

# Teachers Investigate Human Impacts by Land and Sea

“Every time I do a workshop with Pickering Creek it’s always diverse, interesting, and hands-on,” Cathy Bornhoeft, Environmental Science teacher at North Caroline High School, said after participating in the two-day Audubon Watershed Experience teacher professional development workshop in July 2017. Now in its fifteenth year and funded in 2017 by Chesapeake Bay Trust, the Audubon Watershed Experience (AWE) program, has connected thousands of high school biology and environmental science students to local conservation efforts on the Eastern Shore through hands-on and investigative in-class lessons and field experiences at Pickering Creek. Although the students are the focus of this successful program, another equally important and engaged group at the center of the program are the teachers – partaking in their own exciting and experiential AWE program this summer.

Each year, high school science teachers from surrounding counties participate in a multi-day teacher professional development workshop organized and facilitated by Pickering Creek staff. The theme of 2017’s summer workshop? “Investigating Human Impacts by Land and Sea.”

Day One took place at Blackwater National Wildlife Refuge and focused on the impacts of rising seas on critical habitat for bird populations that rely on local salt marshes. Throughout the day, teachers from Talbot, Wicomico, and Caroline Counties played interactive games, practiced using data and scientific evidence to support arguments, and took home hands-on activities and resources to use in their classrooms. Dr. Ariana Sutton-Grier, Director of Science for the Maryland/DC chapter of the Nature Conservancy and an Associate Research Professor at the University of Maryland, presented her research on “blue carbon” and salt marshes. In the afternoon, Dr. Dave Curson, Director of Bird Conservation for Audubon Maryland-DC, toured with teachers to several Refuge areas where Audubon is working closely with Refuge



staff on projects to help local salt marshes adapt to a changing climate.

With strong coffee in hand, the teachers started Day Two at 6:00 AM for a trip to the Chester River Field Research Station in Chestertown to experience bird banding up close. Maren Gimpel, Field Ecologist for Washington College’s Center for Environment and Society, led the group around the 228-acre Chino Farms migration banding station; demonstrated how birds are caught, banded, and released; and shared research findings from the banding station’s records. Similar to Pickering Creek Audubon Center, Chino Farms has a long history of agriculture and a recent history of conservation and restoration efforts to improve and protect bird habitats. Using data collected from the banding station, teachers practiced a lesson investigating the impacts of weather, land management, and local habitat changes on Northern Bobwhite Quail and Grasshopper Sparrow populations.

Following their morning at the banding station, the teachers boarded Washington College’s research vessel *Callinectes* for an afternoon on the Chester River. Emily Harris, Watershed Coordinator for the Chester River Association (CRA), demonstrated water sampling techniques for fresh and brack-



ish water; discussed restoration, behavior change, and policy initiatives to reduce pollution; and introduced projects CRA works on with landowners, homeowners, and legislators to improve local water quality.

Teacher professional development workshops with Pickering Creek not only introduce teachers to new activities, resources, and lessons for the classroom, and connect them directly with scientists working in the field—most importantly they remind teachers of the rich learning experiences the outdoors can provide. When asked what they found most valuable about the two-day workshop, one teacher commented, “Interacting with the scientists and hearing first-hand the importance of the experiments they were conducting. This allows me to better explain these things to my students and show actual work.”