CHESAPEAKE MONITORING COOPERATIVE

CMC Chesapeake Monitoring Cooperative

2022

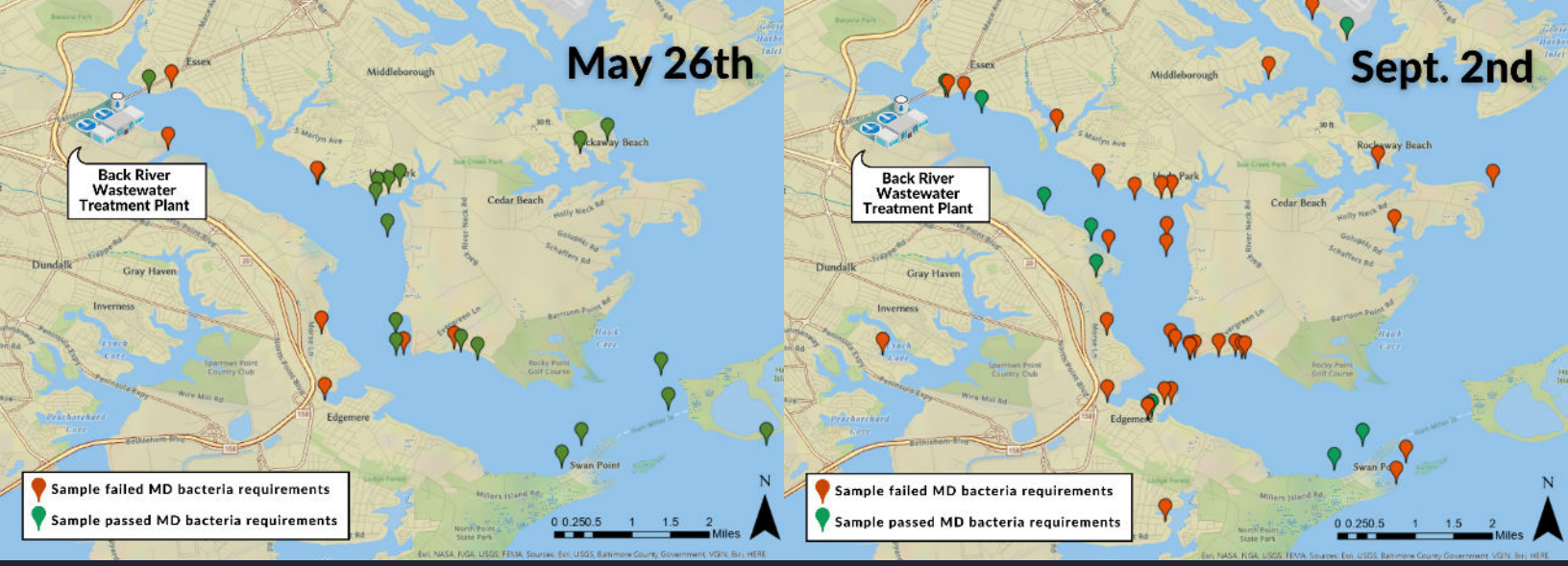
CASE STUDY: BLUE WATER BALTIMORE

MONITORING DISCOVERY LEADS TO IMPROVED WASTEWATER MANAGEMENT

Blue Water Baltimore (BWB) is a non-profit organization established in 2010 from five watershed associations which joined together. BWB is dedicated to ensuring that Baltimore's waterways are healthy, safe, and clean. They accomplish this through monitoring water quality, planting trees, education, and advocacy. They began monitoring water quality in 2010, which occurs at 49 stations for streams and rivers flowing into the Patapsco River. At these sites, BWB monitors the following indicators: bacteria, chlorophyll, specific conductance, turbidity, pH, Secchi depth (indicating water clarity), Total Phosphate, Total Nitrogen, phycoerythrin, salinity, Dissolved Oxygen, and temperature. Once this in-depth information is recorded and analyzed in an in-house lab, it is available for the general public to view here on their interactive map. Many of the indicators BWB monitors are Tier 3 level data in the CMC which contribute to the Chesapeake Bay Program datasets.

Blue Water Baltimore conducts routine sampling for *Enterococcus* bacteria (fecal indicator bacteria), and they have occasionally found spikes in bacteria counts related to runoff from heavy rainfall. During a routine 2021 sampling, however, consistently high readings were found at an effluent pipe of the Patapsco River Wastewater Treatment Plant, upriver of the Key Bridge. The high counts exceeded treatment plant permit levels for effluent discharge, and could not be attributed to runoff from heavy rainfall. This discovery was passed on to the Maryland Department of the Environment (MDE), which led to an in-depth investigation for the Patapsco Wastewater Treatment Plant. The inspector found violations with both operation and maintenance deficiencies, including equipment malfunction, out-of-order equipment, shortages in staffing, and mishandled sampling of toxic wastewater contaminants. In December 2021, Blue Water Baltimore filed a federal Clean Water Act lawsuit against Baltimore City.

Above: Patapsco Wastewater Treatment Plant.
Left: Back River Wastewater Treatment Plant.



Sample sites for Enterococcus bacteria on May 26 (left) and September 2 (right). Sample locations with with Enterococcus bacteria levels above 130 MPN/100 mL are shown in red, and below 130 MPN/100 mL are shown in green.

Discharge Monitoring Reports (DMRs) were used from January 2017 through September 2021 to demonstrate that permit limits were violated at both the Patapsco and Back River Wastewater Treatment Plants. Further, the plants failed to comply with requirements for testing and reporting of PCBs, toxic chemical testing, mitigation of FOGs (fats, oils, and grease), minimization of environmental impacts, managing within effluent limits, monitoring and reporting, maintaining facility operations staff, and filing an updated wastewater capacity management plan. MDE then filed a lawsuit in January 2022 requesting a state enforcement action. This lawsuit was based on violation of state and federal water pollution statutes, civil penalties, and unauthorized discharge of pollutants at both wastewater treatment plants.

In March 2022, MDE requested that the Maryland Environmental Service (MES) take a supervisory role at the Back River Wastewater Treatment Plant. These actions led to the Back River Restoration Committee contacting Blue Water Baltimore to find out ways the residents of that area can help. A community science pilot program was created, and so far, two events to collect data on *Enterococcus* bacteria levels have been held. Seven of 25 samples (28%) collected on May 26th failed the requirements for the code of Maryland regulations for protecting the recreational use of the waterway. Thirty-four of 43 samples (79%) collected on September 2nd failed the requirements. Recreating in waterways with *Enterococcus* bacteria levels above 130 MPN/100 mL carries a higher risk of getting sick from waterborne pathogens. The sampling results provide a snapshot in time of the water quality. As you can see from the maps, bacteria levels vary by sampling date and location.

Based on continuous testing by Blue Water Baltimore over the past few months, however, the bacteria and pollution levels are improving near both wastewater treatment plants, and they are trending in the right direction. As of October 12, a ruling by the judge in the BWB federal case ordered Baltimore City to submit status updates monthly to the court demonstrating that continual progress is being made towards lower bacteria levels and decreased levels of pollution at both sites. Blue Water Baltimore continues to engage and increase citizen involvement with water collection events to detect bacteria levels. In addition, they are working towards a legally-binding agreement for wastewater treatment plants to become compliant.

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