

ERICA R. STAATERMAN, PhD

BIOACOUSTICIAN

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CURRENT POSITION:

2017- present *Bioacoustician* in the Office of Environmental Programs at the Bureau of Ocean Energy Management. I conduct environmental reviews on the impacts of oil and gas activities in the U.S. Outer Continental Shelf, with a specific focus on noise-producing activities. I also serve on inter-agency and international working groups that aim to address this issue and build better strategies for managing acoustic impacts to wildlife.

EDUCATION:

2015-2017 *Post-Doctoral Fellow* with Smithsonian Institution's MarineGEO program. Research focused on the relationships between marine soundscapes and biodiversity, as well as impacts of anthropogenic noise on fishes. Advisors: Dr. Matt Ogburn, Dr. Denise Breitburg, Dr. Andrew Altieri.

2010-2015 *PhD*, University of Miami, Rosenstiel School of Marine and Atmospheric Sciences Applied Marine Physics & Marine Biology (interdisciplinary). Advisor: Dr. Claire Paris
Dissertation title: Temporal and spatial patterns in coral reef soundscapes and their relevance to larval fish orientation

2002-2006 *B.S. with distinction*, Biology, Duke University

RESEARCH INTERESTS

Soundscape ecology, acoustic communication, acoustic stress, animal behavior, human impacts, species' response to environmental change, time-series analysis, science communication & outreach

PEER-REVIEWED PUBLICATIONS:

18. Deichmann, J. L., Acevedo-Charry, O., Barclay, L., Burivalova, Z., Campos-Cerqueira, M., d'Horta, F., Game, E. T., Gottesman, B. L., Hart, P. J., Kalan, A. K., Linke, S., Do Nascimento, L. D., Pijanowski, B., Staaterman, E., Aide, T. M. 2018 It's time to listen: there is much to be learned from the sounds of tropical ecosystems. *Biotropica* 2018: 1-6.

17. Maxwell, R. J., Zoldero, A. J., de Bruijn, R., Brownscombe, J. W., Staaterman, E., Gallagher, A. J., and Cooke, S. J. 2018. Does motor noise from recreational boats alter parental care behavior of a nesting freshwater fish? *Aquatic Conservation* 2018:1-10.

16. Staaterman, E., Brandl, S., Hauer, M., Casey, J., and Rice, A. N. 2018. Individual voices in a cluttered soundscape: Acoustic Ecology of the Bocon toadfish, *Amphichthys cryptocentrus*. *Environmental Biology of Fishes* 101 (6): 979-995.

15. Staaterman, E., Ogburn, M. B., Altieri, A. H., Brandl, S. J., Whippo, R., Seemann, J., Goodison, M., and Duffy, J. E. 2017. Bioacoustic measurements compliment visual biodiversity surveys across four shallow marine habitats. *Marine Ecology Progress Series*: 575: 207-215.
14. Staaterman, E. 2016. Passive acoustic monitoring in benthic marine crustaceans: A new research frontier. In: Au, W. L, and Lammers, M. O. (Eds). Listening in the Ocean. Springer, New York. 416p.
13. Gallagher A. J., Staaterman E. R., Cooke S. J., Hammerschlag N. 2016. Behavioral responses to fisheries capture among various shark species reveal mechanisms of species-specific sensitivity. *Canadian Journal of Fisheries and Aquatic Sciences*. doi:10.1139/cjfas-2016-0165
12. Gallagher, A. J., Staaterman, E., and Dreyer, N. 2015. Kelp gulls prey on the eyes of juvenile Cape fur seals in Namibia. *African Journal of Marine Science*, 37:3.
11. Staaterman, E., Paris, C. B., and Kough, A. S. 2014. First evidence of fish larvae producing sounds. *Biology Letters*, 10: 20140643.
10. Staaterman, E., Paris, C. B., DeFerrari, H. A., Mann, D. A., Rice, A. N., and D'Alessandro, E. K. 2014. Celestial Patterns in Marine Soundscapes. *Marine Ecology Progress Series*, 508:17-32.
9. Staaterman ER, Bhandiwad AA, Gravinese PM, Moeller PM, Reichenbach ZC, Shantz AA, Shiffman DS, Toth LT, Warneke AM, Gallagher AJ. 2014. Lights, camera, science: The utility and growing popularity of film festivals at scientific meetings. *Ideas in Ecology and Evolution*. 7:11-16.
8. Kough, A. S., Paris, C. B. and Staaterman, E. 2014. The in situ swimming and orientation behavior of spiny lobster (*Panulirus argus*) postlarvae. *Marine Ecology Progress Series*, 504:207-219.
7. Staaterman, E., and Paris, C. B. 2014. Modeling larval fish navigation: The way forward. *ICES Journal of Marine Science*, 71(4): 918-924.
6. Staaterman, E., Rice, A. N., Mann, D. A., and Paris, C. B. 2013. Soundscapes from a Tropical Eastern Pacific reef and a Caribbean Sea reef. *Coral Reefs*. 32:553-557.
5. Staaterman, E., Paris, C. B., Helgers, J. 2012. Orientation behavior in fish larvae: a missing piece to Hjort's critical period hypothesis. *J. Theoretical Biology*. 304:188-196.
4. Staaterman, E., Clark, C. W., Gallagher, A., Claverie, T., deVries, M., and Patek, S. N. 2012. The acoustic ecology of the California mantis shrimp. In: Popper, A. N. and Hawkins, A. eds. *Effects of Noise on Aquatic Life*. Springer Science+Business Media, LLC, New York.

3. Staaterman, E., Clark, C. W., Gallagher, A., Claverie, T., deVries, M., and Patek, S. N. 2011. Rumbling in the benthos: acoustic ecology of the California mantis shrimp (*Hemisquilla californiensis*). *Aquatic Biology* 13: 97-105 (*Featured article, cover story*).

2. Staaterman, E., Claverie, T., and Patek, S. N. 2009. Disentangling defense: the function of spiny lobster sounds. *Behaviour*. 147(2):235-258.

1. Patek, S. N., Shipp, L. E., and Staaterman, E. R. 2009. The acoustics and acoustic behavior of the California spiny lobster (*Panulirus interruptus*). *Journal of the Acoustical Society of America* 125(5):3434-3443.

PRESENTATIONS AND PUBLISHED ABSTRACTS:

Staaterman, E. Ogburn, M. B., Altieri, A. H., Brandl, S. J., Whippo, R., Seemann, J., Goodison, M., and Duffy, J. E. Do bioacoustics conditions reflect species diversity? A case study from four tropical marine habitats. Invited presentation at the Acoustical Society of America conference, Boston MA, June 2017.

Staaterman, E. and Paris, C. B. Underwater auditory scenes near coral reefs. Oral presentation at the Acoustical Society of America conference, Pittsburgh, PA, May 2015

Staaterman, E., Paris, C. B., and Kough, A. S. First evidence of fish larvae producing sounds. Oral presentation at *Society for Integrative and Comparative Biology* meeting, West Palm Beach, FL, January 2015.

Staaterman, E. and Gallagher, A. J. Lights, Camera, Science: Scientific Filmmaking Inspires Public Audiences. Oral presentation at the *Benthic Ecology Meeting*, Jacksonville, FL, March 2014.

Staaterman, E. "Rumbles in the Deep." Oral presentation at *TEDxCoconutGrove*, February 2014.
https://www.youtube.com/watch?v=1_MzDMFFag8

Staaterman, E. and Gallagher, A. J. Making your science sing: the use of film as a science communication tool. Interactive presentation at the *Science Online Oceans* Conference, Miami FL, October 2013.

Staaterman, E., Paris, C. B., Kough, A. S., Lindeman, K., Claro, R. and Kourafalou, V. Effects of inter-annual climatology on larval transport from snapper spawning aggregations in Cuba. Oral presentation at the *Larval Fish Conference*, Miami FL, June 2013.

Staaterman, E., Clark, C. W., Gallagher, A., Claverie, T., deVries, M., and Patek, S. N. Ocean Rumbles: of Nature and Man. Poster presentation at "50 Years of Bioacoustics" meeting, Sarasota FL, May 2013.

Staaterman, E., Rice, A.N., Mann, D.A., and Paris, C. B. A Song of Two Seas: Soundscapes from a tropical Eastern Pacific Reef and a Caribbean Sea Reef. Oral presentation at the *Benthic Ecology Meeting*, Savannah GA, March 2013.

Staaterman, E., Paris, C. B., Helgers, J. Orientation behavior in fish larvae: a missing piece to Hjort's "critical period" hypothesis. Oral presentation at the *Larval Fish Conference*, Os, Norway, July 2012.

Staaterman, E., DeFerrari, H., and Paris, C. B. Snap, crackle, pop: Listening to Florida's Reefs. Oral presentation at *Benthic Ecology Meeting*, Norfolk VA, March 2012.

Staaterman, E., Clark, C. W., Gallagher, A., Claverie, T., deVries, M., and Patek, S. N. Ocean Rumbles: of Nature and Man. Poster presentation at *Society for Environmental Journalism Meeting*, Miami FL, September 2011.

Staaterman, E., Paris, C. B., Sponaugle, S., and Walter, K. How do soundscapes influence settlement patterns of coral reef fish? Oral presentation at *American Fisheries Society Meeting*, Seattle, WA, September 2011.

Staaterman, E., Clark, C. W., Gallagher, A., Claverie, T., deVries, M., and Patek, S. N. The acoustic ecology of the California mantis shrimp. Oral presentation at *Acoustic Communication in Animals* conference, Ithaca NY, August 2011.

*Staaterman, E., Claire B. Paris, Matthieu Le Hénaff, Zachary M. Aman, Ajit Subramaniam, Judith Helgers, Dong-Ping Wang, Vassiliki H. Kourafalou, Ashwanth Srinivasan. Three-dimensional simulations of the fate and extent of the Macondo well blowout in the Gulf of Mexico. Oral presentation at the *Benthic Ecology Meeting*, March 2011. *note: I presented this work on behalf of the team of scientists (the other authors), but was not directly involved in the research.

Staaterman, E., Clark, C. W., Gallagher, A., Claverie, T., deVries, M., and Patek, S. N. The acoustic ecology of the California mantis shrimp. Oral presentation at the *Effect of Noise on Aquatic Life* conference in Cork, Ireland, August 2010.

Staaterman, E., and Patek, S. N. 2010. The acoustic ecology of the California mantis shrimp. Oral presentation at the *Benthic Ecology Meeting*, March 2010.

Staaterman, E., Claverie, T., and Patek, S. N. 2009. Anti-predator startle signal of the California spiny lobster. Oral presentation at the *Society for Integrative and Comparative Biology* meeting, January 2009.

Staaterman, E., Claverie, T., and Patek, S. N. 2008. Acoustic antipredator signals of the California spiny lobster. Poster presented at *Acoustic Communication in Animals* conference, Corvallis Oregon, August 2008.

GRANTS & AWARDS:

2015-2017	Smithsonian MarineGEO Program; Post-Doctoral Fellowship
2015	Acoustical Society of America Meeting; first-place for best student talk
2014	RSMAS Graduate Career Fund; \$1,100

2010-2013	National Science Foundation; Graduate Research Fellowship; \$125,000
2013	Partner University Fund; support to complete coursework in Villefranche-sur-Mer, France, \$6,000
2013	Benthic Ecology Meeting; second-place award for best student talk
2012	Larval Fish Conference; honorable mention for Sally Richardson Award
2011-2012	National Geographic Society; “Rumbling in the Benthos: acoustics and human impacts in mantis shrimp”; \$30,000

TEACHING AND MENTORING:

2014	Instructor; “Manuscript Writing Skills,” a graduate-level course on scientific writing
2013	Teaching Assistant; “Introduction to Oceanography”; Instructor: Dr. Harry DeFerrari
2013	Mentor; high-school science intern at University of Miami

SELECTED PROFESSIONAL EXPERIENCE:

2010-2015	Graduate Assistant, Dr. Claire Paris, University of Miami. Study species: larval fish
2008-2010	Laboratory Manager for Dr. Sheila Patek; University of Massachusetts, Amherst & University of California, Berkeley. Study species: mantis shrimp
2007-2008	Research and Development Assistant. Friends of the Earth. San Francisco, CA
2005-2006	Research Assistant, Dr. Liz Brannon. Duke Primate Center, Durham NC. Study species: lemurs
2005	Research Assistant, Rohan Currey. University of Otago, Dunedin, New Zealand. Study species: dolphins
2004	Research Assistant, Dr. David Hyrenbach. Duke Marine Lab, Beaufort, NC. Study species: pelicans, gulls, terns
2004	Research Assistant, Dr. Dan Rittschof. Duke Marine Lab, Beaufort, NC. Study species: blue crabs
2004	REU, Dr. John Harte. Rocky Mountain Biological Lab, Gothic, CO. Study species: fir trees
2008- present	Research expeditions to the Florida Keys, Catalina Island (WIES), Hawaii (HIMB), Panama (STRI), French Polynesia (GUMP), and Australia (Lizard Island)

QUANTITATIVE SKILLS:

2013	Completed coursework, “Multivariate Statistics”, Observatoire Oceanologique of Universite Pierre et Marie Curie, in Villefranche-sur-mer, France
2013	Completed coursework, “General Linear Models”, University of Miami
2011-present	Biophysical modeling with the Connectivity Modeling System
2010-present	Computer coding with Matlab and R
2009 -present	Acoustic analysis with Raven & XBAT

COMMUNICATION & OUTREACH

2009- present Vice President and Director. Beneath the Waves[®], Inc. www.beneaththewaves.org, a global science communication platform & registered 501-c-3 organization. Our mission is to raise public awareness about ocean conservation and science through the use of videos and digital media.

Responsibilities include: organizing our global festivals, coordinating our annual film submission process, communicating with festival hosts and filmmakers, fundraising, strategic planning, and managing our team of 15 volunteers.

Filmmaking:

2017 Producer – “Paradise Trashed,” a short film in English and Spanish about the plastic pollution problem in Bocas del Toro, Panama. <https://www.youtube.com/watch?v=-6Sh2UCasU8>

2012 Producer – “Sonic Reef,” a short film about my PhD research. Winner of a third-place award from National Science Foundation: <https://www.youtube.com/watch?v=tBCmIG7zKmU>

2011 Co-producer – “Sound Affects,” a film about animal sounds and anthropogenic noise in the ocean: <http://vimeo.com/34804727>

2011 Producer – “Mini-Season,” a short film about the impacts of Florida’s recreational lobster season: <https://www.youtube.com/watch?v=N43vM2N7evc>

2010 Producer – “Stomatopoda,” a short film about field work in the Patek Lab: <https://www.youtube.com/watch?v=EHD4ozlwjk>

Invited talks and seminars:

2016-2017 “Three surprising examples of acoustic communication”, Invited seminars at University of Victoria, Canada and University of Maryland

2015 Plenary speaker for “Kids Inquiry Conference”, Pinecrest School, Ft. Lauderdale, FL

2014 Nerd Night in Miami: “Mysterious sounds from marine critters”

2014 TEDxCoconutGrove: <http://www.youtube.com/watch?v=Eb3gURP8wH8>

2013-2014 “Life in Moving Fluids”, guest lecture

2013-2014 “Ocean Measurements”, guest lecture

2013 Science Lives, “Tuning in to Ocean Sounds”, <http://www.livescience.com/26895-undersea-sounds-erica-staaterman-nsf-sl.html>

2012 “What we can learn from listening to the ocean”, Miami Lighthouse School for the Blind

2012-2013 MarineXplore, contributing writer, www.marinexplore.com

2009 Discovery Channel Canada, “Freaks of Nature” program about research in the Patek Lab: <http://watch.discoverychannel.ca/daily-planet/january-2010/daily-planet---january-18-2010/#clip257056>

PROFESSIONAL SERVICE:

Manuscript reviewer:

- Proceedings of the Royal Society, B

- Ecology
- Ecological Complexity
- Ecological Modeling
- Environmental Management
- Functional Ecology
- Journal of Experimental Biology
- Scientific Reports
- PLoS One
- Marine Ecology Progress Series
- Crustaceana
- Biological Bulletin

Professional memberships:

- Acoustical Society of America
- Benthic Ecology Society
- Society for Integrative and Comparative Biology