

Ashley Carreiro

E-Mail: Carreiro.ashleym@gmail.com

ACADEMIC QUALIFICATIONS

Jan 2021 – Dec 2022 MS, Master of Marine Science and Oceanography, Florida Atlantic University

- Thesis: “Assessment of nutrient enrichment effects on stony coral tissue loss disease in *Montastraea cavernosa* corals”
- Received the PADI association and AAUS scholarship to fund thesis project

2009-2013: BSc, Biology, Florida State University

- Research Project: “Do marine protected areas (MPAs) have a higher fish density, higher species diversity of fish, larger fish, and greater coral cover than unprotected reefs?”
- Completion in the Marine Certificate Program
- Received the Matt Beard Memorial Undergraduate Marine Research Scholarship as a member of the academic diving program community

WORK EXPERIENCE (in order of relevance)

January 2023 - Present : Coral Reef Health and Molecular Ecology Lab Manager for Dr. Joshua Voss, at Florida Atlantic University-Harbor Branch Oceanographic Institute.

- Mentor new lab members including students, interns, and technicians.
- Plan and execute local field work operations to meet grant deliverables.
- Collect data and assist in writing reports for the Florida Department of Environmental Protection grant deliverables.
- Active participant on the trimix CCR mesophotic team.
- Manage both lab and field inventory and complete purchases to ensure necessary project supplies are available.
- Was part of the coral fragment sampling team on the mesophotic reefs on the NOAA Flower Garden Banks National Marine Sanctuary using CCR trimix diving.

January 2021 – Dec 2022: Coral Reef Health and Molecular Ecology Lab Graduate Research assistant with Dr. Joshua Voss, at Florida Atlantic University-Harbor Branch Oceanographic Institute.

- Assessed the effects of nutrient enrichment on stony coral tissue loss disease through nutrient manipulations in the field and tracking disease progression rate through linear measurements and surface area using 3D photogrammetry.

- Was part of the coral restoration team both setting up individual coral pucks and assisting in monitoring part of FDEP.
- Was part of the intervention team on the two SCHMIR DRT0 research cruises led by Dr. Karen Neely on the MV Makai, where amoxicillin and base 2B treatments were applied to stony coral tissue loss diseased lesions on coral colonies within in the Dry Tortuga's.
- Was part of the coral and sponge fragment sampling team on both shallow and mesophotic reefs on the NOAA Flower Garden Banks National Marine Sanctuary using technical diving.

January 2020 - 2021: Coral Reef Health and Molecular Ecology Lab Intern with Dr. Joshua Voss

- Use of molecular techniques to assist in the research in improving the understanding of the genetic connectivity of the coral species, *Montastraea cavernosa*, throughout the Florida Reef Tract, Cuba, Belize, and the Northwest Gulf of Mexico.
- Assisted in the research of investigating disease intervention strategies and disease progression on corals in the Southeast Florida Reef Tract by generating and tracing 3D models of *Montastraea cavernosa* colonies in order to collect area data of healthy tissue and diseased tissue.
- Analyzed roving diver survey data of stony coral tissue loss disease, using R, to supplement the Voss lab quarterly report to the Florida Department of Environmental Protection.
- Assisted in the setup photographing and videoing diseased and intervened colonies to later generate 3D models from using SCUBA.

May 2019 - November 2019: Coral Reef Ecology Volunteer with Dr. Maggie Johnson, at the Smithsonian Marine Station.

- Assisted in setting up experimental aquaria to look at the effects of hypoxia on *Siderastrea radians* and *Acropora corporas* colonies.
- Assisted in coral husbandry - maintenance, YSI measurements, cleaning, feeding and mounting for experiments.
- Processed Calcification Accretion Units (CAUs), decalcified tiles, and filtered biotic material.
- Analyzing permanent benthic photoquadrats, using CoralNet, to determine temporal differences over a three-year time span from Bocas del Toro, Panama.

May 2016 – November 2018: Scientific Coordinator at Marine Conservation Philippines (MCP)

- Developed methodology for a volunteer based continuous monitoring program in substrate, fish, and invertebrates to assess MPA effectiveness, coral reef health, (shallow and mesophotic) seagrass cover and biodiversity.
- Supervised and managed interns (consisting of international undergraduate and masters students) on the completion of their conservation science projects.
- Prepared and implemented workshops to train Philippine government stakeholders out of water and using SCUBA on monitoring methods in substrate, fish, and invertebrates to enable them to complete their coastal assessments for the year.
- Assisted in a carrying capacity workshop for the Philippine Department of Environment and Natural Resources.

- Assisted in creating memorandum of agreements between local government units and MCP to provide technical assistance and guidance on MPA management.
- Interpreted data to communicate it to local communities and governments to assist in necessary management actions for MPAs.
- Presented to local community members about the status of their reefs.
- Assisted in marine biology and plastic awareness education programs at local elementary and high schools.
- Assisted in launching the Wild Postcard Project for the first time in the Philippines.
- Planned and managed the daily schedule of 30 staff and volunteers.
- Member of the War on Waste (WOW) organization in Dumaguete, Philippines and organizer of city-wide clean up events.

November 2015 - February 2016: Scuba Instructor at Oceans Unlimited in Costa Rica

- Created and trained divers in the PADI specialty course: "Conservation Research Diver".

October 2016 – April 2017, August 2018: Assisted University of British Columbia research team (led by Dr. Angela Stevenson) studying ecological interactions of crinoids, their infesters and predators from shallow to mesophotic depths

- Assisted in mark and recapture of individuals in situ (via SCUBA), laying out transects, and collecting data using technical diving in the Philippines.

May – August 2012: Assisted Florida State University PhD candidate Dr. Robert Ellis studying the effects of habitat manipulation by red grouper, *Epinephelus morio*, on faunal communities associated with excavations in Florida Bay.

- Conducted fish surveys to study which fish species also inhabit grouper holes and measured the length of spiny lobsters inside grouper holes.
- Analyzed videos of grouper habitats based on grouper behavior and species interactions.

January 2013: Assisted Florida State University PhD candidate Dr. William Wells studying degradation of hydrocarbons and organic matter in deep-sea sediments.

- Assisted in the collection of sediment cores using SCUBA.
- Assisted in locating and repairing wave detection devices using SCUBA in limited visibility.

January - April 2013: Volunteered at the Gulf Specimen Marine Lab

- Collected specimens using trawl nets from the Florida Bay, packaged and shipped specimens for research around the US and Canada.
- Cleaned specimen tanks and ensured the tanks were habitual.

PUBLICATIONS

Sturm AB, Eckert RJ, **Carreiro AM**, Klein AM, Studivan MS, Dodge Farelli D, Simões N, González-Díaz P, González Méndez J, Voss JD. Does depth divide? Variable genetic connectivity patterns among shallow and mesophotic *Montastraea cavernosa* coral populations across the Gulf of Mexico and western Caribbean. *Ecology and Evolution*, In review.

Eckert RJ, **Sturm AB**, Carreiro AM, Klein AM, Voss JD. *Stephanocoenia intersepta* coral populations across Florida Keys National Marine Sanctuary exhibit depth-dependent genetic structure with greater diversity in mesophotic populations. *Molecular Ecology*, In review

Sturm AB, Eckert RJ, **Carreiro AM**, Simões N, and Voss JD. (2022) Depth-Dependent Genetic Structuring of a Depth-Generalist Coral and Its Symbiodiniaceae Algal Communities at Campeche Bank, Mexico. *Frontiers in Marine Science*, doi:10.3389/fmars.2022.835789

Sturm AB, Eckert RJ, **Carreiro AM**, and Voss JD. 2021. Population genetic structure of the broadcast spawning coral, *Montastraea cavernosa*, demonstrates refugia potential of upper mesophotic population in the Florida Keys. *Coral Reefs*. doi:10.1007/s00338-021-02112-y

Voss JD, Shilling E, Combs I, **Carreiro A**, Studivan M, and Beal J. 2020. Intervention and fate tracking for corals affected by stony coral tissue loss disease in the northern section of Florida's Coral Reef. Florida DEP. Miami, FL. Pp. 1-33.

CONFERENCE CONTRIBUTIONS

Ashley Carreiro, Ryan Eckert, Alexis Sturm, Allison Klein, Gabrielle Pantoni, Erin Shilling, Thomas Ingalls, Ian Combs, Brian Walker, and Joshua Voss (2023); Assessment of nutrient amendment effects on stony coral tissue loss disease. Benthic Ecology Meeting. Miami, Florida. (Oral Presentation)

Ashley Carreiro and Isabella Morganite (2023); Expanding long-term monitoring of shallow coral reefs in Negros Oriental, Philippines to upper mesophotic coral ecosystems using technical divers. Mesophotic Coral Reef Ecosystems Gordon Research Conference. Ventura, California. (Poster Presentation)

Ashley Carreiro and Isabella Morganite (2023); Expanding long-term monitoring of shallow coral reefs in Negros Oriental, Philippines to upper mesophotic coral ecosystems using technical divers. Mesophotic Coral Reef Ecosystems Gordon Research Seminar. Ventura, California. (Oral Presentation)

Ashley Carreiro, Ryan Eckert, Erin Shilling, Allison M. Klein, Ian R. Combs, and Joshua D. Voss (2022): Assessment of nutrient enrichment effects on stony coral tissue loss disease progression and microbial communities in *Montastraea cavernosa* corals. International Coral Reef Symposium. Bremen, Germany. (Oral Presentation)

Ashley Carreiro, Ryan Eckert, Alexis Sturm, Allison Klein, Erin Shilling, Gabrielle Pantoni, and Joshua Voss (2022): Nutrient enrichment effects on stony coral tissue loss disease severity and prevalence in Southeast Florida. Benthic Ecology meeting. Portsmouth, New Hampshire. (Poster Presentation)

Ashley Carreiro and Isabella Morgante (2018): Developing technical diver-based monitoring protocols of mesophotic coral ecosystems. 4th Asia Pacific Coral Reef Symposium. Cebu, Philippines. (Oral Presentation)

CERTIFICATES AND ADDITIONAL SKILLS

Field: SCUBA diving (AAUS certified, Trimix Rebreather (200'), PADI Master SCUBA Diver Trainer, PADI Tec 40 Instructor, PADI Tec 65 Trimix diver, certified PADI Gas Blender, PADI Conservation Research Diver specialty instructor), First Responder CPR, First Aid Certified, and Department of Interior Motorboat Operator Certification Course

Computer: R database management, data analysis using R, Advanced computer skills in Microsoft Office, Excel database management, 3D model generation using Metashape, and 3D model analysis using Rhinoceros.

Molecular Laboratory skills: DNA extraction and purification, Qubit DNA quality testing, PCR, gel electrophoresis

Wet Laboratory skills: Proper coral handling, maintaining proper aquaria conditions for corals, YSI and PAM measurement and reading knowledge

Services

Mentored undergraduates at Florida Atlantic University as part of FAU's Mentor Collective program

Served as sustainability chair on Harbor Branch's Student Association

Served as treasurer, vice president, and a team member on Florida State Gymnastics Club Team