

Rivers to Reef blog by  
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When I received an invitation to join a teacher expedition on the R/V Savannah, I could not resist! Teaching my students about coastal ecology has been a passion of mine for many years. As a high school science teacher, I emphasize the importance of learning about Georgia's coastline, our own natural resources, and how we can protect them. This past year I was given an opportunity to work with a group of students who were very passionate about starting a robotics team at our school. I learned very quickly about the amazing opportunities that robotics could provide for my students, and it also helped me to learn more about Gray's Reef and expand on my own understanding of coastal ecology and how to share this with my students.

Scheduled in our itinerary was a 20 mile voyage to Gray's Reef where we would spend time exploring the underwater sanctuary using a state-of-the-art ROV. What a great opportunity! This would allow me to see firsthand the research skills that inspire the mission challenges for robotics ROV competition. Unfortunately, it was not meant to be. With a nor'easter came turbulent seas and, to my dismay, a severe case of motion sickness. However, [Gray's Reef National Marine Sanctuary](#) has a wealth of photos and videos that I can use to share these experiences with my students.

We were able to explore the sound and perform a few activities that will expand upon lessons that I use with my students. First of all, we collected water samples using the CTD (Conductivity, Temperature, and Depth) Profiler. As the CTD moves through the water column, it collects samples and predetermined depths, allowing scientists to collect and digitally analyze the health at specific depths up to 600 meters. In my own classroom, we use water quality test kits to perform similar analysis on our local streams. These tests include temperature, turbidity, salinity, dissolved oxygen, nitrogen, etc. Using the data collected from our voyage on the R/V Savannah, I can demonstrate how the measurements vary with depth and location. Students can use this data to look for correlations between depth and temperature, salinity, and dissolved oxygen.

While on the R/V Savannah, we conducted trawls at several different locations of the sound. This provided us with a direct view of the biological diversity in the estuary, including mollusks, crustaceans, and a vast array of aquatic vertebrates. Each species was identified and, if it survived the trawl, expeditiously tossed back into the water. Taking my students on a trawling boat has become a future goal. While we are able to use a variety of nets to catch and identify macroinvertebrates for our local stream testing, it is quite a different experience to see these organisms brought up from the ocean depths.

Although we were unable to achieve everything on our itinerary, it was an amazing experience that I will share with my students for years to come. In past years, I have taken my students via land to see the Georgia barrier islands and explore the coastal ecology and learn about how Georgia's history has shaped the development of the islands. After this experience, I plan to expand my knowledge of the Georgia coast and extend my lessons to incorporate more about the reef. Thank you for the adventure of a lifetime.