

# NADINE HECK

Ocean Sciences, University of California, Santa Cruz  
1156 High Street, Santa Cruz, CA 95064, nheck@ucsc.edu; nadineheck.com

## EDUCATION

- 2011 Ph.D. Geography, University of Leeds  
2005 M.S. Geography, University of Exeter (distinction)  
1999-2003 B.S. studies Geography, Geology & Biology (minors), University of Freiburg

## ACADEMIC POSITIONS

- 2019- Adjunct Lecturer, Santa Clara University, Environmental Studies  
2017- Assistant Project Scientist, University of California, Santa Cruz, Ocean Sciences  
2014-2016 Postdoctoral Research Associate, University of California, Santa Cruz, Marine Sciences  
2013-2014 Visiting Research Scholar, University of Florida/IFAS, Wildlife Ecology & Conservation  
2011-2014 Postdoctoral Research Associate, Cornell University, Department of Natural Resources  
2011 Research Fellow, University of Leeds, School of Geography  
2009-2010 Research Analyst, University of Leeds, Canadian Studies  
2002-2003 Research Assistant, University of Freiburg, School of Geography

## RESEARCH GRANTS

- 2019 International Climate Initiative (IKI), *Resilient Islands*, Co-PI, PI: S. Narayan, UC Santa Cruz, \$80,000  
2017-2019 NOAA Sea Grant, *Impediments and Opportunities for Coordinating Use of California's Coastal Ocean*, Co-Investigator, PI: Carrie Pomeroy, Carolyn Culver, UC San Diego, \$98,470  
2017-2018 International Climate Initiative (IKI) *Ecosystems, Risk, and Climate Adaptation – Fisheries, Food Security and Climate Change*, Co-Investigator, PI: Michael Beck, UC Santa Cruz, \$625,000  
2014-2017 NSF, *Coastal SEES*, Co-Investigator, PI: Adina Paytan, UC Santa Cruz, \$531,67  
2014 USFWS, *Social-Ecological Conservation Targets for the Peninsular Florida Landscape Conservation Cooperative*, Co-Investigator, PI: James Watling, University of Florida/IFAS, \$43,200  
2012-2014 Great Lakes Fishery Commission, *Pathogens and Invasive Species in the Great Lakes: Understanding Managers and Stakeholders' Responses*, Co-Investigator, PIs: Bruce Lauber, Richard Stedman, Cornell University, \$188,000  
2011-2013 Great Lakes Fishery Commission, *Human Dimension Research Needs for Great Lakes Fishery Management*, Co-Investigator, PIs: Dan Decker, Richard Stedman, Cornell University, \$200,000

## PENDING GRANTS

- 2019 National Science Foundation CHNS (Submitted), *Carbon Sequestration in Wetlands: An Interplay Between Human and Nature Controls*, Co-PI, UC Santa Cruz, \$1,624,445
- 2019 US Coastal Research Program (LOI submitted), *Assessing the Effectiveness of Adaptation Alternatives and Pathways to Reduce Coastal Risks for Local Economies in the Florida Keys*, Co-PI, UC Santa Cruz, \$300,000
- 2019 Belmont Forum (Pre-proposal submitted) Negotiating Ocean Conflicts among Rivals for Sustainable and Equitable Solutions (NO CRISES), C-PI, UC Santa Cruz, \$390,000 UC portion

## AWARDS AND SCHOLARSHIPS

- 2018 National Science Foundation, Coastlines and People, Travel Award, San Diego, CA
- 2014 National Science Foundation, Marine Research Network, Travel Award, Newport, OR
- 2010 Canadian Studies Centre University of Leeds, Postgraduate Award \$1,000
- 2009 Ocean Management Research Network, Student Travel Award, \$1,000
- 2008 Canadian Studies Centre, Postgraduate Award, \$1,000
- 2008 Social Science and Humanities Research Council (SSHRC) - Field Research Grant, \$1,700
- 2008 British Association for Canadian Studies, Travel Award, \$1,000
- 2007 Canadian Studies Centre Travel Award, \$1,000
- 2006 University of Leeds, University Research Scholarship, \$70,000
- 2003-2004 European Union, Erasmus Scholarship, University of Reading & Stockholm University

## PUBLICATIONS

### PEER-REVIEWED ARTICLES

- Lykkebo, K. **Heck, N.**, Reguero, B., Potts, D., Hovagimian, A., and Paytan, A. (2019) Environmental impacts of brine discharge - an in situ case-study from Carlsbad, *Water 11*: 208.
- Heck, N.**, Paytan, A., Potts, D.C., Haddad, B., and Lykkebo Peterson, K. (2018) Management preferences and attitudes regarding environmental impacts from seawater desalination: perspectives from a small coastal community, *Ocean and Coastal Management 163*: 22-29.
- Heck, N.**, Lykkebo Peterson, K., Potts, D.C., Haddad, B., and Paytan, A. (2018) Predictors of coastal stakeholders' knowledge about seawater desalination impacts on marine ecosystems, *Science of the Total Environment 639*: 785-792.
- Heck, N.**, Paytan, A., Potts, D.C., Haddad, B., and Lykkebo Peterson, K. (2017) Management priorities for seawater desalination plants in a marine protected area: a multi-criteria analysis, *Marine Policy 88*: 64-71.
- Heck, N.**, Paytan, A., Potts, D.C., and Haddad, B. (2016) Predictors of local support for a seawater desalination plant in a small coastal community, *Environmental Science and Policy 66*: 101-111
- Heck, N.**, Lauber, T.B., and Stedman, R. C. (2016) The spread of pathogens and aquatic invasive species in the Great Lakes basin: An application of the Drivers-Pressures-State-Impacts-Responses model, *Ocean and Coastal Management, 132*: 38-45.
- Heck, N.**, Stedman, R., and Gaden, M. (2016) Indicators to evaluate the social dimensions of the recreational fishery in the Great Lakes. *North American Journal of Fisheries Management 36* (3): 477-484.

- Heck, N.,** Paytan, A., Potts, DC, Haddad, B. (2016) Coastal residents' literacy about seawater desalination and its impacts on marine ecosystems in California, *Marine Policy* 68: 178-186.
- Heck, N.,** Stedman, R., and Gaden, M. (2016) Human dimensions' information needs of fishery managers in the Laurentian Great Lakes. *Journal of Great Lakes Research* 42(2): 319-327.
- Heck N.,** Stedman, R., and Gaden, M. (2015) The integration of social science information into Great Lakes fishery management: Opportunities and challenges. *Fisheries Research* 167: 30-37.
- Heck, N.,** Stedman, R., and Gaden, M. (2014) The Integration of Human Dimensions into Great Lakes Fishery Management. *HDRU Publication 14-2*. Department of Natural Resources, N.Y.S. College of Agriculture and Life Science, Cornell University, Ithaca, NY.
- Heck, N.,** and Lauber, B. (2013) Pathogens and Invasive Species in the Great Lakes: Understanding Manager Responses. *HDRU Publication 13-9*. Dep. of Natural Resources, N.Y.S. College of Agriculture and Life Science, Cornell University, Ithaca, NY.
- Heck, N.** and Dearden P. (2012) Local Expectations for Future Marine Protected Area Performance: A Case Study of the Proposed National Marine Conservation Area in the Southern Strait of Georgia, Canada, *Coastal Management* 40: 577-593.
- Heck, N.** and Dearden P., and McDonald, A. (2012) Stakeholder evaluation priorities for demonstrating marine protected effectiveness at Pacific Rim National Park Reserve, Canada, *Coastal Management* 40 (1): 55-72.
- Heck, N.** and Dearden P., and McDonald, A. (2012) Insights into marine conservation efforts in temperate regions: marine protected areas on Canada's West Coast, *Ocean and Coastal Management* 57 (1): 10-20.
- Heck, N.,** Dearden, P., and McDonald, A. (2011) Stakeholders' expectations towards a proposed marine protected area: a multi- criteria analysis of preferred performance criteria, *Ocean and Coastal Management* 54 (9): 687-695.
- Heck, N.,** Dearden, P., McDonald, A., and Carver, S. (2011) Stakeholder opinions on the assessment of MPA effectiveness and their interests to participate at Pacific Rim National Park Reserve, Canada, *Environmental Management* 47 (4): 603-616.
- Heck, N.,** Dearden, P., McDonald, A., and Carver, S. (2011) Developing MPA performance indicators with local stakeholders' input in the Pacific Rim National Park Reserve, Canada, *Biodiversity and Conservation* 20 (4): 895- 911.
- Gössling, S., Kunkel, T., Schumacher, K., **Heck, N.,** Birkemeyer, J., Froese, J., Naber, N., and Schliermann, E. (2004) A target group-specific approach to "green" power retailing: students as consumers of renewable energy, *Renewable and Sustainable Energy Reviews* 9: 69- 83.
- Gössling, S., Berger, R., **Heck, N.,** and Morell, M. (2004) Tourism and street children in Antananarivo, Madagascar, *Tourism and Hospitality Research* 5 (2): 131- 50.

## **TECHNICAL REPORTS**

- Heck, N.,** Narayan, S. and Beck, M. W. (2019) *Co-Benefits of Mangroves and Coral Reefs in the Caribbean*, The Nature Conservancy.
- Heck, N.** Beck, M. W., V. Agostini, V., B. Reguero, K. Pfliegner, P. Mucke, L. Kirch (2019) *Fisheries at Risk - Vulnerability of Fisheries to Climate Change*. The Nature Conservancy.

**Heck, N., Stedman, R., and Gaden, M. (2014) *Human Dimension Research Needs for Great Lakes Fishery Management*, Great Lakes Fishery Commission, Ann Arbor, MI.**

**Heck, N. (2009) *Academic Relations with Canadian Institutions*, Centre of Canadian Studies, University of Leeds.**

**Heck, N. (2008) Marine Protected Areas in Canada: How can the research community help?, *OMRN MPA Working Group Report*.**

## **BOOK CHAPTERS**

Haddad, B., **Heck, N.**, Paytan, A., Potts, D. (2018) Social issues and public acceptance of seawater desalination plants, *Sustainable Desalination Handbook*, Elsevier.

## **TEACHING & MENTORING**

### **TEACHING**

#### **Santa Clara University**

2019 Environment and Development, Undergraduate, Instructor

#### **Middlebury Institute of International Studies at Monterey**

2018 Sustainable Coastal Management, Graduate, Guest Lecturer

#### **University of California Santa Cruz**

2019 Fisheries and Climate Change, Graduate, Guest Lecturer

2018 Water Resources, Human Rights, and Sustainability, Undergraduate, Guest Lecturer

2015 Communicating Ocean Sciences, Visiting Instructor

#### **Cornell University**

2014 Current Perspectives of Marine Conservation, Undergraduate, Instructor

2013 Society and Natural Resources, Undergraduate, Guest Lecturer

#### **University of Leeds**

2008-2010 Analytical Skills in Physical Geography, Undergraduate, Teaching Assistant

2006 Climate Change: Science and Society, Graduate, Teaching Assistant

### **STUDENT ADVISING**

2016 Kaylee Glenney, B.Sc. Environmental Studies, UC Santa Cruz

2016 Samuel Pelham, B.Sc. Environmental Studies and Economics, UC Santa Cruz

2016 Sarah Faraola, B.Sc. Earth and Planetary Sciences, UC Santa Cruz

2016 Brolin Mirza, B.Sc., California State University, Stanislaus

### **TEACHING DEVELOPMENT & CERTIFICATES**

2013 Teaching in Higher Education, Cornell University

2013-2014 5 Teaching Certificates, Center for Teaching Excellence, Cornell University

2012-2014 Faculty Seminars & Workshops, Center for Teaching Excellence, Cornell University

2012 - 2014 Graduate Student Seminar, Mentoring of PhD and MS students, Cornell University

## WORKSHOPS, WORKING GROUPS & PRESENTATIONS

### INVITED WORKSHOPS, PRESENTATIONS & PANELS

- 2019 Aquaculture Panel, *Coastal and Marine Policy* (Invited), University of California, Santa Cruz
- 2018 *Vulnerability of Fisheries to Climate Change - A Global Assessment* (Invited), Pacific Islands Fishery Science Centre, Honolulu, HI
- 2018 National Science Foundation, *Coastlines and People* (Invited), San Diego, CA

### WORKING GROUPS

- 2018 Developing Socioeconomic Indicators for NOAA's National Coral Reef Monitoring Program, NOAA

### CONFERENCE PRESENTATIONS

- Heck, N.,** Pomeroy, C. and Culver, C. (2019) Integrating aquaculture & fisheries space use values and needs into siting decisions, *Society for Applied Anthropology Annual Meeting*, March 19-23, Portland, OR.
- Lykkebo Petersen, K., **Heck, N.,** Paytan, A., and Potts, D.C. (2017) Desalination brine discharge impacts on coastal biology and water chemistry - a case study from Carlsbad Southern California. *AGU Fall Meeting*, 11-15 December, New Orleans, LA.
- Heck, N.,** Stedman, R., and Gaden, M. (2017) The goals for and challenges of incorporating HD information into fishery management. *8<sup>th</sup> World Recreational Fishing Congress*, July 16-20, Victoria, BC.
- Faraola, S., **Heck, N.,** Mirza Ordshahi, B., and Paytan, A. (2016) Coastal Residents Ocean Literacy about Seawater Desalination and its Impacts on Marine Ecosystems in the Monterey Bay. *AGU Fall Meeting*, 12-16 December, San Francisco, CA.
- Lykkebo Petersen, K., **Heck, N.,** Paytan, A., and Potts, D.C. (2016) Impacts of effluent from Carlsbad Desalination Plant on the coastal biology and chemistry in a *in-situ* study of pre- and post-discharge. *AGU Fall Meeting*, 12-16 December, San Francisco, CA.
- Heck, N.,** Paytan, A., and Potts, D. (2016) Coastal Residents' Perception of Seawater Desalination and Its Impacts on Coastal Ecosystems, *Association of American Geographers Annual Meeting*, 29 March -02<sup>nd</sup> April 2016, San Francisco, CA.
- Heck, N.,** Paytan, A., and Potts, D. (2016) Coastal Residents' Perception of Seawater Desalination and Its Impacts on Coastal Ecosystems, *Ocean Sciences Meeting*, 21-26th February 2016, New Orleans, LA.
- Peterson, K., Paytan, A., Potts, D., and **Heck, N.** (2016) Impacts of effluent from Carlsbad Desalination Plant on the coastal biology and chemistry - a in-situ study of pre- and post-discharge, *Ocean Sciences Meeting*, 21-26th February 2016, New Orleans, LA.
- Johnson, K., Klain, S, **Heck, N.,** and Spalding, A. (2015) Towards Untangling Social-Ecological Choices: A Transdisciplinary Approach to Determine the Key Drivers of Fishing Effort in the US West Coast Groundfish Fishery, *145th American Society Fisheries Meeting*, August 16-20, Portland, OR.

- Stedman, R., **Heck, N.**, and Gaden, M. (2015) Human Dimensions of Great Lakes Fisheries: Managers' Information Needs, *58th Annual Conference on Great Lakes Research*, International Association for Great Lakes Research, May 25-29th, Burlington, VT.
- Heck, N.**, Paytan, A., Potts, D., and Haddad, B. (2015) Coastal SEES: Brine discharge from desalination plants, *NSF Coastal SEES PI Meeting*, January 29-30th, 2015 at NSF Headquarters in Arlington, VA.
- Heck, N.**, Stedman, R., and Gaden, M. (2013) Integration Human Dimensions into Great Lakes Fishery Management: Opportunities and Challenges, *25<sup>th</sup> International Congress for Conservation Biology*, July 21-25, Baltimore, MD.
- Heck, N.**, Stedman, R., and Gaden, M. (2013) Human Dimension information needs for Great Lakes Fishery Management, *19<sup>th</sup> International Symposium on Society and Resource Management*, June 4-8, Estes Park, CO.
- Heck, N.** (2010) Defining success: Stakeholders' opinion in two MPA sites on Canada's West coast, *24th International Congress for Conservation Biology*, July 3-7, Edmonton, AB.
- Heck, N.**, (2009) How to measure MPA success - a stakeholders' perspective in the Pacific Rim National Park Reserve, *Ocean Management Research Network National Conference*, October 21-24, Ottawa, ON.
- Dearden, P., **Heck, N.**, and Gray, D. (2009) Global Context for MPAs, *Marine Protected Areas in British Columbia meeting: Where are We Going and How Do We Get There?*, October 6-7, Duncan, BC.
- Heck, N.** (2009) Stakeholders' opinions on MPA performance and evaluation needs in the Pacific Rim National Park Reserve, *1st International Marine Conservation Congress*, May 19-24, Washington, DC.

## SERVICE

### CONFERENCE ACTIVITIES

- |      |   |
|------|---|
| 2016 | Conference Session Chair, Coastal and Marine Session, <i>Association of American Geographers Annual Meeting</i> , San Francisco, CA.  |
| 2016 | Conference Session Co-chair, A holistic discussion on the impacts of seawater desalination on the marine environment: research, monitoring, Town Hall, <i>Ocean Sciences Meeting</i> , New Orleans, LA. |
| 2016 | Conference Session Co-chair, The Impact of Seawater Desalination on the Marine Environment, Poster Session, <i>Ocean Sciences Meeting</i> , New Orleans, LA.  |

### REVIEWER

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| Journals | Conservation Letters, Science of the Total Environment, Environmental Science and Policy, Marine Policy, Environmental Management, Journal of Environmental Planning and Management, Ocean and Coastal Management, Environmental Monitoring and Assessment, Journal of Great Lakes Research, Coastal Management, Human Dimensions of Wildlife, Management of Biological Invasions |
| Books    | <i>Marine Environmental Impact of Seawater Desalination</i> , proposal, Elsevier, 2016  |
| Grants   | Great Lakes Fishery Commission, 2014  |

## SCIENCE COMMUNICATION AND OUTREACH

- 2018-2021 Waste FEW ULL, Belmont Forum - NSF, University of California, Santa Cruz  
2018 Expanding Your Horizon, Hartnell College, Salinas, CA  
2014 Ocean science outreach, University of California, Santa Cruz  
2013-2014 HDRU fishery management outreach, Cornell University

## MEMBERSHIPS IN PROFESSIONAL ORGANIZATIONS

- Conservation GIS
- International Association of the Sciences of Limnology and Oceanography
- International Association for Society and Natural Resources
- American Association of Geographers
- Valuing Nature Network
- Society for Conservation Biology

## AFFILIATIONS

- 2014- Institute of Marine Sciences, University of California, Santa Cruz  
2011-2014 Human Dimensions Research Unit, Natural Resources, Cornell University  
2010- Yorkshire Network for Canadian Studies  
2008-2011 Water@Leeds Research Group, University of Leeds  
2008-2011 Marine Protected Area Research Group, University of Victoria

## SOFTWARE SKILLS

ArcGIS, SPSS, R, Qualtrics, ENVI, SeaDAS, QGIS, Minitab, Expert Choice, Ucinet, Atlas.ti, Microsoft office

## REFERENCES

**Adina Paytan**, Research Professor, Institute of Marine Sciences, UC Santa Cruz, 831-459-1437, apaytan@ucsc.edu

**Donald Potts**, Professor, Ecology and Evolutionary Biology, UC Santa Cruz, 831-459-5063, potts@ucsc.edu

**Michael W. Beck**, Research Professor, Institute of Marine Sciences, UC Santa Cruz, 831-459-1459, mwbeck@ucsc.edu

**Brent Haddad**, Professor, Environmental Studies, UC Santa Cruz, 831-331-0654, bhaddad@ucsc.edu