




# 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*

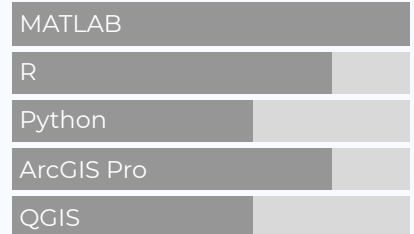
## RESEARCH EXPERIENCE

- 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](mailto:swbrown@ncsu.edu)  
 swricci  
 [github.com/swricci](https://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](https://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 system<sup>1</sup>**  
 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 soundscapes<sup>2</sup>**  
 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 site<sup>3</sup>**  
 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 habitats<sup>4</sup>**  
 Bulletin of Marine Science  
 • Authored with: Eggleston DB, Bohnenstiehl DR
  
- 2016  
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2016

**Temporal soundscape patterns and processes in an estuarine reserve<sup>5</sup>**  
 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?<sup>6</sup>**  
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 Sound<sup>7</sup>**  
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 Reserve<sup>8</sup>**  
Coastwatch, NC Sea Grant
  - Popular science article about my master's thesis research characterizing underwater sound in an estuarine reserve