SHANNON RICCI

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

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

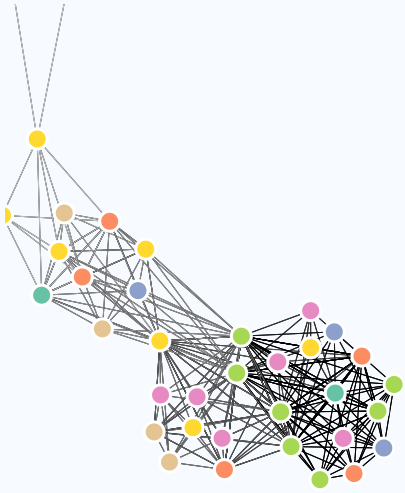
Graduate Research Assistant
Data Science Academy — North Carolina State University

- Provide data sciecne 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 interprete marine soundscapes using automated acoustic data processing techniques
- Develop method to detect small boats in Planet satellite imagery



View this CV online with links at _https://swricci.github.io/my-cv/_

CONTACT

- swbrown@ncsu.edu
- swricci
- github.com/swricci
- linkedin.com/in/swricci

LANGUAGE SKILLS

- MATLAB
- R
- Python
- ArcGIS Pro
- QGIS

*Made with the R package **pagedown**.*

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

Last updated on 2021-11-03.

2018 | 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 | 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

2015 | 2013

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 | 2009

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 | 2011

NSF Research Experience for Undergraduates

University of Delaware — Lewes, DE

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

SELECTED PUBLICATIONS

2021 | 2021

Monitoring visitation at North Carolina artificial reef sites using high resolution satellite imagery

Ocean and Coastal Management in prep

- Authored with: DR Bohnenstiehl

2019 | 2019

Fish community structure, habitat complexity, and soundscape characteristics of patch reefs in a tropical, back-reef system[1]

Marine Ecology Progress Series

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

2018 | 2018

Investigating the utility of ecoacoustic metrics in marine soundscapes[2]

Journal of Ecoacoustics

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

2017 | 2017

Oyster toadfish Opsanus tau boatwhistle call detection and patterns within a large-scale oyster restoration site[3]

PLOS ONE

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

2017 | 2017

Use of underwater soundscapes to characterize nocturnal fish behavior and habitat use within a complex mosaic of estuarine habitats[4]

Bulletin of Marine Science

• Authored with: Eggleston DB, Bohnenstiehl DR

2016 | 2016

Temporal soundscape patterns and processes in an estuarine reserve[5]

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 | 2016

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 | 2013

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 | 2014

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 | 2013

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 | 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

COMMUNITY ENGAGEMENT

2017 | 2016

Triangle Science and Technology Expo, exhibitor

North Carolina Museum of Natural Sciences

2016 | 2016

Sustainability Symposium, presenter

North Carolina State University

2015 | 2015

Meet the Scientist, presenter

North Carolina Museum of Natural Sciences

2014 | 2014

Sound in the Sea Day, presenter

Duke University Marine Lab

SELECTED PRESS (ABOUT)

2021 | 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 | 2020

Remote Sensing and the Science of Sound[7]

Center for Geospatial Analytics News

- Article about my PhD dissertation research

2015 | 2015

Music in the Marsh: Summer Soundscapes of the Rachel Carson Reserve[8]

Coastwatch, NC Sea Grant

- Popular science article about my master's thesis research characterizing underwater sound in an estuarine reserve