

# Stormwater Management and Monitoring Compete with Suburbanization

ARUNDEL RIVERS FEDERATION



Anne Arundel County residents benefit from their proximity to the idyllic Chesapeake Bay. Perhaps living near the Bay is too good to be true? Development has skyrocketed within the county as more people have looked to embrace the maritime lifestyle. Unfortunately, more houses, roads, buildings, and parking lots mean that the natural landscape has been replaced by acres and acres of non-pervious surfaces. Now, Arundel Rivers Federation races to keep pace with real estate developers by installing stormwater management practices such as rain gardens, bioswales, and riparian buffers along streams - all in the hopes of mitigating water quality degradation. To track their impact, share water quality data with local residents, and build a case for legislative action to protect the waters flowing into the Chesapeake Bay, the Federation also performs weekly water quality monitoring May to September and releases an annual scorecard.

## Is it safe to swim? Can fish breathe? How dirty is it?

Intense suburbanization in Anne Arundel county has eroded the natural ecosystems' stormwater filtering capacity. Not only does removing forests and meadows with real estate increase runoff but replacing natural habitat with impervious surfaces such as roofs, roads, and parking lots increases the speed stormwater enters waterways and the runoff picks up nasty pollutants during its journey. Arundel Rivers Federation invests heavily in mitigating development through the installation of stormwater best management practices. Simultaneously, they host a community science monitoring program that keeps a beat on water quality and asks, in so many words, is the water "clean"?

Armed with the growing dataset and an easily accessible and interpretable visualization, Arundel Rivers Federation and their partners use the continuous monitoring data set to connect with state legislators on three key pieces of legislation: updating obsolete stormwater management regulations, increasing transparency of environmental enforcement efforts, and curtailing efforts by Homeowner Associations to avoid installing bay-friendly landscaping.

Specifically, Senate Bill 227 will update requirements for erosion and sediment control during construction, and stormwater management after construction, for buildings built after the bill's effective date.

Senate Bill 324 is bipartisan legislation designed to require the Departments of Environment and Natural Resources to publish enforcement efforts online and in annual reports detailing their work to enforce the State's environmental laws.

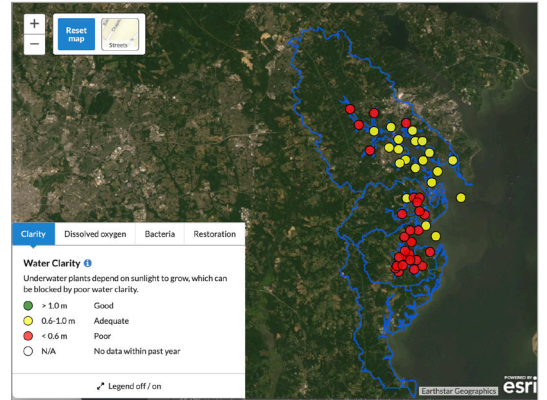
House Bill 322 would prevent a homeowners' association from requiring homeowners to maintain turfgrass, or increases costs for bay-friendly landscaping practices.



## Role of the Monitoring Program

The Federation posts the data that they collect from the monitoring program on an interactive online application. The application has three major uses: first, it conveys data to the general public about water quality on a weekly basis with the intent of helping individuals make decisions about whether they can recreate on the water. Second, the application demonstrates trends in water quality over the past six years. Third, the application also indicates the water quality improvement sites around the watershed to demonstrate the relationship between water quality and restoration work.

Along with consolidating missions and resources the organization was able to aggregate their water quality monitoring data because all three organizations had maintained rigorous adherence to the Mid-Atlantic Tributary Assessment Coalition in their monitoring programs.



## About Arundel Rivers Federation

Uses a science-driven, community-based approach to improve the water quality of our rivers – and we're not afraid to get our boots muddy. The South, West, and Rhode Riverkeeper acts as the eyes, ears and voices for our local Rivers. The organization is wholly focused on achieving our vision of clean, healthy, sustaining waterways for our local communities.

Arundel Rivers Federation was created on January 2, 2019 and is the result of the consolidation of South River Federation and West Rhode Riverkeeper, Inc.

## Nexus to WDC

Thanks to a robust study design, strong digital data management, and a strategic data analysis application, the Federation's monitoring program delivers data-driven details to multiple stakeholder groups with interests in regional water quality. With the data structured in a machine readable format, Chesapeake Conservancy was able to create a web application for individuals to visit and access not only the data but observe real-time analysis of the results.



Grant Funding



Distributed Data Management



Network of Networks

Use Case Summarized by  
Emily Wiggans, Sr. GIS Analyst  
Chesapeake Conservancy, WDC Steering Committee Member