS Scientific Diver Certification.