Dr. Marissa B. Rykowski, Ph.D.

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SUMMARY

A recent Ph.D. graduate looking for a position in data analytics, statistical programming, and/or fisheries science. Proven ability to apply advanced statistical methods to complex datasets, with a focus on the population dynamics of a federally managed endangered species in the context of climate change and bycatch. Proficient in statistical software (R) and data visualization tools. Eager to contribute to innovative projects in data analytics and ecological research, aiming to drive impactful solutions in the fisheries sector.

EDUCATION

University of Miami's Rosenstiel School of Marine, Atmospheric, and Earth Science · Miami, FL
Doctor of Philosophy in Marine Biology and Ecology · December 2024 · GPA: 3.866
Babcock Lab · Advisor: Elizabeth A. Babcock, Ph.D.
Dissertation: *Assessing Threats from Global Warming and Bycatch to Northwest Atlantic Loggerhead Sea Turtles*

University of Miami, Coral Gables, FL
Bachelor of Science in Marine and Atmospheric Science · May 2016
Majors in Marine Science and Biology · Minor in Mathematics · GPA: 3.224
Senior Thesis: *Forecasting inshore red tide blooms using offshore satellite data on the West Florida Shelf*

EXPERIENCE

University of Miami's Rosenstiel School of Marine, Atmospheric, and Earth Science · Miami, FL
Ph.D. Candidate · August 2018 – December 2024 · 40+ hours/week

- Designed and implemented mathematical and statistical simulation models to assess the effects of climate change and bycatch on loggerhead sea turtle population dynamics
- Analyzed and managed large fisheries and demographic datasets using R by applying advanced statistical methods
- Worked independently and managed both short- and long-term research goals, while balancing responsibilities for coursework and extracurricular activities
- Communicated complex ecological findings via visual and oral presentations to diverse audiences

University of Miami's Rosenstiel School of Marine, Atmospheric, and Earth Science · Miami, FL
Teaching Assistant · 20 hours/week

- Introduction to Marine Biology Laboratory (August – December 2020)
  - Assisted the instructor in the setup, execution, and cleanup of weekly lab experiments
  - Used Microsoft Excel for data manipulation and statistical calculations
  - Held office hours, graded lab reports, and provided feedback to enhance students' scientific writing and data analysis skills
- Statistics for Marine Scientists (August – December 2019)
  - Used R statistical software to demonstrate statistical methods, such as hypothesis testing, regression analysis, and data visualization
  - Held regular office hours, provided one-on-one assistance when needed to help reinforce statistical concepts covered in class, and graded problem sets
  - Gave 2 lectures explaining complex statistical concepts and coding techniques

University of Miami's Rosenstiel School of Marine, Atmospheric, and Earth Science · Miami, FL
Research Assistant · January 2015 – April 2016 · 20 hours/week

- Analyzed time series data to determine impact of environmental factors on red tide blooms
- Applied statistical forecasting techniques such as empirical dynamic modeling (EDM) and state space reconstruction
- Manipulated large datasets and created graphics using R statistical software

TECHNICAL SKILLS

- R
  - Tidyverse
  - RMarkdown
  - RShiny
- Microsoft Office
- Adobe Acrobat
- JavaScript
- GitHub
- MATLAB

RELEVANT COURSEWORK

- Advanced Biometrics
- Agent Based Modeling
- Bayesian Statistics for Marine Scientists
- Marine Population Biology Processes & Modeling
- Marine Population Dynamics
- Population & Community Ecology

- Statistics for Environmental Management

PUBLICATIONS

Rykowski, MB. (2024). *Assessing Threats from Global Warming and Bycatch to Northwest Atlantic Loggerhead Sea Turtles.* [Doctoral dissertation, University of Miami] https://scholarship.miami.edu/esploro/outputs/991032489071302976.

Harford, B, **Rykowski, MB,** Babcock, EA, Karnauskas, M, Sagarese, SR, Walter, JF. (2017). *Forecasting inshore red tide blooms using recent past offshore conditions on the West Florida Shelf.* Unpublished manuscript.

Rykowski, MB. (2016). *Forecasting inshore red tide blooms using offshore satellite data on the West Florida Shelf.* [Undergraduate Senior Thesis, University of Miami]

PRESENTATIONS

Rykowski, MB. (2024, October 25). *Assessing Threats from Global Warming and Bycatch to Northwest Atlantic Loggerhead Sea Turtles*. Ph.D. Defense, Miami, FL.

Rykowski, MB. (2023, October 27). *A population model for the NW Atlantic loggerhead sea turtle in the face of climate change*. UM MBE Departmental Seminar, Miami, FL.

Rykowski, MB. (2023, February 7 – 10). *Changing sex ratios due to global warming for the Northwest Atlantic loggerhead sea turtle population*. The Western Section of the Wildlife Society Annual Conference, Riverside, CA.
Award: 2nd place for best student presentation

Rykowski, MB. (2022, October 28). *Estimating bycatch in the Gulf of Mexico Bottom Longline Reef Fish Fishery.* UM MBE Departmental Seminar, Miami, FL.

Rykowski, MB. (2022, August 21 – 25). *Comparing Bycatch Estimation Methods in the Gulf of Mexico Reef Fish Fishery.* American Fisheries Society Annual Conference, Spokane, WA.

Rykowski, MB. (2021, October 22). *Analyzing bycatch estimation methods in the Gulf of Mexico Bottom Longline Reef Fish Fishery.* UM MBE Departmental Seminar, Miami, FL.

Rykowski, MB. (2020, October 9). *Changing sex ratios due to global warming: extinction risk for the Northwest Atlantic loggerhead sea turtle population?* UM MBE Departmental Seminar, Miami, FL.

Rykowski, MB. (2019, October 18). *Assessing Loggerhead Sea Turtle Bycatch in the Gulf of Mexico Bottom Longline Reef Fish Fishery.* UM MBE Departmental Seminar, Miami, FL.

Rykowski, MB. (2016, April 7). *Forecasting inshore red tide blooms using offshore satellite data on the West Florida Shelf*. Undergraduate Senior Thesis Defense, Miami, FL.

CERTIFICATIONS

Communicating about Culturally Sensitive Issues · LinkedIn Learning · August 2020
Unconscious Bias · LinkedIn Learning · July 2020
edX · Sharks! Global Biodiversity, Biology, and Conservation · August 2016
SCUBA Schools International · Open Water Diving · December 2012

PROFESSIONAL SOCIETIES

The Wildlife Society · 2021 – Present
American Fisheries Society · 2021 – Present
Society for Women in Marine Science · 2024 – Present

OUTREACH & COMMITTEES

Faculty Search Committee · University of Miami
MBE Department · Fall 2023 – Summer 2024

Graduate Undergraduate Mentoring Program (GUM) · University of Miami
Mentor · Spring 2021 – Fall 2023

American Fisheries Society Annual Conference · American Fisheries Society
Student Planning Committee · Spring – Summer 2022

Graduate Student Association · University of Miami
MBE Department Senator · Fall 2020 – Spring 2022

Coding Club · University of Miami
Member · Fall 2019 – Spring 2021

REFERENCES

Elizabeth (Beth) Babcock, Ph.D.
Ph.D. Advisor

Rosenstiel School of Marine, Atmospheric, and Earth Science
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Miami, FL 33149
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William (Bill) Harford, Ph.D.
Ph.D. Committee Member & Undergraduate Thesis Advisor
Rosenstiel School of Marine, Atmospheric, and Earth Science
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Alexandra (Alex) Norelli, Ph.D.
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