

SHEILA REDDY, PH.D.

SUMMARY

I have over five years of experience providing scientific leadership and capacity to high-profile strategic sustainability and conservation initiatives and a total of seven years of research experience since obtaining my PhD. I have managed cross-sectoral and interdisciplinary teams of professionals to deliver on complex research and pilot projects. In addition to publishing over 20 scientific papers, my commitment to communicating to diverse audiences is demonstrated through my frequent public speaking engagements and blogging. Two defining successes are a Fortune 50 company committing to a first-ever sustainability goal to find \$1 Billion in projects that are good for business and ecosystems and insights from new economics research informing the strategies of a global and regional priority of The Nature Conservancy.

PROFESSIONAL EXPERIENCE

- Apr 2015-
Present
- THE NATURE CONSERVANCY**
Behavioral Economics Scientist, Office of the Chief Scientist
- Providing scientific leadership and capacity to integrate behavioral economics into conservation
 - Leading science to test interventions (e.g., economic and social incentives) to promote adoption of agricultural practices that enhance carbon sequestration and water quality
 - Leading pilot to test the Nature Goal process at 7 sites globally–Dow’s sustainability goal to generate \$1 Billion in projects that are good for business and ecosystems
 - Quantifying Millennials’ consumer and environmental behaviors to inform strategy for Global Cities
 - Investigating how social networks accelerate innovation to inform Conservation by Design Refresh
 - Ensuring all research complies with the Human Subjects Research Standard Operating Procedure
- Feb 2011-
Mar 2015
- THE NATURE CONSERVANCY**
Sustainability and Ecosystem Services Scientist, Central Science Division
- Provided scientific capacity and leadership in sustainability and ecosystem services science
 - Contributed to a proposal to Dow’s Board of Directors that resulted in the adoption of the first-ever corporate sustainability goal for valuing nature as Nature Goal lead for TNC-Dow Collaboration
 - Developed and applied a tool (ESII) to value ecosystem services at a site-scale as economic valuation lead for TNC-Dow Collaboration
 - Assessed Bahamian’s relationship with conch (shellfish) and piloted behavioral nudges, which enabled TNC and partners to influence the national government to engage in conch conservation
 - Identified why communities choose nature-based solutions for coastal erosion and new strategies based on behavioral insights for the North America Risk Reduction & Resilience Initiative
 - Developed and applied methods for businesses to integrate the value of nature into decisions related to coastal hazards and freshwater scarcity as pilot analysis lead for TNC-Dow Collaboration
- Feb 2011-
Mar 2014
- BROWN UNIVERSITY**
Visiting Scientist, Environmental Change Initiative
- Co-PI on NSF Coupled Natural and Human Systems Exploratory Team Grant
 - Established relationship between university and TNC staff to facilitate translation of research
- Oct 2009-
Feb 2011
- BROWN UNIVERSITY**
Postdoctoral Research Associate, Department of Economics and Department of Ecology
- Identified economic, ecological, and institutional conditions that result in positive economic and environmental outcomes for fishing cooperatives and fish populations
- Aug 2002-
July 2003
- UNIVERSITY OF CALIFORNIA- DAVIS**
Postgraduate Researcher, Bodega Marine Lab
- Developed a biomarker for EPA to detect petroleum pollution in estuarine animals

EDUCATION

- Sept 2009 **UNIVERSITY OF CALIFORNIA- SAN DIEGO**
Ph.D., Marine Biology, Program in Conservation at Scripps Institution of Oceanography, with the Dept. of Economics
Thesis: *Linking Coral Reef Health and Human Welfare*
- June 2002 **STANFORD UNIVERSITY**
B.S., Biological Sciences with Honors for thesis on adaptation to climate variability

LEADERSHIP TRAINING

- | | |
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| TNC Emerging Leaders Program | 2014-2015 |
| TNC Science Impact Project | 2013-2016 |

PEER-REVIEWED PUBLICATIONS (*STUDENT ADVISEE)

- Reddy, S.M.W.**, J. Montambault, Y.J. Masuda, E. Keenan, W. Butler, J.R.B. Fisher, S.T. Asah, A. Gneezy. 2016. [Advancing conservation by understanding and influencing human behavior](#). *Conservation Letters*. doi: 10.1111/conl.12252
- Aburto-Oropeza, O. H.M. Leslie, A.M. Mack-Crane*, S. Nagavarapu, **S.M.W. Reddy**, L. Sievanen. 2016. [Property rights for fishing cooperatives: how \(and how well\) do they work?](#) *World Bank Economic Review*. doi: 10.1093/wber/lhw001
- Reddy, S.M.W.**, G. Guannel, R. Griffin, J. Faries, T. Boucher, M. Thompson, J. Brenner, J. Bernhardt, G. Verutes, S.A. Wood, J. Silver, J. Toft, A. Rogers*, A. Maas*, A. Guerry, J. Molnar, J.L. DiMuro. 2016. [Evaluating the role of coastal habitats and sea-level rise in hurricane risk mitigation: An ecological economic assessment method and application to a business decision](#). *Integrated Environmental Assessment and Management*. doi: 10.1002/ieam.1678
- Kochnowar*, D., **S.M.W. Reddy**, R. Flick. 2015. [Factors influencing local decisions to use habitats to protect coastal communities from hazards](#). *Ocean and Coastal Management* 116: 277-290.
- Reddy, S.M.W.**, R.I. McDonald, A. Maas*, A. Rogers*, E.H. Girvertz, S. Wood, J. Molnar, J. DiMuro, T. Finley, G. Leathers. 2015. [Industrialized watersheds have elevated water risk and limited opportunities to mitigate risk through water trading](#). *Water Resources and Industry* 11: 27-45.
- Leslie, H.M., X. Basurto, M. Nenadovic, L. Sievanen, K.C. Cavanaugh, J.J. Cota-Nieto, B. Erisman, E. Finkbeiner, G. Hinojosa-Arango, M. Moreno-Báez, S. Nagavarapu, **S.M.W. Reddy**, A. Sánchez-Rodríguez, K. Siegel, J.J. Ulibarria-Valenzuela, A. Hudson Weaver, O. Aburto-Oropeza. 2015. [Operationalizing the social-ecological systems framework to assess sustainability](#). *Proceedings of the National Academy of Sciences* 112(19): 5979-5984.
- Wood, C.L., J. Baum, **S.M.W. Reddy**, R. Trebilco, S. Sandin, B. Zgliczynski, A. Briggs, F. Micheli. 2015. [Productivity and fishing pressure drive variability in fish parasite assemblages of the Line Islands, equatorial Pacific](#). *Ecology* 96:1383–1398.
- Reddy, S.M.W.**, R.I. McDonald, A. Maas*, A. Rogers*, E.H. Girvertz, J. North, J. Molnar, J. DiMuro, T. Finley, G. Leathers. 2015. [Finding solutions to water scarcity: A case study of incorporating ecosystem service values into business planning at The Dow Chemical Company’s Freeport facility](#). *Ecosystem Services* 12: 94-107.
- Reddy, S.M.W.**, T. Groves, S. Nagavarapu. 2014. [Consequences of a government-controlled agricultural price increase on Fishing and the coral reef ecosystem in the Republic of Kiribati](#). *PLoS ONE* 9(5): e96817
Faculty1000 Recommended
- Roy, E., A. Morzillo, F. Seijo, **S.M.W. Reddy**, J. Rhemtulla, J. Midler, T. Kuemmerle, S. Martin. 2013. [The elusive pursuit of interdisciplinarity at the human-environment interface](#). *Bioscience* 63: 745-753.
- Reddy, S.M.W.**, A. Wentz*, M. Maxey, O. Aburto-Oropeza, S. Nagavarapu, H. Leslie. 2013. [Evidence of market-driven size-selective fishing and the mediating effects of biological and institutional factors](#). *Ecological Applications* 23: 726-741.
- Carilli, J.E. and **Walsh, S.M.** 2012. [Benthic foraminiferal assemblages from Kiritimati \(Christmas\) Island indicate increased nutrification has occurred on a decadal scale](#). *Marine Ecology Progress Series* 456:87-99.
- Walsh, S. M.**, B.I. Ruttenberg, S.L. Hamilton, M. Donovan, S.A. Sandin. 2012. [Fishing top predators indirectly affects condition and reproduction in a reef fish community](#). *Journal of Fish Biology* 80: 519-537.
- Ruttenberg B.I., S.L. Hamilton S.L., **S.M. Walsh**, M.K. Donovan, A. Friedlander, E. DeMartini, E. Sala, S. Sandin.

2011. [Predator-induced demographic shifts in coral reef fish assemblages](#). *PLoS ONE* 6(6): e21062.
- Walsh, S.M.** 2011. [Ecosystem-scale effects of nutrients and fishing on coral reefs](#). *Journal of Marine Biology. Article ID 187248*
- Eakin, C.M. et al. (66 Co-authors) 2010. [Caribbean corals in crisis: record thermal stress, bleaching, and mortality in 2005](#). *PLoS ONE* 5(11): e13969
- Sandin, S.A., **S.M. Walsh**, J.B.C. Jackson. 2010. Prey release, trophic cascades, and phase shifts in tropical nearshore marine ecosystems. In J. Estes and J. Terborgh (eds) [Trophic cascades: predators, prey, and the changing dynamics of nature](#), Island Press. pp. 71-91.
- Carilli, J.E., R.D. Norris, B. Black, **S.M. Walsh**, M.D. McField. 2010. [Century-scale records of coral growth rates indicate that local stressors reduce coral thermal tolerance threshold](#). *Global Change Biology* 16: 1247-1257.
- Vermeij, M., M. Dailer, **S.M. Walsh**, M. Donovan, C. Smith. 2010. [The effects of trophic interactions and spatial competition on algal community composition on Hawaiian Coral Reefs](#). *Marine Ecology* 31: 291-299.
- Carilli, J.E., R.D. Norris, B.A. Black, **S.M. Walsh**, M. McField. 2009. [Local stressors reduce coral resilience to bleaching](#). *PLoS ONE* 4(7): e6324.
- Sandin S.A., et al. (18 co-authors) 2008. [Degradation of coral reef communities across a gradient of recent human disturbance](#). *PLoS ONE* 3(2): e1548.
- Carson, R. and **S. Walsh**. 2006. [Preventing oil spill damages: lessons from the Exxon Valdez](#). *Oceanis* 32(3/4): 349-372.
- Garren, M., **S.M. Walsh**, A. Caccone, N. Knowlton. 2006. [Patterns of association between *Symbiodinium* and members of the *Montastraea annularis* species complex on spatial scales ranging from within colonies to between geographic ranges](#). *Coral Reefs* (25): 503-512.

PUBLICATIONS IN REVIEW

- Halsey, K., P. Manson, M. Erhardt, K. Halsey, R. Currie, F. Guertin, E. Uhlhorn, **S.M.W. Reddy**, J. North. (Revise and Resubmit). Bayesian belief network synthesis modeling of ecosystem services to support land management decisions.

PUBLICATIONS IN PREPARATION

- Reddy, S.M.W.**, S. Norris, Y. Masuda, M. Liu. Examining how trends in Millennials' attitudes and behaviors could affect consumption and environmental behavior in the US, India, China, and Brazil.
- Reddy, S.M.W.**, K. Torphy, Y. Liu, T. Chen, S. Galey, Y. Masuda, J. Fisher, K. Burford, J. Montambault, K. Frank. Exposure to colleagues' practices enhances spread of evidence-based practices.
- Masuda, Y., **S.M.W. Reddy**, Y. Liu, K. Burford, K. Frank. Who diffuses and who is influential: Investigating the role of boundary spanners in diffusing innovation.

REPORTS

- TNC 2015. Knowledge Attitudes and Practices Research: Queen Conch Report. The Nature Conservancy, Bahamas.
- TNC-Dow Collaboration. 2011-2015. Annual Progress Report(s). The Nature Conservancy, Arlington, VA.
- . 2015. Ecosystem Service Identification and Inventory Tool: Phase 2. The Nature Conservancy, Arlington, VA.
- . 2014. Ecosystem Service Identification and Inventory Tool: Phase 1. The Nature Conservancy, Arlington, VA.
- . 2013. Freeport Pilot Site: Coastal Natural Hazard Protection. The Nature Conservancy, Arlington, VA.
- . 2013. Freeport Pilot Site: Freshwater Ecosystem Services. The Nature Conservancy, Arlington, VA.
- . 2011. Ecosystem Service Frameworks and Tools: Review. The Nature Conservancy, Arlington, VA.
- Walsh, S.** and M. McField. 2005. Understanding patterns of bleaching in the Mesoamerican Reef: A collaborative effort to support resilience-based management. H. Schuttenberg and P. Marshall, eds. *Responding to global change: a reef manager's guide to coral bleaching*. NOAA, Washington, D.C.

DECISION-SUPPORT TOOLS

- TNC 2016. Ecosystem Services Identification and Inventory Tool. (scientific development) <http://www.esiitool.com>
- WBCSD 2015. Natural Infrastructure for Business Platform. (contributor) <http://www.naturalinfrastructureforbusiness.org>

ADVISORY

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| Presidential Advisory Council, The Nature Conservancy | 2013-2014 |
| Research Theme Development Group, National Socio-Environmental Synthesis Center | 2012 |
| Phoenix Islands Protected Area, Climate Change Scoping Study, Conservation International | 2010 |

Postdoctoral Advisory Panel, Brown University	2009-2010
Park Committee, University of California-San Diego	2007-2008

PROFESSIONAL SERVICE

Manuscript Reviewer (<i>Proceedings of the National Academy of Sciences, Conservation Letters, Journal of Environment and Development, Conservation Biology, Marine Resource Economics, Ecosystem Services, Estuaries and Coasts</i>)	
Grant Reviewer, NSF Science of Organizations Program	2015
Scientific Committee Member, International Congress for Conservation Biology	2014-2015
Grant Reviewer, NSF Coastal Science, Engineering, and Education for Sustainability Program	2013, 2014

PUBLIC SERVICE

Member, Economic Sustainability Commission, Town of Carrboro, NC	2016-2018
Vice Chair, Environmental Advisory Board, Town of Carrboro, NC	2014-2016
Member, Environmental Advisory Board, Town of Carrboro, NC	2013-2014

CONFERENCE SYMPOSIA AND TOWN HALL ORGANIZER

Human Behavior and Nature, International Congress on Conservation Biology	Montpelier, France 2015
Integrating the Value of Nature into Business Decisions, A Community on Ecosystem Services	Crystal City, VA 2014

PRESENTATIONS AND PUBLIC SPEAKING

Gund Institute for Ecological Economics, University of Vermont (invited, upcoming: November)	Burlington, VT 2016
Scripps Institution of Oceanography (invited keynote speaker, upcoming: September)	La Jolla, CA 2016
Piedmont Sustainability Junto (invited)	Durham, NC 2016
Water Funds Summit (invited)	Bogota, Colombia 2016
Third Experimental Methods in Policy	Ixtapa, Mexico 2016
TNC Business Council Annual Meeting	Charlotte, NC 2015
International Congress on Conservation Biology	Montpellier, France 2015
Association of State Floodplain Managers (given by Sarah Murdock)	Atlanta, GA 2015
Department of Commerce Natural Capital Business Roundtable	Houston, TX 2015
A Community on Ecosystem Services	Crystal City, VA 2014
National Academy of Sciences North American New Horizons in Science (keynote)	D.F., Mexico, 2014
TNC Senior Manager's Meeting (Emcee)	Minneapolis 2014
National Council on Science and the Environment (invited)	Washington, DC 2014
The Dow Chemical Company, Valuing Nature Global Broadcast to 50,000+ employees	Midland, MI 2013
TNC Business Council Annual Meeting	Seattle, WA 2014
Duke University, Fuqua School of Business (invited)	Durham, NC 2013
Rice University, Evaluating and Trading Ecological Services (invited)	Houston, TX 2013
Duke University, Nicholas Institute- Environmental Policy Seminar Series (invited)	Durham, NC 2013
Reinsurance Association of America, Catastrophe Modeling Conference (invited)	Orlando, FL 2013
American Fisheries Society, Climate and Fisheries (invited)	St. Paul, MN 2012
A Community on Ecosystem Services	Ft. Lauderdale, FL 2012
Center for Business and Environment at Yale (invited)	New Haven, CT 2012
TNC Business Council Annual Meeting	Warren, VA 2011
Ecosystem Markets Conference (invited)	Madison, WI 2011
SEA Semester (invited)	Woods Hole, MA 2011
Roger Williams University (invited)	Bristol, RI 2010
Brown University, Department of Sociology (invited)	Providence, RI 2010
Brown University, Department of Ecology & Evolutionary Biology (invited)	Providence, RI 2009
BIOECON: Biodiversity and Economics for Conservation Conference	Venice, Italy 2009
International Marine Conservation Congress	Washington, D.C. 2009
International Ecological Economics Conference	Nairobi, Kenya 2008
International Coral Reef Symposium	Ft. Lauderdale, FL 2007
Ecological Damages of Oil Spills: economic damages and compensation (invited)	Paris, France 2006

GRANTS AND AWARDS

P3 (Private-Public Partnerships) Impact Award <i>Finalist</i> (TNC-Dow Collaboration)	2015
Alliance for Corporate Social Responsibility Award (TNC-Dow Collaboration)	2015
National Academies of Science North American New Horizons Fellow	2014
Roy Family Award for Environmental Partnership (TNC-Dow Collaboration)	2013
NSF Dynamics of Coupled Natural and Human Systems Explor. Team Grant (Co-PI w/H. Leslie, S. Nagavarapu)	2011
Coupled Human and Natural Systems (CHANS) Fellowship	2008
National Science Foundation Graduate Teaching Fellows in K-12 Education	2008
PADI Foundation Research Grant	2008
American-Scandinavian Foundation Grant	2006
International Society for Reef Studies/Ocean Conservancy Fellowship	2006
National Science Foundation Graduate Research Fellowship	2005
National Science Foundation IGERT Graduate Fellowship	2004
University of California-San Diego Regents Fellowship	2003
World Wildlife Fund-Protected Area Program Research Grant	2003
Cap & Gown (Stanford Women's Honors Society)	2001-present

COMMUNICATIONS

Twitter @NatureReddy	2013-present
When Can Sustainability Drive Business Growth? , <i>Cool Green Science</i>	2016
Local Fishing Groups Hold the Tools for Sustainable Fishing, but Need the Strength of Property Rights , <i>Cool Green Science</i>	2016
Film, Five Questions We Should Be Asking About Human Behavior and Nature , <i>YouTube</i>	2016
Film, Working with Nature to Protect Against Erosion , <i>YouTube</i> and <i>Cool Green Science</i>	2015
Book Review, Misbehaving: The Making of Behavioral Economics , <i>Science Chronicles</i>	2015
Understanding Dow's Nature Goal , <i>nature.org</i>	2015
Is Nature Ready to Transform Big Business? , <i>Cool Green Science</i>	2015
Book Review, A Better World, Inc. , <i>Science Chronicles</i>	2014
Behavioral Science and Natural Infrastructure , <i>Science Chronicles</i>	2014
A Voice for Sustainability: The People Behind Your T-Shirt , <i>Cool Green Science</i>	2013
Re-Branding Nature: From Dismal Swamp to Constructed Wetland , <i>Cool Green Science</i>	2013
A Green Contagion: What Could Make Investing in Nature Catch On? , <i>Cool Green Science</i>	2013
Science Journey to Loreto, Sustainable Fishing, Part I-III , <i>Conservancy Talks</i>	2012-2013
Valuing Nature, The Science of The Dow Collaboration , <i>Science Chronicles</i>	2012
Fat Fish, Sick Fishery? , <i>Conservancy Talks</i>	2012
Book Review, The Darwin Economy , <i>Science Chronicles</i>	2011
Bringing Efficient and Effective Ecosystem Markets to Scale, Part II , <i>Science Chronicles</i>	2011
Bringing Efficient and Effective Ecosystem Markets to Scale, Part I , <i>Science Chronicles</i>	2011
Science Shorts, Review of Klemick, H. 2011. <i>JEEM</i> 61: 95-106., <i>Science Chronicles</i>	2011
Q & A on Biodiversity, Ecosystem Services and the Dow Collaboration , <i>Science Chronicles</i>	2011

MEDIA (COVERAGE ON PAPERS AND PROJECTS; INTERVIEWS ON CONSERVATION ISSUES)

The New Yorker , Time Magazine , Guardian , GreenBiz , Environmental Leader , Sustainable Brands , A Better World, Inc. , Nature's Fortune , <i>various</i> (TNC-Dow Collaboration)	2011-2015
GreenBiz , Huffington Post , Ecosystem Marketplace (WBCSD Natural Infrastructure for Business Platform)	2015
Environmental Leader , Daily CSR , Sustainable Brands (May) , Sustainable Brands (Oct) , Huffington Post , <i>Cool Green Science</i> (papers)	2015
<i>Cool Green Science</i> (papers)	2013
<i>The Nature Conservancy Magazine</i> (paper)	2012
<i>The New Scientist</i> (interview)	2012
Essentials of Utilization-Focused Evaluation , Michael Quinn Patton (working paper)	2011
This Week at Brown (project)	2010
Change.org (interview)	2010
National Public Radio , All Things Considered (interview on working paper)	2009

<i>The Yale Globalist</i> (interview)	2009
<i>Radio Kiribati</i> (interview) and <i>Kiribati Ministry of Fisheries Newsletter</i> (research project)	2007, 2009
<i>Ocean Conservancy Magazine</i> (research project)	2008
<i>The New York Times</i> (paper)	2008
<i>This Week at UCSD</i> (paper)	2006

STUDENT ADVISEES⁺ & CLIENT-CENTERED MASTER'S PROJECT ADVISEES

Jocelyn Tsai, Matthew Halperin, Maya Cough-Schulze, Ben Young, Jordan Hardt Duke University, Nicholas School of the Environment, MEM Project: Blueprint for integrating nature into management decisions: a case study of stormwater management Academic advisor: Lynn Maguire	2015-2016
Shumin Zheng Duke University, Nicholas School of the Environment, MEM Project: Impacts of ENSO on small-scale fisheries catch in Gulf of California, Mexico Academic advisor: Marty Smith	2013-2014
Peter Browning, Mimi Gong, Tianyang Hu, Charles Marx, Taichi Nataka Duke University, Nicholas School of the Environment, MEM Project: Valuing nature in business: a case study of chemical manufacturing and forest products industries Academic advisor: Lynn Maguire	2013-2014
Dana Kochnower ⁺ Scripps Institution of Oceanography, University of California-San Diego, MAS Project: Behavioral science of natural infrastructure investments Chaired committee, with co-advisors: Rinehart Flick and Ayelet Gneezy	2013-2014
Anthony Rogers ⁺ , Duke University, Nicholas School of the Environment, MEM	2012-2013
Alexander Maas ⁺ , Colorado State University, Ph.D. Candidate, Agricultural and Resource Economics	2012-2013
Allison Wentz ⁺ Brown University, B.S. Thesis: A matrix population model of <i>Lutjanus peru</i> in Baja, Mexico Co-advisors: Heather Leslie, Martin Maxey	2010-2011
Alex Lobert ⁺ , Brown University, Department of Economics, Co-advisor: Sriniketh Nagavarapu	2010
Mary McCormick ⁺ University of California-San Diego, B.S. Thesis: Outcomes of a cost-benefit analysis of a shark-fining ban depend on assumptions of predator-prey models and distribution of costs and benefits Faculty advisor: Richard Carson	2009

TEACHING & CURRICULUM DEVELOPMENT

SEA Semester: Sustainability in Polynesian Island Cultures and Ecosystems (Contributed to curriculum)	2011
NSF Graduate Teaching Fellow in K-12 Education, Mt. Miguel High School, Spring Valley, CA	2008-2009
Teaching Assistant, Economics of the Environment, Economics Department, University of California-San Diego	2007
Teaching Assistant, Ocean Resource Economics, Economics Department, University of California-San Diego	2006
<i>Business and Environmental Issues</i> , Stanford University (Co-created course, later permanent offering)	2001-2002

VOLUNTEER ACTIVITIES

President, Roberson Place Home Owner's Association	2013-2015
Stanford Young Alumni Board, San Diego Chapter	2008-2009

PERSONAL AWARDS

American Alpine Club, Kidder Aspiring Alpinist Award	2014
American Alpine Club, Live Your Dream Grant	2014