



GUANA NUTRIENTS BUDGETS & BIVALVES

Biannual Newsletter of the NERRS Science Collaborative Project
"Assessing the Current and Potential Role of Shellfish for Improving Water Quality"

From the Field

Water quality sampling on Guana River

Written by Jenna Reimer, University of Florida

On January 13, 2022, Olivia Roorbach, Justina Dacey, and I embarked at 6:30 a.m. to conduct the first monthly water quality sampling of 2022. We collected water quality samples from Guana River and Guana Lake and took field measurements including water depth, temperature, specific conductance, pH, dissolved oxygen, and salinity. These measurements help us understand conditions at different sites along the gradient from the lake to the river.

The first leg of the sampling consisted of taking a jon boat onto the river to collect from four sites. On the second leg of sampling, the boat was relaunched in the Guana Lake and collected from four of our lake sites. Unfortunately, the boat was unable to reach the ultimate site since the water level was too low for the jon boat to safely navigate. In addition to the water quality data, I also collected sediment and water samples from each site to conduct falcon tube incubations to measure denitrification, a natural process that removes nitrogen from the system.



Falcon tube: These are tubes with screw caps and measurements on the side that help keep samples protected.



Top: Sunrise over the Guana River Estuary.
Bottom: Sediment collection for laboratory analysis.
(Photo credit: Jenna Reimer)

From the Field

Oyster Monitoring

Written by Hallie Fischman, University of Florida

On January 20, 2022 graduate student Kristie Perez and I surveyed oyster reefs with GTM biologist, Pam Marcum. We surveyed oyster reefs to measure oyster density and percent cover. These on-the-ground surveys will occur at 4 reefs and the data will be paired with the drone images to calculate oyster metrics across the entire Guana River. Kristie also brought some oysters back to the lab to assess their condition and see if oyster condition varies throughout the Guana River.



Top: Pam Marcum and Hallie Fischman on reef. Bottom: Oysters in lab. (Photo credit: Kristie Perez)

Notes from the Team

Next Meeting Details

Please save-the-date for our in-person stakeholder meeting. Details will be sent through email shortly.

DATE: May 4, 2022

TIME: Tentatively 9:00 a.m.- 12:15 p.m.

LOCATION: GTM Research Reserve Visitor Center, 505 Guana River Road, Ponte Vedra Beach, FL 32082

Light refreshments will be provided. For more information, contact Kaitlyn.Dietz@FloridaDEP.gov.

Stay Engaged!

See below for a schedule of when and how the project team will share updates through 2024:

- February: Newsletter
- May: In-person meeting
- August: Newsletter
- November: Virtual meeting

Meet the Collaborative Team



Alexander J. ("AJ") Reisinger, Ph.D.

AJ is an assistant professor and state extension specialist focused on urban water quality in the Soil and Water Sciences Department at the University of Florida, based out of Gainesville. His research focuses on nutrient and energy dynamics of freshwater ecosystems, and how these ecosystem processes respond to changes in water quality. Simply put, he's interested in how the things we do on the landscape affect what flows downstream. AJ has a masters and Ph.D. in Biology from Kansas State University and the University of Notre Dame, respectively. He was a postdoc at the Cary Institute of Ecosystem Studies before joining the UF faculty in 2017. Since moving to Gainesville, AJ has fallen in love with the freshwater springs common throughout the region. AJ is a co-PI on the Guana Nutrients: Budgets and Bivalves project and will focus on quantifying temporal and spatial dynamics of nitrogen concentrations and identifying the sources of N to the Guana ecosystem.



Nikki Dix, Ph.D.

Nikki has been the research director at the GTM Research Reserve since 2013. Her research interests involve understanding how estuaries respond to natural and anthropogenic change with the intent of informing natural resource management. Her graduate and postdoctoral research focused on plankton ecology and drivers of primary production such as tropical storms, eutrophication, and grazing by zooplankton and bivalves. As research director, Nikki establishes research priorities and oversees long-term monitoring of weather, water quality, coastal wetlands, plankton, and oysters to provide foundational information about how the ecosystem changes over space and time. The Guana Nutrients project is a great example of how Nikki also facilitates activities of visiting researchers, advises graduate students, and works to develop collaborations between scientists, managers, educators, and the public.

About the Project: <http://www.nerrssciencecollaborative.org/project/Smyth20>