

Katie K. Arkema
Curriculum Vitae

Affiliation: Natural Capital Project
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Stanford University
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Forest Sciences, University of WA
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ACADEMIC APPOINTMENTS

2016-present Lead Scientist, Natural Capital Project, Stanford University
2013-2016 Senior Scientist, Natural Capital Project, Stanford University
2012-2013 Research Associate, Natural Capital Project, Stanford University
2008-2012 Postdoctoral Fellow, Natural Capital Project, Stanford University

EDUCATION

2008 PhD Department of Ecology, Evolution and Marine Biology, University of California, Santa Barbara; Dissertation: *Consequences of Kelp Forest Structure and Dynamics for Epiphytes and Understory Communities*
2000 B.A. Department of Ecology and Evolutionary Biology, Princeton University
Minor in Latin American studies; Thesis: *Spatial distribution and behavior of male poison-dart frogs in a wet tropical forest in Costa Rica*

HONORS and AWARDS

2012-2013 United States Department of State: Fulbright NEXUS Scholar
2006-2008 Univ. of CA Marine Council: Coastal Environmental Quality Initiative Fellowship
2001, 02, 03 NSF Graduate Research Fellowship Honorable Mention

RESEARCH GRANTS

2018 Inter-American Development Bank: Innovation in Climate-resilient Integrated Coastal Zone Management (\$410K)
2018 Climate-Smarting MPAs and Coastal Management in the Mesoamerican Reef Region (\$405K)
2017 Bahamas Reef Education and Environment Fund: Economic Valuation of Bahamian Marine Protected Areas (\$65K)
2015 Science for Nature and People Partnership (SNAPP): Aligning coastal restoration with ecological and societal needs (\$250K)
2015 National Academy of Sciences: Smart investments for people and nature: optimization of ecosystem services in Gulf of Mexico (\$125K)
2015 Inter-American Development Bank: Ecosystem-based Development for Andros, Island, Bahamas (\$510K)
2014 Inter-American Development Bank: Capacity building for ecosystem services valuation and coastal planning, Barbados (\$250K)

- 2012 Inter-American Development Bank: Proof of concept for cost-benefit analysis of climate adaptation strategies in Placencia, Belize (\$50K)
- 2011 Summit Foundation: Putting valuation of nature's services to work: Advancing coastal zone management, PES and biodiversity conservation in Belize (\$60K)
- 2011 ICES/PICES Oceans of Change Early Career Scientists Conference (€ 850)
- 2010 NOAA/NSF CAMEO Program: Developing linked watershed-marine ecosystem service models to evaluate coastal management strategies (\$500K)
- 2008 University of California Research Grant (\$500)
- 2005 National Center for Ecological Analysis and Synthesis Research Grant (\$5K)
- 2005 Worster Research Grant (\$10K)
- 2004, 2003 Sigma Xi (\$500)
- 2004 Shoreline Preservation Fund (\$500)

JOURNAL PUBLICATIONS

Selig E. , D. G. Hole, E. H. Allison, **K. Arkema** et al. Mapping global human dependence on marine ecosystems. *Conservation Letters*. In press.

Keeler, B., P. Hamel , T. McPhearson, M. H. Hamann, M. L. Donahue, K. Meza Prado, **K. Arkema** et al. The value of urban ecosystem services: A review of social, ecological, and technical moderators. *Nature Sustainability*. In press.

Sutton-Grier, A., R. Gittman, **K. Arkema** et al. 2018. Investing in natural and nature-based infrastructure: building better along our coasts. *Sustainability*. Volume 10
doi:10.3390/su10020523

Wyatt, K., R. Griffin, A. Guerry, M. Ruckelshaus, M. Fogarty, **K. Arkema**. 2017. Habitat risk assessment for regional ocean planning in the U.S. Northeast and Mid-Atlantic. *PLOS ONE*
<https://doi.org/10.1371/journal.pone.0188776>

Arkema, K., R. Griffin, S. Maldonado, J. Silver, J. Suckale, A. Guerry. 2017. Linking social, ecological and physical science to advance natural and nature-based protection for coastal communities. *Annals of the New York Academy of Sciences. The Year in Ecology and Conservation Biology*. DOI: 10.1111/nyas.13322

Verutes, G., **K. Akema**, C. Clarke-Samuels, S. Wood, A. Rosenthal, S. Rosado, M. Canto, N. Bood, M. Ruckelshaus. 2017 Integrated Planning that Safeguards Ecosystems and Balances Multiple Objectives in Coastal Belize. *International Journal of Biodiversity Science, Ecosystem Services & Management*. 13(3):1-17.
<http://dx.doi.org/10.1080/21513732.2017.1345979>

Guannel G., **K. Arkema**, P. Ruggiero, G. Verutes. 2016. The Power of Three: Coral Reefs, Seagrasses and Mangroves Protect Coastal Regions and Increase their Resilience. *PLOS ONE*. 11: e0158094.

Ruckelshaus, M., G. Guannel, **K. Arkema**, G. Verutes, R. Griffin, A. Guerry, J. Silver, J. Ferries, J. Brenner, A. Rosenthal. 2016. Evaluating the benefits of green infrastructure for coastal areas: Location, location, location. *Coastal Management*. 44: 504–516.

Arkema K., G. Verutes, S. Wood, C. Clarke, M. Canto, S. Rosado, A. Rosenthal, M. Ruckelshaus, G. Guannel, J. Toft, J. Faries, J. M. Silver, R. Griffin, A. D. Guerry. 2015. Improved returns on nature's benefits to people from using ecosystem service models in marine and coastal planning in Belize. *Proceedings of the National Academy of Sciences*. 112 (24):7390–7395, doi: 10.1073/pnas.1406483112

Guannel G., P. Ruggiero, **K. Arkema**, J. Faries, M. Pinsky, A. Guerry, G. Gelfenbaum. 2015. Integrated modeling framework to quantify coastal protection services provided by vegetation. *Journal of Geophysical Research-Oceans* 120 (1): 324-345. DOI: 10.1002/2014JC009821 <http://onlinelibrary.wiley.com/doi/10.1002/2014JC009821/references>

Arkema K., G. Verutes, J. Bernhardt, C. Clarke, M. Canto, S. Rosado, S. Wood, M. Ruckelshaus, A. Rosenthal., M. McField. 2014 Assessing habitat risk from human activities to inform coastal and marine spatial planning in Belize. *Environmental Research Letters* 9 114016

H. Tallis, J. Lubencho and 238 signatories¹ 2014. Working together: a call for inclusive conservation. *Nature* 515 (7525): 27-28 doi:10.1038/515027a

Rosenthal, A., Verutes, G., McKenzie, E.; **K. Arkema**, Bhagabati, N., Bremer, L., Olwero, N., Vogl, A. 2014. Ecosystem Service Assessments: Process Matters. *International Journal of Biodiversity Science* <http://www.tandfonline.com/doi/pdf/10.1080/21513732.2014.966149>

Langridge S., E. Hartge, R. Clark, **K. Arkema**, G. Verutes, E. Prahler, S. Stoner-Duncan, D. Revell, M. Caldwell, A. Guerry, M. Ruckelshaus, A. Abeles, C. Coburn, K. O'Connor, 2014. Key lessons for incorporating natural capital into regional climate adaptation planning and implementation. 2014. *Ocean and Coastal Management* 95:189–197 <http://www.sciencedirect.com/science/article/pii/S0964569114000854>

E. Nelson, P. Kareiva, M. Ruckelshaus, **K. Arkema**, G. Geller, E. Girvetz, D. Goodrich, V. Matzek, M. Pinsky, W. Reid, M. Saunders, D. Semmens, H. Tallis. 2013. Climate change's impact on key ecosystem services and the human well-being they support in the United States. 2014. *Frontiers in Ecology and the Environment* 11: 483-493.

Arkema, K., G. Guannel, G. Verutes, S. Wood, A. Guerry, M. Ruckelshaus, P. Kareiva., M. Lacayo, J. Silver. 2013. Coastal habitats protect people and property from sea level rise and storms. *Nature Climate Change* 3:913–918. <http://dx.doi.org/10.1038/nclimate1944>

M.L. Pinsky, G. Guannel, and **K. Arkema** 2013. Quantifying wave attenuation to inform coastal habitat conservation. *Ecosphere* 4:art95. <http://dx.doi.org/10.1890/ES13-00080.1>

Toft, J.E., J.L. Burke, M.P. Carey, C.K. Kim, G. Spiridonov, M. Marsik, D.A. Sutherland, **K. Arkema**, et al. 2013. From mountains to sound: modeling the sensitivity of Dungeness crab and Pacific oyster to land-sea interactions in Hood Canal, WA. *ICES Journal of Marine Science*.

¹ K. Arkema is one of signatories

Carey, M. P., P. S. Levin, H. Townsend, T. J. Minello, G. R. Sutton, T. B. Francis, C. J. Harvey, J. E. Toft, **K. Arkema**, et al. 2013. Characterizing coastal foodwebs with qualitative links to bridge the gap between the theory and the practice of ecosystem-based management. *ICES Journal of Marine Science*.

Kim, C.-K., J. E. Toft, M. Papenfus, G. Verutes, A. D. Guerry, M. H. Ruckelshaus, **K. Arkema**, et al. 2012. Catching the Right Wave: Evaluating Wave Energy Resources and Potential Compatibility with Existing Marine and Coastal Uses. *PLoS ONE* 7:e47598.

Guerry, AD, MH Ruckelshaus, **K. Arkema**, JR Bernhardt, G. Guannel, CK Kim, M Marsik, M Papenfus, JE Toft, G Verutes, SA Wood, M Beck, F Chan, KMA Chan, G Gelfenbaum, BD Gold, BS Halpern, WB Labiosa, SE Lester, PS Levin, M McField, ML Pinsky, M Plummer, S Polasky, R Ruggiero, SA Sutherland, H Tallis, A Day, J Spencer. 2012. Balancing Benefits from Nature: Using ecosystem services as the currency for coastal and marine spatial planning. *International Journal of Biodiversity Science, Ecosystem Services & Management*. DOI: 10.1080 /21513732.2011.64 7835 Volume 8, Issue 1-2, 2012 :107-121

Arkema, K. and J.F. Samhuri. 2012. Linking ecosystem health to ecosystem services. *American Fisheries Society Symposium Special Volume*. 79:9–25, 2012

Arkema, K., D. Reed, and S. Schroeter. 2009. Direct and indirect effects of giant kelp determine benthic community structure and dynamics. *Ecology* 90:3126-3127

Arkema, K. 2009. Flow-mediated feeding in the field: consequences for the performance and abundance of a sessile marine invertebrate. *Marine Ecology Progress Series* 388:207-220

Reed, D., A. Rassweiler, **K. Arkema**. 2009. Density derived estimates of standing crop and net primary production in the giant kelp *Macrocystis pyrifera* *Marine Biology*. 156:2077–2083

Reed, D., A. Rassweiler, **K. Arkema**. 2008. Biomass rather than growth rate determines variation in net primary production by giant kelp. *Ecology* 89:2493-505

Rassweiler, A., **K. Arkema**, D. Reed. 2008. Net primary production, growth and standing crop of *Macrocystis pyrifera* in southern California. *Ecology* 89:2086

Gaylord, B., J. Rosman, D. Reed, J. Koseff, J. Fram, S. MacIntyre, **K. Arkema**, et al. 2007. Spatial patterns of flow and their modification within and around a giant kelp forest. *Limnology and Oceanography* 52:1838-1852

Arkema, K., S. Abramson, B. Dewsbury. 2006. Marine ecosystem-based management: from characterization to implementation. *Frontiers in Ecology and the Environment* 4:525-532

In review

Arkema, K., L. Rogers, J. Toft, A. Mesher, K. Wyatt, S. Albury-Smith, S. Moultrie, M. Ruckelshaus, J. Samhuri. Integrating fisheries management into sustainable development planning. *Ecology and Society*. In review.

Silvia in review.

INVITED BOOK CHAPTERS & SECTIONS

Arkema K. and M. Ruckelshaus. 2017. “Transdisciplinary research for conservation and sustainable development planning in the Caribbean.” In *Conservation in the Anthropocene Ocean: Interdisciplinary Science in Support of Nature and People*. Levin, P & M. Poe, Eds.:pp. San Diego, CA: Elsevier.

Arkema K., S. Scychers, C. Shephard. 2017. Chapter 2: Living Shorelines for nature and people in *Shorelines: Living, enhanced, restored in the modern era* (eds. D.M. Bilkovic, M. Mitchell, J. Toft, M. La Peyre) Taylor & Francis Group and CRC Press; CRC Press Marine Science Series. March 2017.

C. Littlefield, E. Nelson, B. Dittbrenner, J. Withey, **K. Arkema**, J. Lawler. Ecosystem-based Adaptation in *Climate Change and Biodiversity* (eds T. Lovejoy and L. Hannah) in press. Lisa Wedding, Sarah Reiter, Eric Hartge, Greg Guannel, Hilary Walecka, Molly Melius, Tom Robinson, Sandi Potter, Lisa Posternak, Sarah Newkirk, Greg Verutus, **K. Arkema**, Anne Guerry, Mary Ruckelshaus, Meg Caldwell. Modeling and Mapping Coastal Ecosystem Services to Support Climate Adaptation Planning in *Ocean Solutions, Earth Solutions* in press.

Arkema, K. 2015. Viewpoint from a practitioner in Chapter 4: Historical ecosystem service provision estimates can guide restoration efforts. In *Marine Historical Ecology in Conservation: Applying the Past to Manage for the Future* (eds. Kittinger, McClenachan, Gedan, & Blight). UC Press.

Arkema, K. and J.E. Toft. Case study: Integrated coastal zone management, coastal Belize, in Ecosystem Based Management (MR Baker, chapter author), *Principles of Conservation Biology 4th edition* (eds. Groom, M, Meffe GK, Carroll CR and CH Vynne, editors) Sinauer Associates.

Guannel, G., **K Arkema**, M. Papenfus, A. Guerry, CK Kim, M. Ruckelshaus, and J. Toft. 2011. Using natural habitats to mitigate the impact of coastal hazards and inform management decisions. *Solutions to Coastal Disasters* [http://dx.doi.org/10.1061/41185\(417\)22](http://dx.doi.org/10.1061/41185(417)22)

Gutiérrez, J. C. Jones, J. Byers, **K. Arkema**, et al. 2010. Physical ecosystem engineers and the functioning of estuaries and coasts. Chapter 5, in Volume 7: *Functioning of Estuaries and Coastal Ecosystems*, (eds., C. H. R. Heip, C. J. M., Philippart, and J. J. Middelburg) in the Treatise on Estuarine and Coastal Science (Series eds., E. Wolanski, and D. McLusky), Elsevier.

LEGISLATION, TECHNICAL REPORTS AND WHITE PAPERS

Arkema K., D. Fisher, K. Wyatt. 2017. *Economic Valuation of Ecosystem Services in Bahamian Marine Protected Areas*. Prepared by the Natural Capital Project. Submitted by BREEF to The Nature Conservancy for the Bahamas Protected Project 100 p.

Government of The Bahamas and Inter-American Development Bank. 2017. Sustainable Development Master Plan for Andros Island. 440 p. **Arkema, K.** led analysis of ecosystem services to inform the plan.

Arkema K., D. Fischer, R. Griffin, L. Rogers, M. Ruckelshaus, J. Silver, G. Verutes, S. A. Wood, K. Wyatt, S. Albury-Smith, J. Knowles, S. Schill. *BH-T1040: Ecosystem-Based Development for Andros Island*. Natural Capital Project Final Report to the Inter-American Development Bank. May 2017.

Coastal Zone Management Authority and Institute (CZMAI). 2016. Belize integrated coastal zone management plan. Belize City, Belize. Coastal Zone Management Authority and Institute. 265 p. **Arkema, K.** led science analysis and was lead author on corresponding appendix to inform the plan.

Rosenthal, A., **K. Arkema**, G. Verutes, N. Bood, D. Cantor, M. Fish, R. Griffin, and M. Panuncio. 2013. *Identification and Valuation of Adaptation Options in Coastal-Marine Ecosystems: Test case from Placencia, Belize*. Natural Capital Project Final Report to the Inter-American Development Bank.

Arkema, K. Box 4.3 *Climate Impacts on the Gulf of Mexico* in Michelle D. Staudinger et al. 2012. Impacts of Climate Change on Biodiversity, Ecosystems, and Ecosystem Services: Technical Input to the 2013 National Climate Assessment. Cooperative Report to the 2013 National Climate Assessment. 296 p. Available at: <http://assessment.globalchange.gov>

Mulligan M., A. Guerry, **K. Arkema**, F. Villa, K. Bagstad. 2010. Capturing and quantifying the flow. Chapter 2 in Silvestri, S. (ed). *Framing the Flow: Innovative Approaches to Understand, Protect and Value Ecosystem Services Across Linked Habitats*. United Nations Environment Programme, World Monitoring Centre, Cambridge UK.

Samhuri, J.F. and **K. Arkema**. 2007. Potential impacts of anthropogenic climate change on the terrestrial and marine biodiversity of Madagascar. Report to World Wildlife Fund and Conservation International. 22 p.

PRESENTATIONS

Invited Talks

Arkema, K. Strategic investments in infrastructure, ecosystems, and livelihoods to unlock and scale sustainable prosperity. *Sustainability Research Seminar Series*. Inter-American Development Bank. Washington, D.C., May 2018.

Arkema, K. Modeling relationships between nature and people in a climate changed world. *Climate Changed: Unearth, Model, Design*. Massachusetts Institute of Technology Climate Symposium. Boston, Massachusetts, April 2018.

Arkema, K. Advancing coastal risk reduction with ecosystems and equity. Department of Earth System Science. Stanford University, Stanford California, March 2018.

Arkema, K. Valuing nature for coastal risk reduction: It's not all about the \$\$\$\$. *Spring Monster Jam Seminar Series*. NOAA Northwest Fisheries Science Center. Seattle, Washington, March 2018.

Arkema, K. Quantifying coastal ecosystem services. *State of the knowledge on incentives of the blue carbon approach*. National Academies of Sciences, Engineering, Medicine Workshop on Blue Carbon. Woods Hole, Massachusetts, July 2017.

Arkema, K. Are the buzzwords for real? Transdisciplinary science for conservation and sustainable development in coastal systems. *San Diego State University Marine Ecology and Biology Student Association invited speaker*. San Diego, California, February 2017.

Arkema, K. Incorporating natural capital into development plans for low-lying coastal nations. Symposium: *Natural Capital as a Lever of Change: Scaling Ecosystem Service Science for Transformative Decisions*. Ecological Society for America Annual Meeting. Baltimore, Maryland, August 2015.

Arkema, K. Nature's shield: coastal habitats protect people and property from sea-level rise and storms. Symposium: *Keeping Pace with Climate Change: Resilience in Coastal Riverscapes* at 9th IALE World Congress. Portland, Oregon, July 2015.

Arkema, K. Just tell us what to do: Developing ecosystem service science to answer questions for decision-makers. *Northeastern University Marine Science Graduate student association invited speaker*. Nahant, Massachusetts, April 2015.

Arkema, K. Valuing nature's services to inform Coastal Zone Management in Belize. Invited speaker and participant in panel on *Using Ecosystem Services to Inform Marine Spatial Planning*. Annual Natural Capital Symposium. Stanford University, California, March 2015.

Arkema, K. Science in the service of nature and people. Invited speaker and participant in keynote panel *Conservation in the Anthropocene*. Western Society of Naturalists. Tacoma, Washington, November 2014.

Arkema, K. Just tell us what to do: Developing ecosystem service science to answer questions for decision-makers. University of Washington Winter Seminar Series. Seattle, Washington, Winter 2014.

Arkema, K. Iterate and collaborate: Mingling ecosystem service models to inform decisions. NOAA National Ecosystem Modeling Workshop 3: Multi-model inference – mingling models for marine resource management. Seattle, Washington, 2014.
Arkema, K. Natural defenses and green infrastructure. The Nature Conservancy All Scientists Meeting. San Jose, California. December 2013.

Arkema, K. Climate adaptation and green infrastructure investment in Colombia. Fulbright Nexus Program Final Meeting. Washington, D.C., September 2013.

Arkema, K., G. Verutes, G. Guannel, A. Guerry. 2013. Coastal habitats shield people and property from sea-level rise and storms. The Nature Conservancy, September 2013.

Arkema, K. Identification and Valuation of Adaptation Options in Coastal-Marine Ecosystems. Remote presentation for the Inter-American Development Bank. Washington DC, April 2013.

Arkema, K. How do we connect people to the ecosystems they depend upon? Conservation International. Arlington, Virginia, October, 24 2012.

Arkema, K. Integrating science and economics in support of decisions. Economies of Ocean

Sciences Round Table, Washington DC, October 2012

Arkema, K. Protection, Symposium: Six things that everyone cares about. American Association for the Advancement of Science Annual Meeting. Vancouver, Canada, February 17, 2012.

Arkema, K. Evaluating ecosystem-based adaptation. “Our Changing Oceans” NCSE 11th National Conference on Science, Policy and the Environment. Washington DC. Jan 20, 2011

Arkema, K. Nature’s Services Delivered: Harnessing Ecological and Economic Principles to Improve Management of Coastal and Marine Ecosystems. University of Washington Young Seasoned Investigators Seminar Series. Seattle, Washington, October, 28 2010.

Arkema, K. Using ecosystem services to inform management of coastal and marine ecosystems. NOAA Ecosystem Science and Management Working Group. New Orleans, LA, October 13, 2010

Arkema, K. Marine InVEST: a tool for mapping and valuing services provided by coasts and oceans. Ecosystem Services Technical Workshop, Gulf of Maine Symposium. St. Andrews, New Brunswick, Canada, October 5, 2009

Arkema, K. The Natural Capital Project. Sustainable Conservation Annual Advisory Board Meeting. Moore Foundation, Palo Alto, CA, June 18, 2009

Arkema, K. Western Society of Naturalists Student Workshop, Monterey, CA, November, 2009

Arkema, K. Keynote Speaker. It pays to be nice: Economic models to encourage environmental and social responsibility. Mills College Lorry I. Lokey Graduate School of Business 1st Annual Conference in social and environmental responsibility, Oakland, CA April 10, 2009

Arkema, K. K. 2009. Healthy Sea Happy Me! Keynote speaker at Puget Sound Student Science Symposium. Recreational Equipment Incorporated (REI) Flagship Store, Seattle, WA

Arkema, K. K. 2009. The power of experiential science. Salish Seas Expeditions. Patrons of Discovery Breakfast. The Seattle Aquarium, Seattle, WA

Contributed talks at scientific meetings

Ecological Society of America Annual Meeting	2015
American Association for the Advancement of Science Annual Meeting	2012
Society for Conservation Biology, North America Chapter Meeting	2012
ACES A community on ecosystem services conference	2 talks in 2010
International Marine Conservation Congress	2009
Western Society of Naturalists	2004-2011
Ecological Society of America	2005, 2010
International Coral Reef Symposium	2008
NSF Long Term Ecological Research Network All Scientists Meeting	2003, 2006
California and the World Ocean Conference	2006

TEACHING EXPERIENCE

- 2009-present Led, designed, and delivered curricula for more than 15 technical trainings on ecosystem service science, valuation and modeling engaging several hundred people across three continents (North America, South America, Africa).
- 2017 Invited guest lecturer in Incorporating Ecosystems into Coastal Engineering Summer School, Puerto Morelos, Mexico.
- 2013 Invited guest lecturer in Invertebrate Zoology, Biology Department, Seattle University, Seattle Washington
- 2013 Invited guest lecturer on science communication, Program on the Environment, University of Washington, Seattle Washington
- 2013 Invited guest lecturer on Climate Impacts on Ecosystem Services, School of Environmental & Forest Sciences, University of Washington, Seattle Washington
- 2008 Instructor, Salish Seas Expeditions, Puget Sound, Washington
- 2006 Instructor, Invertebrate Biology for 9-12 grade, Woods Hole
- 2002-2006 Teaching and Laboratory Assistant, UCSB
Field Ecology, Phycology, Ecology, Introductory Biology
- 2000-2001 Marine Science Instructor Catalina Island Marine Institute, Channel Islands, California; *Field ecology*, fish, algae, invertebrate laboratories
- 1999 Ecology and Geology Instructor for Outdoor Field Programs, Oregon Museum of Science and Industry

GRANTS FOR OUTREACH

- 2007 Worster philanthropic gift for UCSB Women in Science and Engineering (\$25K)
- 2004-2006 Student Initiated Outreach Program (\$1.5K per year)

SYNERGISTIC ACTIVITIES

Guest Editor - Ecological Applications

Reviewer – *Ambio*, *Biological Reviews*, *BioScience*, *Climatic Change*, *Conservation Biology*, *Conservation Letters*, *Earth's Future*, *Ecological Applications*, *Ecology*, *Ecosystem Services*, *Environmental Management*, *Environmental Research Letters*, *Estuaries and Coasts*, *Faculty 1000*, *Human and Ecological Risk Assessment*, *IJBSESM*, *IJDRR*, *Journal of Applied Ecology*, *Landscape Ecology*, *Marine Biology*, *Marine Ecology Progress Series*, *Nature Climate Change*, *Natural Hazards*, *Proceedings of the National Academy of Science*, *Scientific Reports*

Society memberships

Ecological Society of America, Society for Conservation Biology, Western Society of Naturalists

Open-source software and ecosystem service models

²InVEST Habitat Risk Assessment

http://data.naturalcapitalproject.org/nightly-build/invest-users-guide/html/habitat_risk_assessment.html

InVEST Coastal vulnerability model

http://data.naturalcapitalproject.org/nightly-build/invest-users-guide/html/coastal_vulnerability.html

² InVEST is the Natural Capital Project's Signature Tool for Quantifying, Mapping and Valuing Ecosystem Services. Arkema lead and contributed to the development of several biophysical-economic models within the toolbox.

Sharp, R., Tallis, H.T., Ricketts, T., Guerry, A.D., Wood, S.A., Chaplin-Kramer, R., Nelson, E., Ennaanay, D., Wolny, S., Olwero, N., Vigerstol, K., Pennington, D., Mendoza, G., Aukema, J., Foster, J., Forrest, J., Cameron, D., **Arkema, K.**, Lonsdorf, E., Kennedy, C., Verutes, G., Kim, C.K., Guannel, G., Papenfus, M., Toft, J., Marsik, M., Bernhardt, J., Griffin, R., Glowinski, K., Chaumont, N., Perelman, A., Lacayo, M. Mandle, L., Hamel, P., Vogl, A.L., Rogers, L., and Bierbower, W. 2015. InVEST +VERSION+ User's Guide. The Natural Capital Project, Stanford University, University of Minnesota, The Nature Conservancy, and World Wildlife Fund.

Connecting science to policy (major efforts, a full list is available upon request)

San Francisco Bay Conservation and Development Commission, Arkema co-leads analysis of sea-level rise impacts on ecosystem services to support the Adapting to Rising Tides Program, 2017-present.

County of San Mateo County, Office of Sustainability, Arkema co-leads analysis of adaptation to sea-level rise strategies to inform adaptation planning toolkits, 2017-present.

The Bahamas Office of the Prime Minister, Arkema leads science analysis to support design of sustainable development plan for Andros Island, 2015-2017

US Army Corps of Engineers, International Guidelines for Natural and Nature-based Features (NNBF), Arkema leads chapter on benefits of NNBF, 2016-present

The Bahamas Office of the Prime Minister, Arkema leads science analysis to support design of sustainable development plan for Andros Island, 2015-2017

Belize Coastal Zone Management Authority and Institute, Arkema leads development of science to support design of management plan, 2010-2016

Prioritizing investments in conservation and restoration projects in the Gulf of Mexico by developing and applying a coastal resources investment optimization system (RIOS) Arkema co-leads collaboration with TNC central science and TNC Florida state chapter, 2014-2015.

Mozambique WWF-CARE; Arkema leads natural capital assessment to support Primeras & Segundas Management Plan and Green Economy Initiative, 2013-2014.

The Nature Conservancy Global Marine Team, Florida, New York, New Jersey Chapter Initiatives; Arkema contributed to coastal vulnerability analysis to inform investments in restoration from U.S. RESTORE Act and post-Sandy recovery efforts 2013-present

Northern Andes and Southern Central America Program at The Nature Conservancy in Bogota, Colombia; Arkema leads assessment of green infrastructure investments for climate adaptation and eco-compensation, 2012-2013.

Incorporating Climate Adaptation Planning into Integrated Regional Water Management in Monterey and Santa Cruz Counties; Arkema contributed to coastal vulnerability analysis, 2010-2012

Marine Spatial Planning on the West Coast of Vancouver Island, British Columbia; Arkema scoped opportunity and contributed to ecosystem services analysis, 2009-2011

Selected working groups (a full list is available upon request)

United States Army Corps of Engineers (USACE)-led working group to develop “International Guidelines for Natural and Nature-based Features” 2016-present.

Science for Nature and People Partnerships (SNAP) working groups on “Aligning coastal habitat restoration with ecological and societal goals” at National Center for Ecological Analysis and Synthesis 2016-present.

Working group on Natural Capital and Resilience: Frontiers in research, tools, policy and practice. The Beijer Institute, The Royal Swedish Academy of Sciences. Stockholm, Sweden, February 2013.

Fulbright Nexus Scholar 2012-2013 Working Groups, Banff, Canada, Nov. 2012, Medellin, Colombia, April 2013, Washington DC, September 2013

International Workshop on Compensation for the Impacts of Infrastructure Project on Freshwater Ecosystems, The Nature Conservancy, Bogota Colombia, April 16-17, 2013

Technical working group on Ecosystems, Biodiversity, and Ecosystem Services: Assessing Climate Change Impacts and Evaluating Responses for United States National Climate Assessment, Moore Foundation, Palo Alto, 2012

Marine InVEST: Development and application of a suite of ecosystem service models to inform marine ecosystem-based management. The Natural Capital Project, Woods Institute for the Environment, Stanford University, 2008-2011

Global biodiversity modeling workshop. United Nations Environment Programme World Conservation Monitoring Centre, Cambridge, UK, 2009, 2010

Recipes for adaptation: marine management under climate change and ocean acidification. Jointly organized by Conservation International, NOAA, Boston University. Conservation International Offices, Arlington, VA, 2009

Center for Ocean Solutions Strategic Initiative Workshops, Marine and Coastal Ecosystem Health. Stanford University, Stanford, California, 2009

Managing for a Healthy California Current Ecosystem, The Environmental Law Institute. University of California, Berkeley 2008, NCEAS, Santa Barbara, CA 2007

Trainings led (full list of all trainings available upon request)

InVEST training Nassau, The Bahamas, December 2016 (~50 people)

Natural Capital Symposium, Stanford, 2011, 2014, 2015, 2016, 2017, 2018 (>300 people/year)

InVEST training Maputo, Mozambique, August 2013 (~40 people)

Integrating climate adaptation planning into coastal zone management with ecosystem services, Caribbean Regional Conference, Belize City, Belize, 2010, 2012 (~30 people)

InVEST Training, International Center for Tropical Agriculture, Cali, Colombia, 2009 (~25 people)

University Service as graduate student at UCSB

Advisory Council for Small Research Vessels, UCSB, 2006-2008

Co-chair and mentor, Women in Science and Engineering, UCSB, 2004-2007

Graduate Student Advisory Committee, UCSB, 2002-2008

Visiting Scientist, “Kids Do Ecology” Program for 5th graders, National Center for Ecological Analysis and Synthesis, UCSB, 2004

Docent, Rocky Intertidal, Hollister Ranch Conservation Association, 2004-2007

SELECTED PRESS COVERAGE *(full list available upon request)*

Related to Sustainable Development Plan for Andros Island, The Bahamas (2015-present)

- Biographic “Model Island” by David Butville, May, 2017
<http://www.biographic.com/posts/sto/model-island>
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