


SHANNON RICCI

Interests: data analysis, data visualization, marine benthic biology and ecology, conservation, invertebrate fisheries, passive acoustics, informal environmental science education



EDUCATION


2022
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2018

- **PhD Student, Geospatial Analytics**
North Carolina State University  Raleigh, NC
 - Working on characterization and interpretation of marine soundscapes
 - Advisor: Dr. DelWayne Bohnenstiehl

2015
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2013

- **M.S., Biological Oceanography**
North Carolina State University  Raleigh, NC
 - Thesis: Spatiotemporal soundscape patterns and processes in an estuarine reserve
 - Advisor: Dr. David Eggleston


2012
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2008

- **B.S., Marine Science, Marine Biology concentration**
University of Maine  Orono, ME
 - Thesis: Salinity tolerance of the oyster mudworm *Polydora websteri*




RESEARCH EXPERIENCE


2020
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2018

- **PhD Dissertation Research**
Geophysics & Acoustics Lab  North Carolina State University
 - Develop automated acoustic data processing techniques
 - Characterize and interpret marine soundscapes

2018
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2016

- **Research Technician**
Marine Ecology & Conservation Lab  North Carolina State University
 - Processed, analyzed, synthesized, and published soundscape and other group research
 - Assisted with the design and analysis of a variety of lab group research projects
 - Mentored incoming students in soundscape data analysis techniques

2015
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2013

- **MS Thesis Research**
Marine Ecology & Conservation Lab  North Carolina State University
 - North Carolina Sea Grant/NC Coastal Reserve Coastal Research Fellow
 - Field: Designed and performed soundscape characterization of NC Coastal Reserve
 - Lab: Designed and performed experiments investigating oyster settlement response to habitat associated sound

CONTACT

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 [swricci](#)

 github.com/swricci

 (845) 803-2019

SKILLS

MATLAB

R

ArcGIS Pro

QGIS

Made with the R package [page-down](#).

The source code is available at
github.com/nstrayer/cv.

Last updated on 2019-10-23.

- 2015
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2013

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Graduate Research Assistant
 Marine Ecology & Conservation Lab

📍 North Carolina State University

 - Assisted with lab and field experiments including: oyster restoration monitoring, fouling organism study, modeling larval dispersal of deep-sea larvae

- 2012
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2009

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Student Laboratory/Research Technician
 University of Maine

📍 Orono, ME

 - Assisted with lab and field projects investigating how injury level in marine worms impacts food web dynamics in mudflats
 - Conducted lab-based experiment to treat an infestation of marine worms in local aquacultured oysters
 - Advisors: Dr. Sara Lindsay, Dr. Paul Rawson, Mick Devin

- 2011

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NSF Research Experience for Undergraduates
 University of Delaware

📍 Lewes, DE

 - Project: Spawning site characteristics of horseshoe crabs along two beaches in the DE Inland Bays
 - Advisor: Dr. Doug Miller



TEACHING & OUTREACH EXPERIENCE

- 2018
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2014

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SciREN
 Science Research and Education Network

 - Developed standards-aligned lesson plans for teachers based on research

- 2016

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Beyond Show and Tell Workshop
 North Carolina State University

📍 Raleigh, NC

 - Co-instructor (Dr. Holly Menninger)
 - Taught communications skills to faculty and graduate students
 - Assisted in development of research inspired hands-on activities for NC Science Festival Events

- 2015
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2013

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Introduction to Oceanography (Lab)
 North Carolina State University

📍 Raleigh, NC

 - TA
 - Designed lesson plans on Ocean Acoustics and Marine Bioacoustics
 - Revised lab lecture PowerPoint slides to improve student learning



- 2015
|
2014

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Engaging the Public in Science
 North Carolina Museum of Natural Sciences

📍 Raleigh, NC

 - Program participant
 - Learned to more effectively communicate scientific research to a variety of audiences through a series of classes and workshops

- 2013 ● **Environmental Education Intern**
 Smithsonian Environmental Education Center  Edgewater, MD
- Led PreK - 8, scout groups, and public environmental education programs about estuaries and wetlands
 - Created informational displays for the center highlighting SERC research and opportunities
 - Maintained data collected by school groups for future use by students and teachers
- 2013 | 2012 ● **Education Intern**
 Center for the Urban River  Yonkers, NY
- Assisted educators with programs (seining, marsh scavenger hunt, water clean-up, fish identification) for student and scout groups
 - Formerly Beczak Environmental Education Center







PUBLICATIONS

- 2019 ● **Fish community structure, habitat complexity, and soundscape characteristics of patch reefs in a tropical, back-reef system**
 Marine Ecology Progress Series
- Lyon RP, Eggleston DB, Bohnenstiehl DR, Layman CA, Ricci SW, Allgeier JE
- 2018 ● **Investigating the utility of ecoacoustic metrics in marine soundscapes**
 Journal of Ecoacoustics
- Bohnenstiehl DR, Caretti O, Lyon RP, Ricci SW, Eggleston DB
- 2017 ● **Oyster toadfish (*Opsanus tau*) boatwhistle call detection and patterns within a large-scale oyster restoration site**
 PLoS ONE
- Ricci SW, Bohnenstiehl DR, Eggleston DB, Kellogg ML, Lyon RP
- 2017 ● **Use of underwater soundscapes to characterize nocturnal fish behavior and habitat use within a complex mosaic of estuarine habitats.**
 Bulletin of Marine Science
- Ricci SW, Eggleston DB, Bohnenstiehl DR
- 2016 ● **Temporal soundscape patterns and processes in an estuarine reserve**
 Marine Ecology Progress Series
- Ricci SW, Eggleston DB, Bohnenstiehl DR, Lillis A



SELECTED PRESENTATIONS

- 2017 ● **Application of a fish call detection tool to assess oyster reef restoration success**
 Benthic Ecology Meeting  Myrtle Beach, SC

- 2016 • Use of underwater soundscapes to characterize nocturnal fish behavior and habitat use within an estuarine reserve
Benthic Ecology Meeting  Portland, ME
- 2015 • Use of underwater soundscapes to characterize nocturnal fish behavior and habitat use within an estuarine reserve
Int'l Symposium on Fish at Night  Miami, FL
- 2015 • Spatiotemporal patterns in the soundscapes of a coastal marine reserve
Benthic Ecology Meeting  Quebec City, Quebec, Canada

COMMUNITY ENGAGEMENT

- 2017 | 2016 • Triangle Science and Technology Expo - exhibitor
North Carolina Museum of Natural Sciences
- 2016 • Sustainability Symposium, presenter
North Carolina State University
- 2015 • Meet the Scientist, presenter
North Carolina Museum of Natural Sciences
- 2015 • Science Day, presenter
Fletcher Academy
- 2014 • Sound in the Sea Day, presenter
Duke University Marine Lab
- 2014 • National Ocean Sciences Bowl
Blue Heron & Nor'easter Bowls
- 2013 • Family Science Day, presenter
Morehead Planetarium

SELECTED PRESS (BY)

- 2015 • Music in the Marsh: Summer Soundscapes of the Rachel Carson Reserve¹
Coastwatch, NC Sea Grant
• Popular science article about my master's thesis research characterizing underwater sound in an estuarine reserve

LINKS

¹: <https://ncseagrant.ncsu.edu/coastwatch/previous-issues/2015-2/summer-2015/music-in-the-marsh-the-summer-soundscapes-of-the-rachel-carson-reserve/>