

ECU Grad Students Contribute to Natural History Records at Reserve

When East Carolina University (ECU) graduate student Cecilia Krahforst inspects her oyster toadfish “dens” in the Middle Marsh area of the Rachel Carson Reserve, the tiny fish, crabs, and shrimp she records not only add to her Ph.D. research project, but also to a growing wealth of data about the natural history of the Reserve. Krahforst and fellow ECU graduate student Chuck Bangley are representative of a cohort of scientists that use the Reserve’s pristine habitats to conduct research and share their findings with Reserve managers to improve natural history data collection for these unique sites.

Both Krahforst and Bangley utilize the Middle Marsh area of the Rachel Carson Reserve and compare their findings there to other sites around eastern North Carolina. Krahforst works with oyster toadfish, studying the effects of underwater noise on fish communication, reproduction, and larval development. In the process of collecting toadfish, Krahforst’s team will also record data on other species found in seagrass and hard substrate habitats, such as brittle stars, stone crabs, and even an octopus! Bangley’s study subjects are a bit larger than the tiny invertebrates often found in Cecilia’s den-



Cecilia Krahforst

he investigates the habitat preferences of migratory sharks along the North Carolina coast. Using fishing gear such as gill nets and long lines, Bangley is able to survey the various types of sharks and rays at Middle Marsh, including bonnethead, sharpnose, and blacknose sharks. Once Bangley and Krahforst complete their busy summer field season, their species-level data will be sent to Central Sites Manager Paula Gillikin, who will add it to a comprehensive natural history database for the Rachel Carson Reserve. “An important part of protecting a reserve



Chuck Banalev

centers around understanding what plants and animals live there. Species data contributed by researchers such as Cecilia Krahforst and Chuck Bangley will help to enhance Reserve natural history records; provide a better understanding of the importance of Reserve habitats to various plants and animals; and provide information on new invasive species that inhabit the area,” explains Gillikin.

In addition to sharing their research findings with Reserve managers, Krahforst and Bangley are involved in a number of educational and outreach efforts designed to bring their research, and coastal science, to a wider audience. Bangley blogs for Southern Fried Science and has developed curriculum for the Scientific Research and Education Network. Krahforst recently debuted an educational presentation that models underwater fish and anthropogenic noise so users can consider how things like boats and scuba divers impact underwater habitats. The two students also operate an informative “[Toadfish and Sharks](#)” Facebook group, open to the public, that recounts stories from the field and often features photos of interesting species found in Krahforst’s dens or on Bangley’s lines. Whether they are collaborating with Reserve site managers or sharing their research on their Facebook page, Krahforst and Bangley are busy furthering our understanding of what lives beneath the surface and why.