TEXAS TECH UNIVERSITY
Davis College
Natural Resources Management™

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Student Name: Madelyn Knauss

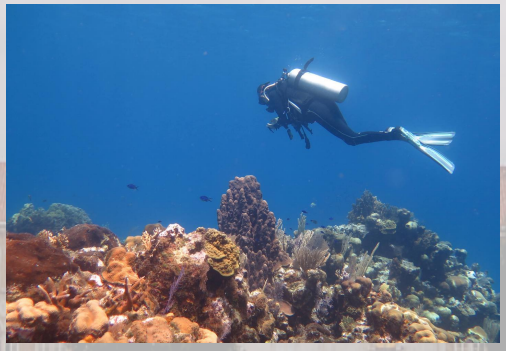
Degree Sought: Doctor of Philosophy in Wildlife, Aquatic, and Wildlands Science and Ma

Specialty: Marine Environmental DNA Metabarcoding, Biodiversity Assessments

Hometown, State/Country: Austin, Texas

Research Interests or Projects:

I started my education at Texas Tech University in 2016, gaining my BS in Natural Resources Management: Wildlife Biology in 2020. During my time as an undergraduate, I worked each summer as an undergraduate researcher or intern in the Natural Resources Management Department as well as the Environmental Toxicology Department. I earned a co-author position on a publication discussing the effects of oil spill dispersal chemicals on marine mammal hormones, and contributed to projects regarding marine reptile cell culture. After completing my BS, I began working towards my MS in Biology at Texas Tech in 2020. I studied the use of environmental DNA (eDNA) metabarcoding as a minimally invasive tool for conducting biodiversity assessments of anthropogenically impacted Texas bays and coastal waters. I found that eDNA metabarcoding was sucessful in identifying more than 30 common native Texas fishes, and my data aligned with historical data collected using traditional techniques (trawling, line fishing, etc). During my time as a MS student, I was also accepted to participate in a one month long internship in Roatan, Honduras at the Roatan Institute for Marine Science (RIMS). There, I conducted a research project examining the differences in the richness levels of key marine fishes, such as the Parrotfish, at different dive sites on the Mesoamerican Barrier Reef. These sites either resided within the protection of the Roatan Marine Park (RMP) or outside of the RMP. At the end of my time at RIMS, I decided to focus my future research projects on tropical marine ecology and continue to work with RIMS and the RMP. I completed my MS in 2022 and began my PhD with Texas Tech the same year, where I am now in the process of designing several projects using eDNA metabarcoding to study the ecology of the Mesoamerican Barrier Reef in Roatan, Honduras. My interests primarily include coral diseases, sponge ecology, marine fish diversity, and the conservation and legal protection of marine life.



DEPARTMENT OF NATURAL RESOURCES MANAGEMENT
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