State of the Chesapeake Bay Program

Report to the Chesapeake Bay
Program Executive Council

August 2020

The Susquehanna River joins with the West Branch Susquehanna, right, at Northumberland, Pa., on Sept. 17, 2019. The Susquehanna provides roughly half of the total freshwater reaching the Chesapeake Bay. (Photo by Will Parson/Chesapeake Bay Program)

Introduction

It is no secret that the Chesapeake Bay watershed is a diverse, interconnected ecosystem. From New York, where a farmer plants riparian buffers alongside a tributary of the Susquehanna River, to West Virginia, where a stream restoration project brings native brook trout back to the headwaters of the Potomac River, the health of the Chesapeake Bay is impacted by the actions of the over 18 million people who call this 64,000-square-mile watershed home. Never have these words been truer than in 2020.

A worldwide pandemic like COVID-19 brings a renewed focus to the importance that a clean environment plays on our public health. Contaminated water and poor sanitation can transmit diseases like cholera, dysentery, hepatitis A, typhoid and diarrhea. The United Nations estimates that two million children alone die each year from water-borne diseases. COVID-19 also exposed another harsh reality—Black people are dying at 2.5 times the rate of white people.

The Chesapeake Bay watershed is filled with diverse landscapes and peoples, as well as varieties of plants and animals. We have rural communities, urban areas and suburbs filled with every race, ethnicity and color under the sun. But throughout the watershed a legacy of systemic racism and social inequities exist that can no longer be ignored.

In the most recent Chesapeake Bay Watershed Agreement, our partners committed to better engage underrepresented communities, individuals and organizations into Bay restoration. In 2019, our Diversity Workgroup completed, with the assistance of a contractor, a partnership-wide readiness assessment, which led to the creation of the Bay Program's Diversity, Equity, Inclusion and Justice Strategy.

Additionally, the leadership of the Chesapeake Bay Program—both the Executive Council and the Principals' Staff Committee—formally recognized through signed statements that the long-term success of the restoration effort depends on the equitable, just and inclusive engagement of all communities and residents living throughout the watershed.

Just as people can have good years and bad years—so can the Chesapeake Bay. The extreme weather in 2018 influenced the health of the Bay in 2019. Heavy river flows entering the Bay lowered salinity levels, impacting blue crab and oyster populations. Flooding upstream swept additional nutrient and sediment pollution into the Bay, impacting underwater grasses and water quality.

Despite these environmental, social and public health challenges, the partners of the Chesapeake Bay Program continue to work tirelessly not only for a clean and healthy Bay, but a vibrant and thriving watershed. This report provides highlights from the past year, information on the most recently updated indicators and an overview of how the Strategy Review System is progressing.

Diversity, Equity, Inclusion and Justice Strategy

The Diversity, Equity, Inclusion and Justice (DEIJ) Strategy for the Chesapeake Bay Program provides a visionary framework to guide the partnership in integrating DEIJ principles into the management strategies and biennial logic and action plans. It was developed through extensive stakeholder engagement throughout the Chesapeake Bay Program. The goal of the strategy is to grow racial and ethnic diversity in the partnership to reflect all communities throughout the watershed, help partners to develop as leaders who understand, respect and embrace cultural diversity, and provide them with the tools to continually assess progress toward diversity goals.

Harris Creek is thought to be the largest oyster restoration project in the entire world. At 350 acres, it is bigger than the National Mall in Washington, D.C. and is seeded with more than two billion oysters. A study by the Virginia Institute of Marine Science found that the restored reef can filter the full volume of the creek in less than 10 days during the summer months. (Photo by Will Parson/Chesapeake Bay Program)

Strategy Review System

The Chesapeake Bay Watershed Agreement contains 10 goals and 31 outcomes to advance the restoration and protection of the Chesapeake Bay watershed. Most of the outcomes have time-bound and measurable targets which will directly contribute to their achievement. Signatories of the Watershed Agreement promised to openly and publicly engage watershed residents in implementing these goals and outcomes. Partners work through Goal Implementation Teams (GITs), workgroups and advisory committees to collaborate, share information and set goals. Following the adoption of the Watershed Agreement, the partners crafted Management Strategies, and subsequently, two-year Logic and Action plans for each outcome.

Adaptive management, a "learning by doing" concept, makes up a large portion of the foundation in which the Chesapeake Bay Program is built upon. It is acting amidst uncertainty, carefully monitoring outcomes, transparently assessing progress and redirecting efforts when necessary. The partnership tracks the progress of each outcome through a sophisticated adaptive management process referred to as the Strategy Review System (SRS).

Each of the 31 outcomes has been categorized into one of seven "cohorts", designed to bring related work together and to cue discussion at the most appropriate times. Their placement in the SRS schedule was determined with the timing of key data updates and meetings in mind. The partnership is currently in the middle of the second SRS cycle. Over the past year, the following cohorts and their associated outcomes addressed new and ongoing challenges, requested action or assistance from the Management Board and identified areas that require support. The below next steps reflect the decisions reached between the Management Board and the workgroups in how to best move forward regarding a particular outcome. Some of these decisions are already

in motion or have been achieved. Upcoming cohorts include Clean Water (Forest Buffers, Toxic Contaminants Policy and Prevention, Toxic Contaminants Research, Water Quality Standards Attainment and Monitoring, and 2025 Watershed Implementation Plans), Climate Change and Resiliency (Black Duck, Climate Adaptation, Climate Monitoring and Assessment and Wetlands) and Local Action (Land Use Methods and Metrics Development, Land Use Options Evaluation, Local Leadership and Tree Canopy).

November 2019—Aquatic Life Cohort

Blue crab abundance:

Successes: The current blue crab management framework continues to be successful, and they recently completed a blue crab ecosystem study.

Challenges: Future efforts need to focus more on science and research needs rather than management actions and decisions.

Next steps: The Management Board will continue to support science and research needs for blue crab population assessment and management and ensure that appropriate jurisdictional decision makers are aware of the value of blue crab monitoring and research to the continued management of the species. The EPA Region 3 office can offer modeling and analytical training to staff while the Modeling Workgroup would like to collaborate in investigating the impact of climate change on blue crabs.

Forage Fish:

Successes: Three studies relevant to researching forage species in the Chesapeake Bay were funded, and a citizen science project that examines how forage fish use certain habitats continues.

Challenges: Continued challenges in developing a meaningful forage fish indicator.

Next steps: Concerns exist that there is insufficient data on how forage fish use nearshore habitats, but a variety of programs exist throughout the partnership that collect data from nearshore habitats that could be useful if better coordinated. The Scientific Technical Assessment and Reporting team will work with the Forage Workgroup to identify where monitoring, mapping and data is being collected and then geographically identify priority action areas for nearshore monitoring. They will then host a meeting including other workgroups with similar interests in shallow water monitoring and bring a list of recommendations back to the Management Board.

Oysters:

Successes: Harris Creek is returning ecosystem services. According to a model developed by the Virginia Institute of Marine Sciences, oyster reefs in Harris Creek may be contributing more than three million dollars per year in ecosystem services as they help to remove nutrients from the water.

Challenges: Restoration projects are expensive and low salinity caused by severe weather in 2018-19 negatively impacted oysters.

Next steps: The Department of Defense in Norfolk, Virginia will connect with the National Oceanic and Atmospheric Association (NOAA) Chesapeake Bay Office to discuss how the Readiness and Environmental Protection Integration program can help fund oyster restoration projects. Bay Program partners reaffirmed their commitment to support the oyster restoration goal, and NOAA will work with the Chesapeake Bay Program Communications Office to share oyster restoration success stories. (completed December 2019).

Submerged aquatic vegetation (SAV):

Successes: Currently making progress toward all the actions listed in the two-year Logic and Action plan. Closed the SAV funding gap and expansion of SAV acreage attributed to successful management actions.

Challenges: Limited staff availability to meet an overly ambitious Logic and Action plan. Barriers to restoration include impacts from climate change, shallow water use conflicts (e.g. aquaculture, SAV removal) and a decline in water clarity.

Next steps: The Maryland Department of Natural Resources will organize a meeting to review recommendations generated from a report summarizing policies, statutes and regulations that protect SAV in the Chesapeake Bay. In coordination with the Modeling Workgroup, the SAV Workgroup will identify resilient, long-term SAV beds for protection. The Bay Program's GIT Chairs will meet to discuss the implications of competing goals related to shallow water use. (completed in June 2020).

February 2020 – Stewardship Cohort

Citizen stewardship:

Successes: The Workgroup has strategically focused on building stewardship through behavior change practices. The Workgroup is currently working with the Chesapeake Bay Program Web Team to build a tool that will allow practitioners to access data from the Stewardship Index. A general awareness of social science now exists within the partnership thanks to recent efforts to offer community-based social marketing training and technical assistance to other workgroups.

Challenges: Many challenges exist in developing and sustaining effective stewardship. Additional stewardship efforts need to be elevated but currently, workgroup capacity challenges exist.

Next steps: EPA hired a new position in the Bay Program office to help coordinate behavior change efforts. The

Inmates from Huntingdon State Correctional Institution help plant trees in Huntingdon, Pa., as part of a forest buffer training program. The training was led by a partnership including Alliance for the Chesapeake Bay, Pennsylvania Department of Conservation and Natural Resources and the Pennsylvania Department of Corrections. (Photo by Will Parson/Chesapeake Bay Program)

existing Strategic Science and Research Framework will incorporate social science needs with the help of the Citizen Stewardship Workgroup. In 2022, the Workgroup will return to request the start of another cycle of data collection. The Citizen Stewardship and Diversity workgroups will explore opportunities for closer collaboration. Technical leads for upcoming Bay Program workshops will commit to incorporating social science into their delivery.

Diversity:

Successes: Conducted the second diversity demographic survey of the partnership, signed memorandums of understanding with Bowie State University and Virginia State University and participated at several career fairs and events at historically black colleges and universities. Completed a readiness assessment that showed 88-97% of respondents believed DEIJ practices would benefit the Chesapeake Bay Program.

Challenges: The readiness assessment also showed that 65-75% of respondents are not convinced that the Bay Program is actively demonstrating a commitment to DEIJ. Lack of funding

prevents meaningful engagement and there is a disconnect to the Bay Program that leads to no ownership over logic and action plan activities. Most available employment opportunities are low-paying entry level jobs or unpaid internships. Need to create better ways to define success.

Next steps: Efforts will be made to align future DEIJ trainings with Management Board meetings so members may attend. A process for the DEIJ Strategy will be established and it is recommended the Executive Council and Principals' Staff Committee sign a diversity directive (completed August 2020). Management Board members will compile any entry-level DEIJ opportunities that they are aware of and provide to the Diversity Workgroup. A future Management Board topic will discuss examples of grant guidance that effectively incorporates DEIJ considerations. The Management Board will work toward revising the leadership target in the Diversity outcome.

Public access:

Successes: Great progress has been made toward tracking new public access sites.

Challenges: Some activities in the logic and action plan are out of date due to shifting federal/state/local policy and programming. The capacity of the Workgroup remains a challenge.

Next steps: The Public Access Workgroup will provide the Management Board with a breakdown of jurisdiction and federal funding sources, as well as indicate what step (e.g. project development) it belongs to. The Public Access and Diversity workgroups will coordinate on a better metric for tracking public access available to underserved communities.

May 2020—Next generation stewards cohort

Environmental literacy planning:

Successes: Data from the [Environmental Literacy Indicator Tool (ELIT) Survey](#) allowed the Workgroup to identify gaps, determine the needs of individual school districts and celebrate successful efforts. State working groups champion environmental literacy planning in their respective jurisdictions. The most recent biennial Chesapeake Bay Environmental Literacy Leadership Summit focused on the theme of ensuring equity in environmental education.

Challenges: Data collected from the ELIT survey dropped in Virginia, remained low for Pennsylvania and Delaware and New York did not contribute new data. The development and updating of environmental literacy plans remain a challenge. Input collected shows that there is strong interest in developing these plans but a lack of resources in which to do so.

Julian Segovia, left, and Daniel Salomon help young visitors connect to the Chesapeake Bay at Sandy Point State Park in Anne Arundel County, Md. Segovia and Salomon were the park's bilingual interpretive outreach assistants during summer 2019, a program piloted by Chesapeake Conservancy and funded by the National Park Service. (Photo by Will Parson/Chesapeake Bay Program)

Next steps: Each Management Board member will identify one or two contacts at the leadership level in their jurisdiction who could potentially sponsor environmental literacy efforts. The Education Workgroup will share their preliminary network analysis with the Management Board. The Management Board will review a list of existing funding sources for Student Meaningful Watershed Education Experiences (MWEEs) and discuss with relevant partners.

The Management Board will also discuss using environmental literacy data to aid in decision making after the list of environmental literacy contacts has been updated and shared.

Student MWEEs:

Successes: During the first SRS cycle, it was requested that Management Board ensure appropriate and sufficient staff at state agencies to advance student MWEEs. Since then, Pennsylvania has reinstated an environmental education position and Maryland hired a full-time position. Increased professional development and the offering of continuing education credits has furthered the penetration and implementation of MWEEs. 'The Educator's Guide to a MWEE' and the MWEE 101 course available through NOAA helped expand systemic initiatives. The Outdoor Learning Network was launched in September 2019 to build the capacity of school districts and nonprofit partners to advance environmental education by establishing a network of local school districts and their partners to share information, coordinate efforts and connect with regional and state networks.

Challenges: Training opportunities are only reaching educators interested in environmental education. MWEEs need to be better connected to a variety of disciplines, including environmental justice issues, STEM and workforce development. A need exists for more administrator buy-in to embed MWEEs into district curriculum. Lack of resources, paperwork and a disconnect to federal, state and local natural resource agencies and parks prohibit schools from utilizing public lands in their MWEE implementation and investigation.

Next steps: The Management Board will discuss whether efforts should be focused on improving training at a single school at this time or wait until the COVID-19 pandemic has subsided. The Education Workgroup will draft a letter for the Management Board to send to land grant universities about increasing funding opportunities for in-service and pre-service teacher professional development. The Education Workgroup will provide the Management Board with details on current barriers to schools using public lands and they will identify actions moving forward.

Sustainable Schools:

Successes: Funding was secured in 2018 to install best management practices (BMPs) at schools that contributed directly to Bay restoration goals. As part of that funding, an online ArcGIS tool was developed that displays school, demographic, environmental and land use data that can be used to analyze and make recommendations for the types of BMPs that should be installed on school grounds that will yield the greatest benefit to the Chesapeake Bay Program. The tool is accompanied by guidelines for how state and local planners can use these BMPs for Bay TMDL credit, as well as for how school district personnel can include BMPs in their school district sustainability plans. The governors of both Maryland and Pennsylvania identified sustainable schools as a priority, so increases are expected in both states.

Challenges: District-level involvement in pursuing sustainable schools is limited. Individual teachers work to pursue protection and restoration projects on school grounds which is unsustainable. Many school districts do not have a funding strategy for sustainable efforts.

Next steps: In consolidation with other next generation steward efforts, the Management Board will provide contacts at the leadership level in each jurisdiction. The Education Workgroup will share a list of cleaning products that are sustainable and EPA-approved to be effective against COVID-19 with the Management Board, which in turn will be shared with schools to highlight sustainable schools.

Shaun Miller, left, and Chris Walstrum of Maryland Department of Natural Resources count and measure blue crabs and collect data on mortality during the winter dredge survey in the Nanticoke River on March 9, 2020. (Photo by Will Parson/Chesapeake Bay Program)

Chesapeake Progress

The Chesapeake Bay Program uses a suite of environmental health, restoration and stewardship indicators to track progress towards the Chesapeake Bay Watershed Agreement. These indicators support the partnership's adaptive management-based decision-making process and highlight the critical work taking place to further our commitments.

The data and information that support our indicators are drawn from a range of trusted sources, including government agencies, academic institutions, non-governmental organizations and direct demographic and behavior surveys. In some cases, this data and information dates back three decades, and in others, data collection began shortly before the Watershed Agreement was signed.

Our indicators are published on ChesapeakeProgress, which supports federal, public and internal oversight of our work. Some of these indicators track the factors that influence our ability to achieve our goals, while others track whether we are putting our management approaches and actions in place, and still others track whether we are achieving the goals and outcomes that will support our vision of a sustainable watershed. It is important to note that we are making progress toward all our outcomes—even those currently without a performance indicator.

Additionally, an update of the progress that the Chesapeake Bay Program is making toward meeting the goals and outcomes of the Watershed Agreement is published annually in the Bay Barometer, our review of environmental health and restoration. Here is an update of the indicators that have been updated since September 1, 2019:

Blue crab abundance: The abundance of female blue crabs throughout the Chesapeake Bay decreased 26% from 191 million to 141 million between 2019 and 2020. Despite this decrease, the population remains above the 70 million threshold which is considered to be the minimum sustainable level for female blue crabs in the Bay, but lower than the target of 215 million. Blue crabs have natural variability and the abundance is expected to fluctuate from year-to-year.

Blue crab management: An estimated 17% of the female blue crab population was harvested in 2019. For the twelfth consecutive year, this number is below the 25.5% target and the 34% overfishing threshold. The Chesapeake Bay blue crab stock is not depleted or being overfished.

Diversity: In 2019, the Chesapeake Bay Program conducted its second survey to measure the engagement of diverse and underrepresented voices within the partnership. In the past three years, the percentage of respondents who self-identified as people of color rose from 13.7% in 2016 to 14.6% in 2019. Additionally, the percentage of people of color in leadership positions rose from 9.1% to 10.3%. The Chesapeake Bay Program has a goal to reach 25% diversity in the partnership, including 15% in leadership positions, by 2025.

What about the juvenile blue crabs?

The juvenile blue crab population—crabs that will grow to harvestable size this fall—was estimated to be 185 million, down from 324 million in 2019 and below the long-term average of 224 million. The number of crabs that die in between fall and spring (often due to cold and/or freezing water temperatures)—the overwintering mortality—was 0.36%, likely due to the warm 2019-20 winter. This is the lowest overwintering mortality rate observed since 1996; the average is 4.53%.

Oysters: Ten Chesapeake Bay tributaries have been selected for oyster reef restoration: Harris Creek, the Little Choptank River, Tred Avon, upper St. Mary's and Manokin rivers in Maryland, and the Great Wicomico, Lafayette, Lower York, Lynnhaven and Piankatank rivers in Virginia. The 2019 Maryland Oyster Restoration Update indicates that 788 acres of oyster reefs have been restored throughout the five tributaries in Maryland. Harris Creek was the first large-scale oyster restoration site to be completed, and monitoring and evaluation show that 98% of the reefs constructed between 2012 and 2014 meet the minimum threshold for both oyster density and biomass. The 2019 Virginia Oyster Restoration Update indicates that 539 acres of oyster reefs have been restored, with reef construction and seeding to the Lafayette River now complete.

Public access: Between 2010 and 2019, 194 boat ramps, fishing piers and other public access sites were opened on and around the Chesapeake Bay watershed (including 18 in 2019). This marks a 65% achievement of the goal to add 300 new access sites to the watershed by 2025 and brings the total number of access sites in the region to 1,333.

How much pollution reached the Bay?

The U.S. Geological Survey reports that from October 2017—September 2018, approximately 423 million pounds of nitrogen, 42.1 million pounds of phosphorus and 15,689 million pounds of sediment reached the Bay; a 66%, 181% and 262% increase from the previous year, respectively. An influx of rain in 2018 brought the highest flows of fresh water into the Chesapeake Bay since data was first collected in 1937.

Submerged Aquatic Vegetation (SAV): According to preliminary data from the Virginia Institute of Marine Science, 66,387 acres of underwater grasses were mapped in the Chesapeake Bay in 2019. This is 36% of the partnership's 185,000 goal.

Water quality standards and attainment: An estimated 38% of the Chesapeake Bay and its tidal tributaries met water quality standards during the 2016-2018 assessment period. While lower than the previous year, it is still the fifth highest estimate of water quality standards attainment since 1985.

Members of the Chesapeake Bay Program's Citizens Advisory Committee tour Stroud Water Research Center in Avondale, Pa., on Sept. 18, 2019. (Photo by Will Parson/Chesapeake Bay Program)

Advisory Committees

Citizens Advisory Committee (CAC)

CAC advises Chesapeake Bay Program leadership by representing the residents and stakeholders of the watershed, advocating for transparency and accountability, engagement and education, and the evaluation of restoration work. It provides a non-governmental perspective on the restoration effort, and on how Bay Program policies and programs impact people who live, work and recreate throughout the watershed.

In November 2019, CAC organized a panel to discuss environmental education and workforce development in the District of Columbia. Panelists represented local government, residents that completed workforce development programs and local business owners. The panelists and CAC discussed ways in which to train workers for the jobs of the future, while facing limited staffing and funding. An important takeaway was the need to better expose our youth to environmental job opportunities.

Local Government Advisory Committee (LGAC)

LGAC advises the Executive Council on how to effectively implement projects and engage the support of local governments to achieve the goals and outcomes of the Chesapeake Bay Watershed Agreement. Working to share the views and insights of local elected officials with state and federal decisions-makers, LGAC enhances the flow of information among local governments about the health and restoration of the watershed.

In September 2019, LGAC held a workforce development forum to address the needs of local governments in installing and maintaining stormwater and green infrastructure BMPs, while

developing a "green collar" workforce. Attendees from local and state government, employers and trainers studied several existing successful workforce models throughout the region, and developed a set of recommendations to help support local government needs.

The Local Leadership Workgroup and the Virginia delegation of LGAC organized a two-day bus trip in October 2019 that brought local government officials from the Shenandoah Valley to meet with their counterparts from the Northern Neck/Middle Peninsula area. This opportunity allowed local officials from the non-tidal region of Virginia to better understand how their activities impact the Chesapeake Bay.

Scientific and Technical Advisory Committee (STAC)

STAC provides scientific and technical guidance to the Chesapeake Bay Program on measures to protect and restore the Bay. Providing independent scientific and technical advice in various ways, STAC serves as a liaison between the region's scientific community and the Chesapeake Bay Program, ensuring close cooperation among and between the various research institutions and management agencies throughout the watershed. STAC released the following six reports since September 2019:

Assessing the environment in outcome units (AEIOU): Using eutrophying units for management

The report looks at what restoration success would look like if the Bay Program used "specific species" of nitrogen, phosphorus and sediment, rather than "total" nitrogen, phosphorus and sediment in determining how much of each pollutant needs to be reduced. Specific species could be inorganic versus organic, or reductions in the fall versus reductions in the spring. By using total nutrients and sediment rather than specific species of nutrients and sediment, processes may be masked that would ultimately determine restoration success in terms of supporting fisheries and human health and safety.
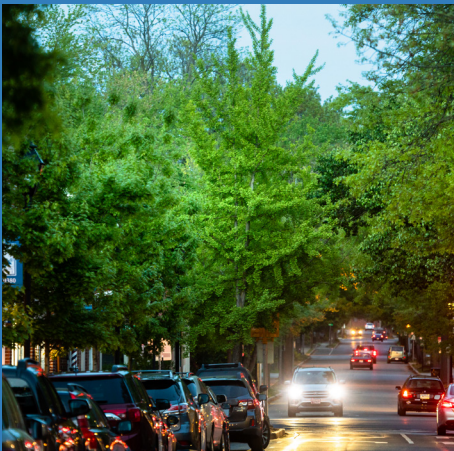
Urban tree canopy

Over two days in January 2020, the second Urban Tree Canopy Summit was held in Laurel, Maryland at the Patuxent Wildlife Refuge. Over 100 professionals gathered to learn about new opportunities available to advance tree canopy efforts through hands-on training and presentations, as well as how to share these opportunities at the state and local levels. Collaborations with new partners were discussed—including those involved in planning, public health and stormwater—and opportunities for improvement were identified, such as tool enhancements, gaps in guidance and/or resources.

Establishing multifunctional riparian buffers: How do we accelerate riparian buffer plantings across the Chesapeake Bay with the greatest economic, social and environmental impacts?

This report explores recommendations and market-based approaches for multifunctional buffers as a means of accelerating riparian buffer plantings throughout the watershed.

Increasing effectiveness and reducing the cost of nonpoint source best management practice implementation: Is targeting the answer?

Jurisdictions will need to reduce a substantial amount of nutrient and sediment pollutants from agricultural and nonpoint sources, which will be achieved largely through the implementation of BMPs. This report looks at why the implementation of BMPs is not having an impact on water quality improvements, and how the Chesapeake Bay Program can develop and integrate mechanisms to target BMPs to areas of the watershed that need assistance.

Plastic Pollution Action Team

The formation of a Plastic Pollution Action Team was one of the five recommendations made in the STAC report on microplastics. It seeks to reduce the presence and impacts of plastic pollution on the Chesapeake Bay and its watershed. The team will begin to address this issue by overseeing research to determine the effects that microplastics have on the Chesapeake Bay ecosystem.

Integrating science and developing approaches to inform management for contaminants of concern in agricultural and urban settings

The report looks at contaminants that impact fish health and the risk to humans who consume them, as well as the effectiveness of certain BMPs to reduce contaminants of concern in both urban and agricultural settings.

Microplastics in the Chesapeake Bay and its watershed: State of the knowledge, data gaps and relationship to management goals

Microplastics in the Bay present a serious risk to ongoing restoration efforts, but we still have little idea of the magnitude and distribution of microplastics within the watershed, much less the potential impact it is having on living resources. The report summarizes five actions that the partnership should immediately take to help stem the threat of microplastics to the Bay.

Revisiting coastal land-water interactions: The triblet connection

This report looks at targeting advanced BMPs to benefit shallow water resources and explores potential refinements to the current Chesapeake Bay Program model strategy. It evaluates whether the "triblet" concept (natural water channels drain to tributaries that connect upload to coastal waters and function as bioreactors) is a useful basis for informing watershed management and advancing coastal research.

A draft report by the Healthy Watershed GIT pulled together everything from biology to water quality. Above, Fisseha Mengistu, a hydrologic technician with the U.S. Geological Survey (USGS), conducts water quality monitoring in Mattawoman Creek in La Plata, Md. (Photo by Will Parson/Chesapeake Bay Program)

Notable Highlights

Chesapeake Bay Watershed Data Dashboard

This online tool launched in July 2020 and provides accessible and understandable data and scientific information to help guide water quality and watershed restoration planning efforts. It is meant to assist those who plan restoration projects at the regional or local level by providing a holistic view of the watershed in a visually appealing, easily understandable manner. It provides a wealth of information including a series of fact sheets for SAV segments throughout the Chesapeake Bay. These fact sheets review SAV trends over time and assess their progress towards meeting their restoration targets. Additional information will be added to the Dashboard over time, including a repository of watershed case studies.

Healthy Watersheds Assessment for the Chesapeake Bay Watershed

In early 2020, the Healthy Watersheds GIT released a draft report, Assessing the Health and Vulnerability of the Healthy Watersheds Within the Chesapeake Bay, that pulled together a set of metrics that looked at everything from biology to water quality, and habitat to land use. The assessment is intended to provide a framework to inform overall watershed health, allowing jurisdictions to account for any positive or negative changes to their own processes and methods.

Nontidal Monitoring Trends

The Chesapeake Bay Program's nontidal water quality monitoring programs has 126 stations throughout the watershed that help estimate nitrogen, phosphorus and sediment pollution in the region's rivers and streams. The U.S. Geological Survey has been leading efforts to synthesize research to provide insights on what factors are driving short- and long-term trends in nitrogen, phosphorus and sediment pollution. Some of the initial findings include:

   • Improvements in the water quality of streams can be attributed to actions taken to reduce pollution from point sources, as well as changes in climate and atmospheric deposition.

   • Nitrogen from urban non-point sources has declined.

   • Phosphorus flowing into the Bay has increased due to the increased amount of sediment passing through the Conowingo Dam.

Phase III Watershed Implementation Plans (WIPs)

In December 2019, EPA released its evaluations of the final Phase III WIPs from each watershed jurisdiction. This third and final phase provides information on actions each jurisdiction intends to take between 2019 and 2025 to meet the goals of the Bay TMDL. Overall, the majority of the WIPs offered a solid foundation for reaching the 2025 goals, but challenges remain in some jurisdictions. To measure the progress each jurisdiction is making toward meeting their Bay TMDL goals, EPA evaluates milestones on a two-year basis. The evaluations of the most recent, the 2020-21 milestones, were released in late July 2020.

Conclusion

The future is never certain, but during these current times, this statement really hits home. Restoring the Chesapeake Bay provides an opportunity for all of us in this watershed to come together and collaborate on how best to address our current public health, economic and societal challenges in a way that also benefits our environment. Over the past few years, programs like the Corrections Conservation Collaborative, Restoring the Environment and Developing Youth (READY) Program and RiverSmart have shown that the environment can provide jobs, help the economy and engage with underserved communities and individuals. While quarantining during the novel coronavirus, more people than ever before got outside, recognizing the healing power of nature. The impact of future health crises can be abated by engaging with our environmental justice communities to ensure everyone within the Chesapeake Bay watershed has equitable access to clean air and water. The opportunities to overcome our current challenges are endless when we work together as a partnership, with restoring the Chesapeake Bay as the foundation guiding our actions.