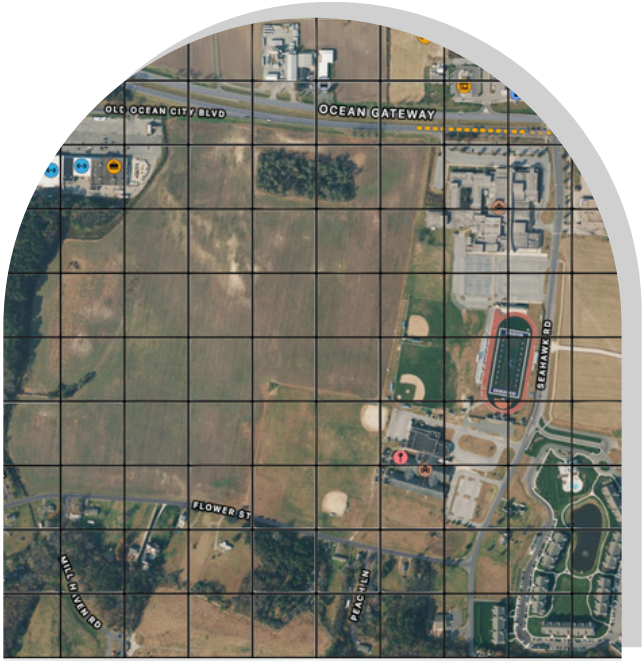
STEPHEN DECATUR MIDDLE SCHOOL

MWEE CASE STUDY

Worcester County students study how local land use affects water quality in Maryland's coastal bays watersheds.

HIGHLIGHTS

- Stephen Decatur Middle School conducted a Meaningful Watershed Educational Experience to determine how the land uses around their Maryland Coastal Bays impacted water quality and ecosystem health.
- In their first implantation of the MWEE, students created and graphed land use maps that determined the total amount of land used for various operations.
- Students conducted experiments to determine how each land use contributed to runoff and infiltration.
- Students created an experiment to test the effect of various phosphate and nitrate concentrations on phytoplankton growth related to algal blooms.
- Students were able to apply their science skills and thought processes to explore, experiment, and create solutions for environmental issues in their own communities.



BACKGROUND

Stephen Decatur Middle School (SDMS) consists of approximately 650 students in 7th and 8th grade in Worcester County, Maryland, in the small town of Berlin. Worcester County Public Schools considers partners within the community to be an integral part of their strategic plan to prepare students to be informed and active members of society. WCPS has committed to providing their students with Meaningful Watershed Educational Experiences throughout their K-12 educational journey in order to promote engagement and stewardship of their local watersheds.

SDMS students come from a diverse area of coastal watersheds that makeup Maryland's Coastal Bays. Many students have access to local bays such as Newport Bay, Assawoman Bay, Isle of Wight Bay, Chincoteague Bay, and Sinepuxant Bay. Each of the challenges that these bays face are unique as a result of the wide-ranging land uses around each bay. Agriculture, tourism, residential, and commercial land uses have created stresses on many of the delicate bay ecosystems thus allowing our students to become educated on the impacts of their day-to-day decisions.

PROJECT SCOPE

A cohort of 160 eighth grade students at Stephen Decatur Middle School focused their attention on the impacts of agriculture on the health of Maryland's Coastal Bays across our county. In partnership with the Maryland Coastal Bays Program, SDMS students had the opportunity to develop their environmental knowledge by applying Science and Engineering Practices (SEPs) and Crosscutting Concepts (CCCs) to a real-life phenomenon of a fish kill caused by an algal bloom in local waterbodies around the school.

LESSONS LEARNED

- There is no substitute for on-site, hands-on experiences. Since we were only able to do a partial implementation, our students were not able to visit any of our local bays directly which limited student buy in.
- Tapping into Maryland Coastal Bays Program, Chesapeake Bay Foundation, and other local agencies is invaluable for student success.
- Focusing on real-world and local issues allowed students to have an impact on the communities that they live in and showed they can play a role in their health.