




SHANNON RICCI



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

View this CV online with links at <https://swricci.github.io/my-cv/>





EDUCATION

- current | 2018**
 - **PhD Candidate, Geospatial Analytics**
North Carolina State University  Raleigh, NC
 - Advancing the characterization and interpretation of marine soundscapes through development of automated data processing techniques and integration of satellite imagery
 - Advisor: Dr. DelWayne Bohnenstiehl
- 2015 | 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 | 2008**
 - **B.S., Marine Science, Marine Biology concentration**
University of Maine  Orono, ME
 - Thesis: Salinity tolerance of the oyster mudworm *Polydora websteri*

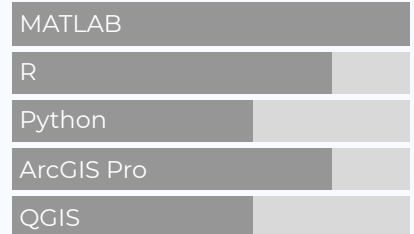
RESEARCH EXPERIENCE

- current | 2021**
 - **Graduate Research Assistant**
Data Science Academy  North Carolina State University
 - Provide data science analytics support to researchers and students at NC State
 - Consult on aspects of programming, data manipulation/cleaning and analysis for a broad range of projects and across a variety of disciplines
- current | 2018**
 - **PhD Dissertation Research**
Geophysics & Acoustics Lab  North Carolina State University
 - NC Space Grant/NC Sea Grant Graduate Research Fellow (2020-2021)
 - Characterize and interpret marine soundscapes using automated acoustic data processing techniques
 - Develop method to detect small boats in Planet satellite imagery

CONTACT

 swbrown@ncsu.edu
 [swricci](#)
 github.com/swricci
 [linkedin.com/in/swricci](https://www.linkedin.com/in/swricci)

LANGUAGE SKILLS



Made with the R package [pagedown](#).

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

Last updated on 2021-11-03.

- 2018
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2016

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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

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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
- 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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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



SELECTED PUBLICATIONS

- 2021
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2021

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Monitoring visitation at North Carolina artificial reef sites using high resolution satellite imagery
 Ocean and Coastal Management in prep

 - Authored with: DR Bohnenstiehl

- 2019
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2019

● **Fish community structure, habitat complexity, and soundscape characteristics of patch reefs in a tropical, back-reef system¹**
 Marine Ecology Progress Series

• Lyon RP, Eggleston DB, Bohnenstiehl DR, Layman CA, Ricci SW, Allgeier JE
- 2018
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2018

● **Investigating the utility of ecoacoustic metrics in marine soundscapes²**
 Journal of Ecoacoustics

• Bohnenstiehl DR, Caretti O, Lyon RP, Ricci SW, Eggleston DB
- 2017
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2017

● **Oyster toadfish *Opsanus tau* boatwhistle call detection and patterns within a large-scale oyster restoration site³**
 PLOS ONE

• Authored with: Bohnenstiehl DR, Eggleston DB, Kellogg ML, Lyon RP
- 2017
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2017

● **Use of underwater soundscapes to characterize nocturnal fish behavior and habitat use within a complex mosaic of estuarine habitats⁴**
 Bulletin of Marine Science

• Authored with: Eggleston DB, Bohnenstiehl DR
- 2016
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2016

● **Temporal soundscape patterns and processes in an estuarine reserve⁵**
 Marine Ecology Progress Series

• Authored with: Eggleston DB, Bohnenstiehl DR, Lillis A

LINKS

- 1: <https://doi-org.prox.lib.ncsu.edu/10.3354/meps12829>
- 2: <https://dx.doi.org/10.22261/JEA.R1156L>
- 3: <https://doi.org/10.1371/journal.pone.0182757>
- 4: <https://doi.org/10.5343/bms.2016.1037>
- 5: <https://doi-org.prox.lib.ncsu.edu/10.3354/meps11724>

SELECTED PRESENTATIONS

- 2021

● **Assessment of visitation trends at North Carolina artificial reefs using high-resolution satellite imagery**
 Coastal & Estuarine Research Federation 26th Biennial Conference
- 2021

● **Assessment of visitation trends at North Carolina artificial reefs using high-resolution satellite imagery**
 North Carolina Space Symposium

 virtual

- 2020 • Development of a call catalog to support automated acoustic data processing techniques for coral reef soundscapes
Ocean Sciences Meeting 📍 San Diego, CA
- 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



LINKS

- <https://doi-org.prox.lib.ncsu.edu/10.3354/meps12829>
- <https://dx.doi.org/10.22261/JEA.R1156L>
- <https://doi.org/10.1371/journal.pone.0182757>
- <https://doi.org/10.5343/bms.2016.1037>
- <https://doi-org.prox.lib.ncsu.edu/10.3354/meps11724>



TEACHING EXPERIENCE

- 2019 | 2019 • Fundamentals of Geospatial Information Science and Technology
North Carolina State University 📍 Raleigh, NC
 - Independent study position
 - Updated graduate-level ArcMap course material (11 assignments) to use ArcGIS Pro.
 - Tested assignments and midterms to ensure proper functionality in the new software.
- 2018 | 2014 • SciREN
Science Research and Education Network
 - Developed standards-aligned lesson plans for teachers based on research

- 2016
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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

 - Undergraduate level class
 - Designed lesson plans on Ocean Acoustics and Marine Bioacoustics
 - Revised lab lecture PowerPoints to improve student learning
- 2015
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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
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2013

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Environmental Education Intern
 Smithsonian Environmental Research 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
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2012

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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



COMMUNITY ENGAGEMENT

- 2017
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2016

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Triangle Science and Technology Expo, exhibitor
 North Carolina Museum of Natural Sciences
- 2016
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2016

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Sustainability Symposium, presenter
 North Carolina State University
- 2015
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2015

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Meet the Scientist, presenter
 North Carolina Museum of Natural Sciences
- 2014
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2014

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Sound in the Sea Day, presenter
 Duke University Marine Lab



SELECTED PRESS (ABOUT)

2021
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2021

- **What can satellite imagery tell us about how many boats visit reefs?⁶**
Hook, Line, & Science, NC Sea Grant
 - Summary of my artificial reef visitation research and UCGIS presentation

2020
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2020

- **Remote Sensing and the Science of Sound⁷**
Center for Geospatial Analytics News
 - Article about my PhD dissertation research

2015
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2015

- **Music in the Marsh: Summer Soundscapes of the Rachel Carson Reserve⁸**
Coastwatch, NC Sea Grant
 - Popular science article about my master's thesis research characterizing underwater sound in an estuarine reserve