2023-2024 Biennial Report

Implementation of the *Patuxent River Policy Plan*

Executive Summary

The Patuxent River is the longest and deepest of the eight major tributaries of the Chesapeake Bay. Its length and watershed are contained entirely within Maryland as it flows 110 miles and stretches more than one mile across at its entrance to the bay, with a maximum depth of about 175 feet. Its watershed covers 937 square miles, about one-tenth of Maryland's land mass. The influence of the Patuxent extends into multiple jurisdictions within the state, including seven counties in the Baltimore/Washington D.C. metropolitan area (Howard, Montgomery, Prince George's, Charles, St. Mary's, Anne Arundel, and Calvert), two of Maryland's largest cities (Laurel and Bowie), and one of Maryland's largest unincorporated areas (Columbia).

With incidents of heavy rain becoming more common and the 2025 deadline for achieving the Chesapeake Bay Total Maximum Daily Load (TMDL) cap (nitrogen, phosphorus, and sediment) approaching, the health of the Patuxent River is more important than ever.

Forty-five years ago, the state recognized the importance of protecting the ecological, recreational, historical, and cultural resources of the Patuxent River and its tributaries. The Patuxent River Watershed Act, adopted in 1980, directed the establishment of the Patuxent River Policy Plan (Policy Plan) and the Patuxent River Commission (PRC). The Policy Plan serves as a guide for local jurisdictions and state agencies in carrying out their actions and regulatory programs in the Patuxent River watershed, while the PRC is charged with assisting in coordinating and facilitating the work of state and local governments in implementing the Policy Plan.

The original 1984 Policy Plan, signed by all seven counties within the Patuxent watershed and later approved by the city of Laurel, identified 20 goals and 10 recommendations to improve the Patuxent River. The 2015 Policy Plan, adopted in 2014 by all the local governments represented in the PRC,and in 2016 by the Maryland General Assembly, replaces the original 1984 Policy Plan, which was last amended in 1997.

Mummichog

Kingfisher

The 2015 Policy Plan

The 2015 Policy Plan contains three general policies (Preservation, Advocacy, and eXcitement, or PAX) for the Patuxent River to guide the work of the local jurisdictions and the state within the Patuxent River watershed:

1. **Preservation**. Local jurisdictions and the state will work toward the preservation of the Patuxent River and the land within its watersheds and the restoration of the ecological and economic functions of the river.
2. **Advocacy**. Local jurisdictions and the state will advocate for the Patuxent River by raising awareness among the general public and elected and appointed officials of the challenges the river faces and to make recommendations for improvements.
3. **eXcitement**. Local jurisdictions and the state will create excitement about the Patuxent River and its value as a natural, scientific, economic, cultural, and educational resource.

2023-2024 Biennial Report

The Maryland Department of Planning(MDP) submits a report every two years to the General Assembly on the implementation of the Policy Plan and the status of the Patuxent River and its watershed. This report describes the work that local governments and state agencies performed during 2023 and 2024 in support of the Policy Plan and the PRC's activities that support government implementation of the Plan.

The main areas for action described in the Patuxent River Policy Plan are preservation of the river, advocacy for the river, and excitement (called eXcitement) about the river.

A number of regulatory protocols require counties - through which the Patuxent River flows - to reduce pollution entering the Patuxent, including:

- Municipal Separate Storm Sewer System permits (MS4) issued under the U.S. Environmental Protection Agency's (EPA) National Pollutant Discharge Elimination System;
- Total Maximum Daily Loads (TMDLs) for local waters required by the Clean Water Act of 1972 and also administered by EPA but without a deadline for implementation; and
- The TMDL is required by the EPA to clean up the Chesapeake Bay by 2025 and implemented through Watershed Implementation Plans (WIPs).

The counties in the PRC reported progress in fulfilling these obligations by installing new measures to treat stormwater from previously untreated impervious surfaces and to reduce the loading of nutrients, bacteria, and polychlorinated biphenyls (PCBs) into the Patuxent.

The Maryland Department of Transportation's (MDOT) State Highway Administration (SHA) is subject to a local TMDL and must comply with an MS4 permit.[1] The Maryland Department of the Environment (MDE) approves TMDLs on behalf of EPA – there were no new TMDLs in 2023 or 2024 in the Patuxent River watershed

Columbia, MD, is not an incorporated jurisdiction; however, the Columbia Association, which controls many environmental activities in Columbia, completes numerous best management practices (BMPs) to control stormwater.

Local and state agencies reported fewer but important activities related to Advocacy and eXcitement. The PRC reviewed proposed bills from the 2023 and 2024 sessions of the Maryland General Assembly that affect the Patuxent River and wrote the legislature to support Salt Applicator Certification Program (2023), PFAS Monitoring - Publicly Owned Treatment Works (2023), and the Environmental Accountability Act of 2023. As part of the Commission's outreach work to the communities in the watershed, the May 2023 monthly meeting was held in-person at the city of Laurel Town Hall.

The Commission's Tourism Workgroup continues to refine the Patuxent River Challenge, which has increased recreation on and appreciation of the Patuxent River, covering cultural and recreational amenities in all seven counties and the city of Laurel.

Overall, local governments, state agencies, and the PRC have completed significant preservation, restoration, planning, advocacy, education, and tourism-related activities over the last two years to support restoration and the economic vitality of the Patuxent River. The report describes these activities in detail, reporting first on preservation and restoration activities, then on advocacy work, and finally on activities that generate excitement.

In addition to coordinating the preparation of this document, the primary role of MDP in support of the Policy Plan is to serve as lead staff to the PRC and to facilitate collaboration and coordination of the operations of PRC members. MDP also provides administrative, communications, and planning support for the PRC and its workgroups.

[1] WSSC Water and the Patuxent Reservoirs Watershed Protection Group (PRWPG) advocacy partnership have reported informally on some progress in achieving the nutrient and sediment TMDLs for the reservoirs, but other TMDLs that affect the Parkway and Western Branch WWTPs do not have any TMDL reporting requirements. In addition, WSSC Water is not covered under any MS4 stormwater permit (WSSC Water received a waiver from the Phase II small system permit 13-SF-5501), so no reporting for that is provided either.

2023-2024 Biennial Report:

Implementation of the Patuxent River Policy Plan

Background

Section 5-809 of the State Finance and Procurement Article requires MDP to submit a report every other year (biennially) to the General Assembly on the implementation of the Policy Plan and the status of the Patuxent River and its watershed. This report describes the work completed in 2023 and 2024 by local governments and state agencies represented on the Patuxent River Commission. These include (from north to south in the watershed) Montgomery, Howard, Prince George's, Anne Arundel, Calvert, Charles, and St. Mary's counties as well as the cities of Laurel and Bowie, the Maryland Department of Natural Resources (DNR), the Maryland Department of Environment (MDE), the Maryland Department of Transportation (MDOT), the Maryland Department of Agriculture (MDAG), and MDP.

Through the Patuxent River Watershed Act, adopted in 1980, the Maryland General Assembly created the PRC, consisting of local government, state agency, and other representative stakeholders, to facilitate implementation of the Policy Plan.

Patuxent River in winter.

In addition to the efforts of local governments and state agencies, this report also describes the work the PRC accomplished in 2023 and 2024. The Policy Plan in effect during this reporting period is the 2015 Policy Plan, which was adopted in 2014 by all the local governments represented by the PRC (except for the city of Bowie, which joined the PRC in 2022), and in 2016 by the Maryland General Assembly.

MDP serves as the lead staff to the PRC, providing administrative, communication, planning, and coordination support for the commission and its workgroups. To narrow the focus and guide the work of the commission's stakeholders, the PRC approved action plans for the 2023-2024 time period. The action plans identify specific tasks that support implementation of specific Policy Plan strategies. To help guide these strategies forward, workgroups convened periodically between regular PRC meetings.

As required by statute, this report includes recommendations from MDP concerning implementation of the Policy Plan. These recommendations are provided at the end of this report.

Overview of the 2015 Patuxent River Policy Plan

The 2015 Patuxent River Policy Plan guides the actions of the state, the seven Patuxent counties, and the city of Laurel in their efforts to restore the Patuxent River.

General Policies

The Policy Plan's general policies are divided into three focus areas: Preservation, Advocacy, and eXcitement (represented by the acronym PAX).

Preservation

Local jurisdictions and the state will work toward the preservation of the Patuxent River and the land within its watersheds and the restoration of the ecological and economic functions of the river.

Advocacy

Local jurisdictions and the state will advocate for the Patuxent River by raising awareness among the general public and elected and appointed officials of the challenges the river faces and make recommendations for improvements.

eXcitement

Local jurisdictions and the state will create excitement about the Patuxent River and its value as a natural, scientific, economic, cultural, and educational resource.

Strategies

The Policy Plan's implementing strategies for each of the general policies include:

Preservation

P1. Maintain and improve the health of the Patuxent River so it can support sustainable commercial and recreational fishing and seafood harvesting.

P2. Identify preservation and conservation priorities for the critical natural resources within the Patuxent River Watershed in county and municipal land use documents.

P3. Embrace smart growth and smart conservation practices in the counties and municipalities in the Patuxent River watershed to reduce sprawl and preserve irreplaceable resources.

P4. Restore the health of the river by actions such as encouraging acquisition of properties or easements in sensitive resource areas, planting stream buffers, and controlling invasive plants, focusing on stream buffers.

P5. Preserve the Patuxent River headwaters as a permanent and reliable source of drinking water and improve and restore water quality in the tributaries feeding the reservoirs.

P6. Support the work of local jurisdictions and the state in meeting their respective water quality goals as stated in approved plans and permits.

P7. Preserve and restore the movement of water, fish, and wildlife through identifying and removing barriers.

Advocacy

A1. Keep abreast of issues facing the river in communities within the Patuxent River watershed and share experiences and challenges with the PRC.

A2. Pursue resolution of pollution concerns for communities within the Patuxent River watershed.

A3. Keep elected and appointed officials aware of the issues and opportunities facing the river and seek their support when appropriate.

A4. Recommend changes to policies, programs, legislation and/or regulations to improve and restore water quality in the river and its watershed.

eXcitement

X1. Maintain, create, and encourage opportunities for river-related economic activities in appropriate locations.

X2. Ensure and encourage public access to the river, its tributaries, and recreational opportunities within the watershed.

X3. Support economic and scientific research projects on the river and seek or support funding where possible.

X4. Create and support educational and stewardship opportunities for all communities within the watershed.

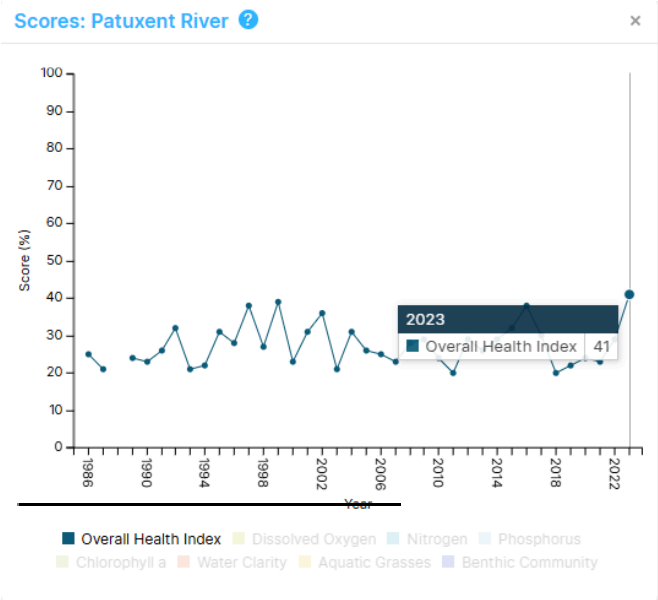
X5. Protect valuable cultural resources and historical properties within the watershed.

Status of the Patuxent River

In the non-tidal portion of the Patuxent River near Bowie, long-term (1985-2023) and short-term (2014-2023) trends for nitrogen, phosphorus, and suspended-sediment load are improving.[2]

However, the overall health index of the tidal portion of the Patuxent set a new peak at 41 in 2023, the highest since 1999. In 2022, it reached 29, with an upward trend the past two years. (Figure 1). The overall health index consists of seven indicators: dissolved oxygen, nitrogen, phosphorus, chlorophyll a, water clarity, aquatic grasses, and benthic community, More details on the index and score are discussed at the University of Maryland's Chesapeake Bay report card website on its webpage.

Figure 1. Tidal Portion – Overall Index



[2] Mason, C.A., and Soroka, A.M., 2024, Nitrogen, phosphorus, and suspended-sediment loads and trends measured at the Chesapeake Bay River Input Monitoring stations: Water years 1985-2023: U.S. Geological Survey data release, https://doi.org/10.5066/P13QLXFP.

In 2023, the tidal score for nitrogen was 66, the highest rating since the 2002 score of 54. The lowest score of 2 was in 1988, (Figure 2). In 2016, phosphorus registered its best score, 69, since tracking started in 1986; in 2022 and 2023, the score has been trending higher with scores of 48 and 50. Although the tidal scores for nitrogen and phosphorus have fluctuated over the past 38 years (, the trend is moving in a positive direction for nitrogen since 2002 and in a slightly positive direction for phosphorus (Figures 2 and 3).[3]

Figure 2. Tidal Portion - Nitrogen Scoring

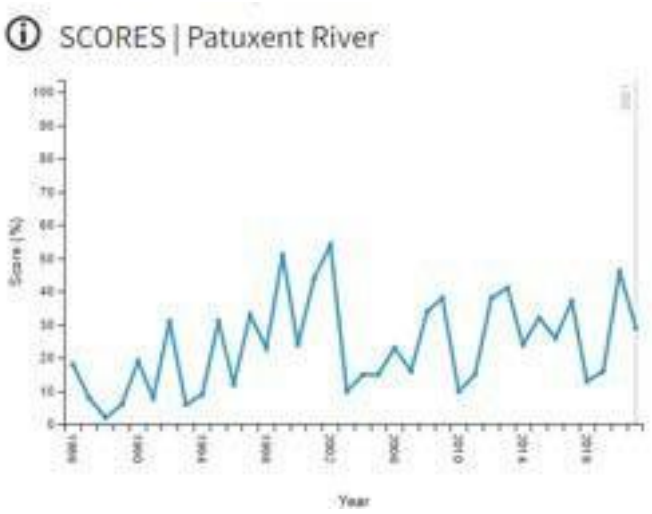
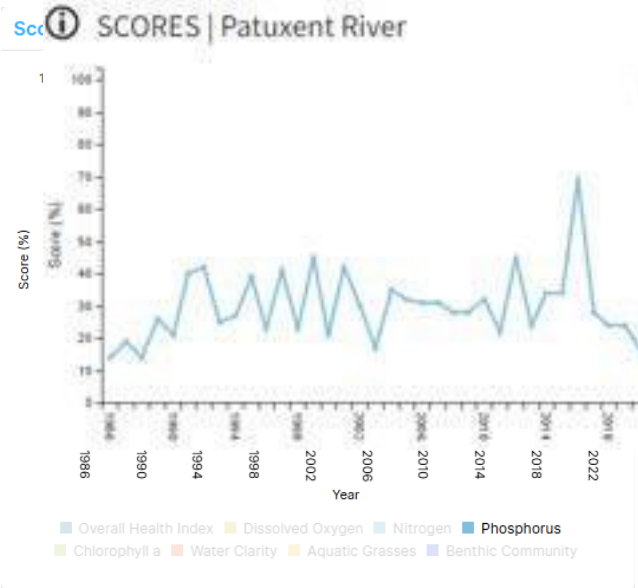


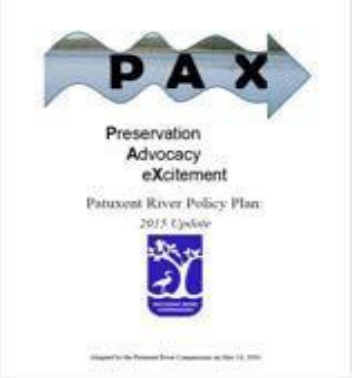
Figure 3. Tidal Portion - Phosphorus Scoring



[3] Eco Health Report Cards. University of Maryland's Center for Environmental Science. https://ecoreportcard.org/report-cards/chesapeake-bay/bay-health/. Accessed January 2025.

Preservation Strategy Implementation: 2023-2024

During 2023 and 2024, local jurisdictions, state agencies, and the PRC completed several tasks to support the Policy Plan's preservation strategies:



PRC

The PRC Long-Range Workgroup focused on the action plan goal of establishing a wetland park in each Patuxent county by 2027. The group continued to identify existing programs, funding opportunities and potential partners.An initiative of the PRC's Federal Assistance Workgroup was to facilitate the town of Eagle Harbor Funding Forum. The forum was held on March 4, 2023 and brought together funding agencies and programs to assist the town with their concerns about flooding and stormwater runoff.

Maryland Department of Planning (MDP)

MDP serves as lead staff of the PRC, providing communications to PRC members, arranging and facilitating meetings of the PRC and its workgroups, and drafting agendas and minutes.

Aside from its PRC assistance, MDP provides administrative, policy, and technical assistance to local governments and state agencies in two areas: programs and projects that support development and reinvestment in our current growth areas, which reduces development pressure on the Patuxent River watershed's forests and farmland; and programs and projects that support local and state resource conservation efforts.

MDP's work in support of development and reinvestment in our current growth areas assists jurisdictions to help identify obstacles and solutions to reinvestment, assists in the development of plans in support of local growth areas, and administers the Heritage Structure Rehabilitation Tax Credit Program to support the redevelopment and reuse of historical Maryland properties for residential and commercial purposes.

MDP's work in support of local and state resource conservation efforts also includes a forest planning resources webpage to provide local jurisdictions with guidelines, recommendations, and technical assistance on policies and standards to protect forests and trees as lands are developed, an online protected lands dashboard to facilitate public access to the latest statistics and data concerning land preservation in Maryland, and providing analysis and policy support for Maryland's agricultural preservation programs.

MDP is a member of the board of the Maryland Agricultural Land Preservation Foundation (MALPF) and partners with MALPF to certify county agricultural land preservation programs. Certified counties in the Patuxent watershed include Anne Arundel, Calvert, Charles, Montgomery, Prince George's, and St. Mary's counties. The Secretary of MDP is also a member of the Rural Legacy Board, which makes final decisions on annual land preservation grants and on proposals for the creation and expansion of Rural Legacy areas. All the Patuxent counties include at least one Rural Legacy area.

City of Bowie

As part of the city's Phase II MS4 permit, the design for an additional stream restoration project was completed, and pending permit approvals, will begin construction in Fall 2025. At an upstream stormwater pond, the process of converting turf grass to native pollinator habitat was started. Hundreds of volunteer hours were spent preparing more than 1,000 native plants grown from seed at the USGS Bee Lab on the grounds of the Patuxent Research Refuge. Other volunteer activities included 80 participants in the Weed Warriors program, 15 workdays at four pollinator gardens, and six stream cleanup events removing more than 6,000 pounds of debris and trash. Other restoration and outreach activities included over 700 trees planted on public and private properties, 140 storm drain markers placed, two final installments of the seminar series focused on seasonal tips for stormwater pollution prevention, and expansion of an illicit discharge education program for residents.

Anne Arundel County

The portion of the Patuxent River watershed in Anne Arundel County consists of three separate watersheds: Little Patuxent, Upper Patuxent, and Lower/Middle Patuxent. The watershed is located along the western border of Anne Arundel County and shares political boundaries with Howard, Prince George's, and Calvert counties. Within Anne Arundel County, the Patuxent River watershed is approximately 125 square miles and contains 573.5 miles of streams.

On November 5, 2021, the county was issued its 5th generation National Pollution Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) permit. This permit will remain in effect until November 5, 2026. Accomplishments associated with implementation of that permit and other planning, restoration, and preservation activities within the Patuxent watershed include:

- Completion of 34 stormwater management infrastructure projects
- Upgrade of three conventional septic systems to denitrification systems
- Installation of two grass swales along Brock Bridge Road
- Retrofit of a Piney Orchard stormwater pond, which now includes a pretreatment feature
- Restored approximately 3,500 linear feet of unnamed tributary streams in the headwaters of Hall Creek. This project was funded under a Bureau of Watershed Protection and Restoration (BWPR) Full Delivery of Turnkey Water Quality Improvements contract.
- Schematic design completed for Towsers Branch project, which includes several step pool stormwater conveyances in eroded outfall channels, tentatively slated for construction in 2025, and a stream restoration, tentatively slated for construction in 2026 - of approximately 2,000 linear feet.
- Repairs completed along a previously restored stream segment of a Crofton tributary. Initiated design of the Crofton Golf (a.k.a. Beaver Creek) stream restoration project - 2,400 linear feet - with construction for Phase I completed in summer 2024 and construction anticipated for Phase II in 2025.
- Continued design development for Phase I of the Russett Community Stream Restoration. Construction of the 3,850-foot project is tentatively scheduled for construction in 2026.
- Contract awarded through BWPR's Full Delivery of Turnkey Water Quality Improvements funding mechanism for 655-foot gully stabilization project near Darcey Lane in Davidsonville.

- Completed design of the Evergreen Towsers stream restoration project, involving the restoration of approximately 2,500 linear feet to an unnamed tributary to Towsers Branch. Construction is anticipated to begin in 2026.
- Initiated a schematic design and continued design development of stream and wetland restoration for the Patuxent River Oxbow.
- In 2023, the Maryland Department of Natural Resources was awarded $1 million dollars through NOAA's Habitat Protection and Restoration grant program for a project at Jug Bay Wetlands Sanctuary. The project includes the creation of a freshwater tidal marsh living shoreline and the restoration of three headwater streams, coupled with the installation of stormwater best management practices.
- The county council approved the Region 2 Plan and Comprehensive Zoning Map, which covers portions of the Little Patuxent and Upper Patuxent watersheds, in May 2024. The planning process for Region 5, which includes portions of the Little Patuxent and Upper Patuxent watersheds, and Region 8, which includes portions of the Upper Patuxent, Middle Patuxent and Lower Patuxent watersheds, kicked off in spring, 2024.
- Conducted biomonitoring in primary sampling units (PSUs) in 2023 and 2024 during Round 4 of the countywide Biological Monitoring Program: Ferry Branch, Cabin Branch, Lyons Creek, and Little Patuxent. Results from these and all other PSUs in the Patuxent River watershed for Rounds 1 through 3 are available online (Anne Arundel County Biological Monitoring Program).
- Added a total of 106 acres to its Rural Legacy Program, with a new farm placed under easement in the Middle Patuxent.

Charles County

From January 2023 through December 2024, Charles County's Watershed Protection and Restoration Program (WPRP) and implementation of its NPDES Phase I MS4 permit supported the objectives of the Patuxent River Policy Plan.

In April 2024, Charles County submitted an updated bacteria TMDL plan for the Indian Creek Lower Patuxent Bacteria TMDL to MDE. The TMDL plan framework is focused on identifying the sources of bacteria spatially and by source type. A monitoring plan was devised, which included a Source Identification Phase for sampling freshwater sites and a Source Trackdown Phase to identify bacteria sources more specifically. MDE approved the plan with minor comments, and the Source Identification Phase will begin in spring 2025.

A feasibility study is underway to identify low-cost sewer options to serve the unincorporated town of Benedict. This study was deemed necessary based on the UMCES 2022 groundwater and surface water sampling of the area around Benedict which analyzed the impact of septic effluent on receiving waters.

The county continued to implement a Septic Pump-Out and Riser Reimbursement Program through 2024. Approximately 326 septic system owners in the Charles County portion of the Patuxent River watershed received pump-out reimbursement and 45 received riser reimbursement through the program in 2023 and 2024. Charles County incentivizes the installation of septic tank risers because they serve as a visual reminder to homeowners of where their tank is located, including the importance of routine maintenance. Risers also provide permanent access to the tank, which is necessary for conducting inspections, pump-outs, cleanings, and repairs. Additionally, one traditional septic system was replaced with best available technology systems using Bay Restoration Funds.

Action	Reporting Period
Septic Tank Pump-Out	326
Septic Tank Riser Installations	45
Best Available Technology	1

The EPA-approved sediment TMDL for the Patuxent River made significant progress towards delisting. Two successive sampling events in 2023 and 2024 resulted in a fish index of biotic integrity score over the impairment threshold of 3.00, which indicates high water quality. With this data and the threshold requirements met, Charles County will be submitting a Final Justification for Delisting for the watershed to MDE in early 2025.

As of December 2024, Charles County has protected 1,952 acres of parks, natural resource management areas, transfer of development rights properties and Maryland Agricultural Land Preservation Fund (MALPF) properties. Additionally, they established 1,679 acres of Forest Conservation easements. Of these totals, 100 acres of MALPF properties and 2.7 acres of Forest Conservation were added in 2023 and 2024.

In 2023 and 2024, Charles County, in partnership with the Chesapeake Bay Trust, awarded grants to the University of Maryland (UMD) Environmental Finance Center and the Chesapeake Conservation Landscaping Council to design and implement a new stormwater management outreach and education program. The initiative focuses on educating Charles County homeowners and Homeowners Associations (HOAs) about the proper maintenance of rain gardens located on private property. These rain gardens are mandated by stormwater management regulations to mitigate runoff and protect local waterways. Currently, there are 62 such rain gardens in Charles County treating stormwater within the Patuxent River watershed.

The program launched in spring 2023 with a Residential Rain Gardens and Porous Pavement Summit, introducing homeowners, landscaping companies, plant suppliers, and property managers to the critical role of rain gardens in managing and treating stormwater runoff. The summit also highlighted the maintenance practices required to ensure their effectiveness and sustainability.

Building on this foundation, Charles County hosted workshops during the spring and summer of 2023 and 2024. These workshops, tailored for homeowners and HOA leaders, provided practical training on rain garden maintenance and were led by University of Maryland Extension agents and certified professionals from the Chesapeake Conservation Landscaping Council. Planned steps for 2025 include continuing rain garden workshops at HOA community locations and introducing a one-day professional training program for landscaping crews on maintaining stormwater management facilities for optimal use of vegetation to treat runoff.

Howard County

Approximately 75 percent of Howard County lies within the Patuxent River watershed and approximately 62 percent of the watershed lies in the Rural West, which contains predominantly low-density residential development, agriculture, and forest. The remainder of the watershed is within the county's Planned Service Area for public water and sewerage and is home to more intensive residential and commercial development, including Columbia New Town.

Howard County's Water Resources Element (WRE) was adopted in April 2010 as an amendment to *General Plan 2000* and subsequently incorporated by reference into *PlanHoward 2030*, and most recently *HoCo by Design* adopted in 2023, their current general plan. The WRE recommended policies and actions to help Howard County manage water resources more sustainably and to ensure that as the county grows, and that its water resources will be conserved, protected, and restored.

Howard County received its fourth NPDES MS4 permit in December 2014. This permit required the county to develop plans to achieve stormwater pollutant load reductions for each local TMDL by December 2015 and to provide water quality treatment for 20 percent of its untreated impervious area by the end of the permit term in December 2019. In response, the county completed an initial Countywide Implementation Strategy (CIS) in December 2015 and an updated CIS in 2017. The CIS determined the county's 20 percent impervious surface treatment goal and demonstrated the means to achieve local stormwater TMDLs. Howard County revised its 20 percent impervious surface restoration goal in 2018, 2019, and 2020, and met the restoration requirement as of March 30, 2018. More recent achievements are discussed below.

Since completion of the CIS, only one new local TMDL has been adopted, a PCB TMDL for the Patuxent approved by the EPA in September 2017. Howard County submitted a draft PCB TMDL Restoration Plan for the Tidal Fresh portion of the Patuxent River to MDE in September 2018. MDE approved the county's plan in a comment letter dated September 23, 2019.

The NPDES permit also required that the county develop watershed assessments and restoration plans to address stormwater pollutant load reductions for each watershed in the county by the end of the permit term. Howard County completed watershed assessments and restoration plans for the Middle Patuxent River and Little Patuxent River watersheds in 2015, and for the Patuxent River mainstem watershed in 2017.

The watershed assessments and restoration plans measure current environmental conditions and identify opportunities for restoration projects to be included in the county's capital budget. These projects will improve water quality in the county's streams and rivers, as well as the Chesapeake Bay. Potential projects include stream restoration, reforestation, adding water quality treatment to existing stormwater management ponds, constructing new stormwater management facilities, and stabilizing existing storm drain pipe outfalls.

Howard County received its fifth NPDES MS4 permit in December 2022. This permit includes the following requirements:

- Provide water quality treatment for 1,345 acres of the county's untreated impervious area by December 2027
- Continue progress toward achieving stormwater pollutant load reductions for each local TMDL
- Develop a plan within one year of approval for a new local TMDL to achieve the specified stormwater pollutant load reduction

- Develop and begin implementation of a salt management plan to reduce the use of winter weather deicing materials in the third year of the permit term
- Develop, implement, and maintain a good housekeeping plan (GHP) for county-owned properties not required to be covered under Maryland's Stormwater Industrial General Permit. Submit the GHP and begin implementation by the third year of the permit term.

The county has been conducting biological and physical assessments of the streams in each major watershed on a 5-year rotating basis since 2001. The biological assessments study the benthic macroinvertebrates (bottom-dwelling organisms) as an indicator of water quality and stream health. While the current NPDES MS4 permit includes specific requirements to complete this type of monitoring, previous permits did not; the county recognizes the importance of understanding the conditions of its stream systems and collected the data, nonetheless. Data are used for general characterization, to support watershed assessment and management efforts, and to track conditions over time. The county uses the same monitoring protocols as DNR in their Maryland Biological Stream Survey. Round 4 assessments were completed in 2022. The county's program was modified in 2023 and monitoring plans were submitted to MDE to meet MDE's permit required elements. Year 1 of Round 5 of the program began in 2024 and incorporates changes to meet the county's permit conditions and MDE's required elements. A total of 30 sites were sampled across the county's 15 subwatersheds.

Montgomery County

Maryland-National Capital Park and Planning Commission (M-NCPPC)—Montgomery County Environmental Activities in the Patuxent River Watershed January 2023-December 2024

The Montgomery County Department of Parks, through its natural resources management and park stewardship plans and programs, protects and manages terrestrial and aquatic natural resources including wildlife, plants, and habitats that occur on M-NCPPC parkland. The department conducts annual stream habitat and biomonitoring on lands within the M-NCPPC park system, coordinating its monitoring work with the county DEP stream monitoring program. DEP includes the data collected by Department of Parks staff in the county's comprehensive stream condition monitoring database.

During the reporting period, thirty-three native trees were planted by private property owners mostly using *Reforest Montgomery* coupons for purchasing trees. In 2023, the Montgomery County Department of Parks added 32.9 acres to its parkland holdings in the Rocky Gorge watershed. In addition, about 16.5 reforested stream buffer acres in the Hawlings River watershed and about 68 reforested acres at the Oaks Landfill site continue to be managed. The Department of Parks also planted an additional 16.8 acres of forest, and coordinated six volunteer cleanup events in the watershed resulting in a total of 550 pounds of trash removed.

The Department of Parks has continued to implement its Deer Population Management Program, which reduces the number of deer in M-NCPPC parkland, and therefore the adverse effects of deer overpopulation on forest and other ecosystems. The program focuses on large, wooded areas within parkland and along stream valley parks. Within the Patuxent River watershed, the program has centered on Rachel Carson Park. In the reporting period, 61 deer were harvested from the park. Yearly deer harvests have resulted in a continuing decline in population, with an estimated population that fluctuates between 15-30 deer per square mile through the course of the calendar year.

An update of the county's general plan, *Thrive Montgomery 2050*, was approved and adopted in 2022. *Thrive Montgomery* is a long-term guide for county land use and will be implemented over several decades. *Thrive Montgomery*'s focus on a compact form of development with a mix of uses supported by transportation systems that make alternatives to driving practical and attractive will be essential pieces of a comprehensive strategy to fight climate change and preserve the Patuxent River. A stronger focus on walking, biking, and transit infrastructure will be crucial but the significance of mixed uses and compact development in reducing driving is equally important. The environmental benefits of dense, walkable neighborhoods dovetail with the desired outcome of increasing preference across age groups to live in walkable places served by a mix of uses and amenities.

In 2024, the Montgomery County Planning Department completed a *2025-2030 Strategic Plan*. The *Strategic Plan* provides a near-term road map with implementation occurring over the next five years. The *Strategic Plan* focuses on three main themes including economic competitiveness, racial equity and social justice, and environmental health and resilience.

Prince George's County

(M-NCPPC)—Prince George's Department of Parks and Recreation, Environmental Outreach, and Education in the Patuxent River Watershed January 2023-December 2024

M-NCPPC offers a wide variety of education programs and outreach opportunities primarily through its Natural and Historic Resources Division (NHRD). These environmental education programs and outdoor experiences are focused on connecting participants and visitors to the Patuxent watershed. In 2023-2024, NHRD has provided 2,890 environmental based programs to 68,317 participants of various ages totaling 154,803 of engagement hours. Curriculum-based programming on park properties includes pontoon boat tours, guided nature hikes through wetlands and forests, fish seining and identification, and more. In-school programs include students building watershed models to determine how impervious surfaces impact runoff. A new Indigenous People program was created in 2024 and is being developed to focus on the history, impact, and connections of Native Americans to the Patuxent River. All programs instill a message of stewardship and connection to the natural world.

Unique outdoor experiences and recreational opportunities available inside the watershed include canoe and kayak rentals, primitive tent camping including four campsites located on the Patuxent Water Trail, over 40 miles of mixed used natural surface trails including 20 miles at Jug Bay Natural Area, three boat ramps, eight soft launch sites, and multiple fishing and hunting areas. Guided kayak tours, introductory camping programs, and guided birding trips are also offered by M-NCPPC. Additional natural surface trails are expected to be built in the coming years. Jackson's Landing boat ramp and fishing pier at Jug Bay Natural Area are scheduled to be renovated in 2025.

M-NCPPC has a strong volunteer program which yields thousands of volunteer hours geared towards environmental projects. These projects include river and pond clean ups, invasive species removals, educational programming support, and various wildlife projects such as bluebird nest monitoring and amphibian surveys. Some volunteer opportunities are long term commitments by groups such as 501-C3 organizations, schools, clubs, and families. These opportunities include Adopt-A-Trail and Adopt-A-Park programs which designate sections of trail or parks to be cared for by that group.

High profile conservation projects within the Patuxent watershed highlight M-NCPPC's commitment to protecting and restoring its natural resources. These projects often include an educational component allowing public school students, college students, and adults to participate in the work. The wild rice restoration project at Patuxent River Park partners with Prince George's County Public Schools to grow the ecologically important native wild rice in middle classrooms during the winter.

Students then visit the park in the spring to transplant their classroom plants into the marsh. The popular osprey monitoring program allows the general public to join a park naturalist as he checks, records, and bands osprey chicks to monitor the local population. A research project on soras, a secretive wetland bird, at Patuxent River Park used radio telemetry to study the species' biology and migration patterns. One component of this research project was published in The Journal of Field Ornithology in February 2024. Another scientific paper is currently under review for publication. Other conservation projects occurring in the watershed include creating and maintaining pollinator meadow habitats and leading citizen science projects such as FrogWatch USA.

The Park Planning and Environmental Stewardship (PPES) Division's Land Acquisition Team acquired approximately 800 acres of land in the Patuxent River watershed for designation as conservation parkland.

(M-NCPPC)—The Prince George's County Planning Department January 2023-December 2024

In response to SB 526/HB 723, which were approved during the 2023 Maryland Legislative Session, the Prince George's Planning Department led the drafting of three revised environmental ordinances, which were adopted by the Prince George's County Council to meet the original July 1, 2024 deadline, the revised Woodland and Wildlife Habitat Conservation Ordinance, CB-021-2024, the revised Tree Canopy Coverage Ordinance, CB-022-2024, and Subdivision Regulations that amended the required minimum stream buffer widths. The adoption of these environmental ordinances was supportive of goals contained in *Plan 2035: Prince Georges' Approved General Plan* including concentrating future growth, prioritizing and focusing county resources, creating choice communities, and protecting and valuing county natural resources. *Plan 2035* also commits to proactively greening the built environment, restoring degraded resources, and promoting a more sustainable development pattern that reduces reliance on driving and shifts development pressures away from greenfields, which are further addressed in the Prince George's County Climate Action Implementation Plan.

St. Mary's County

St. Mary's County, covering 67.9 square miles within the Patuxent River watershed, continues to make significant strides in preserving and enhancing the watershed through collaborative efforts involving county leadership, multiple departments, non-profits, state agencies, and local stakeholders. The county focuses on three main goals: Preservation, Advocacy, and eXcitement, with notable achievements in each area.

Preservation

In 2024, the Patuxent Tidewater Land Trust secured funding to acquire a conservation easement on a 104-acre farm in the Huntersville Rural Legacy Area. This property features 5,500 feet of forested stream buffers along tributaries of Locks Swamp Creek and Persimmon Creek, safeguarding critical habitats for forest interior-dwelling bird species.

In CY23 and CY24, the St. Mary's County Department of Land Use and Growth Management (LUGM) staff conducted 1,051 Critical Area reviews, 922 stormwater reviews, and 264 floodplain reviews of development applications. Staff used these reviews to ensure compliance with regulations and require the installation of thousands of acres of native trees and shrubs, stormwater control devices, and floodplain safety measures in the Patuxent and Chesapeake Bay watersheds.

The St. Mary's County Department of Public Works and Transportation (DPW&T) is responsible for carrying out inspections, surveillance, monitoring, and enforcement to ensure compliance with MDE's NPDES MS4 permit.

DPW&T has identified 2,159 outfall locations and has proactively screened 213 outfalls for dry weather flows to ascertain the presence of illicit discharges over the past two years. DPW&T receives reports of illicit discharges via a newly developed 311 public reporting system as well as other means.

The MS4 program has county and contracted inspectors to inspect 1,309 stormwater management facilities of which 153 are county-owned facilities to ensure a reduction in the amount and type of pollution that could enter the storm drainage systems. County inspections of these systems continue routinely. Maryland Environmental Service inspects and collects data from stormwater BMP facilities. The county collects and tracks the data and completes additional inspections as needed.

DPW&T continues to seek equivalent impervious acre credit associated with alternative practices that result in pollutant load reductions such as stream restoration, regenerative/vacuum street sweeping, installation of septic BAT systems, stabilization of existing storm drain systems or outfalls, and shoreline restoration, while encouraging low impact development throughout the county. Through the MS4 Street Sweeping initiative we have collected and stopped 92.74 tons of debris off the public roadways from entering the storm drain systems and waterways.

The current impervious acres treated in the restoration activity schedule by stormwater-quality BMPs in St. Mary's County is 609 acres. The county restoration activity schedule has identified additional water quality projects to restore additional 56.75 acres.

Advocacy

To help with pollution prevention, DPW&T developed an Inspection & Investigation Program Standard Operating Procedure that was put into place in July 2020; subsequently, a local Storm Water Pollution IDDE ordinance was adopted and became effective in January 2021. The county continues to implement these to address stormwater impacts.

The LUGM continues to work on updating the Comprehensive Plan and the Critical Area program focusing on responsible development to protect all county watersheds. The county has been actively working with the Federal Emergency Management Agency (FEMA) and the National Flood Insurance Program (NFIP) to ensure that floodplain management practices align with federal standards.

Through these efforts, St. Mary's County has obtained an NFIP Community Rating System Class 7 rating. This rating reflects the county's exemplary floodplain management activities, including preserving open space, protecting natural floodplain functions, regulating development in the floodplain and watershed, and addressing special flood-related hazards like coastal erosion and migrating stream channels.

eXcitement

DPW&T and LUGM both maintain public-facing websites to keep residents informed about environmental programs, including stormwater management and shoreline protection. DPW&T's webpage shares information with the public about its various preservation programs including MS4, nuisance flooding, and environmental landfill monitoring links. LUGM also maintains a webpage that includes a new floodplain management page and Critical Area pages to inform the public about initiatives and regulations.

LUGM, Visit St. Mary's, and the St. Mary's County Department of Economic Development have partnered to create the Chesapeake Bay Passenger Ferry Feasibility Study Consortium, which has completed a feasibility study for a public ferry service to transport visitors to key destinations along the Chesapeake, Potomac, and Patuxent watersheds. The consortium is currently working with the National Park Service to assess potential destinations.

St. Mary's County aims for the ferry to not only provide greater access to the Chesapeake Bay and surrounding vital watersheds, but also to educate the public and inspire enthusiasm for their preservation. Additionally, the Department of Recreation and Parks (R&P) is planning to install living shorelines at both Shannon Farm and Snow Hill Park, with the intention of providing education about conservation and encouraging public engagement while providing additional protection for the Patuxent River watershed.

St. Mary's County continues to demonstrate its commitment to protecting the Patuxent River watershed through a combination of preservation efforts, public education, and proactive floodplain management. These initiatives, including the expansion of rural legacy areas, the creation of new parks, and updates to development plans, ensure sustainable resource management and environmental stewardship. The county's efforts further enhance its role as a model for responsible development and watershed protection.

WSSC Water and the Patuxent Reservoirs Watershed Protection Group

Founded in 1996, the Patuxent Reservoirs Watershed Protection Group (PRWPG) has worked to protect the water quality in the Patuxent reservoirs and the contributing 132 square mile watershed. The PRWPG is a partnership that includes several PRC member agencies (Howard, Montgomery, and Prince George's counties and WSSC Water), as well as the Howard and Montgomery Soil Conservation Districts (SCDs).

Patuxent Reservoirs Watershed Mapping and Geodatabase Project

With assistance from WSSC Water technical staff, the partnership's Technical Advisory Committee (TAC) completed the upgrade of a web-based GIS application tool that will enable the creation of specialized maps and analyses to be able to track data trends in the watershed of the Patuxent reservoirs and to support more detailed modeling.

Winter Salt

The Patuxent reservoirs supply potable water to approximately 3% of WSSC Water's 1.9 million customers. Since the late 1990s, concentrations of sodium and chloride, ingredients of salt applied to roads and parking lots during the winter months, have steadily increased in this water supply.

In early 2024, the PRWPG requested that the Patuxent reservoirs watershed be designated as a Special Salt Management Area in salt management plans and application strategies. In October, the PRWPG sent transmittal memorandums out to all appropriate agencies, asking for support of this request. This non-binding request, if adopted, will lead to appropriate implementation strategies to reduce salt applications in the Patuxent Reservoirs watershed while maintaining public safety.

WSSC Water continues to host an annual Salt Summit aimed to be a collaboration between concerned environmental professionals and local salt appliers to find ways to safely decrease salt use in the region to help protect water sources. WSSC Water also continues to share its *Be Salt Wise in Winter* web page to inform customers about the connection between salt use and the impacts to drinking water sources as well as the appropriate way to apply salt to winter sidewalks and driveways.

TMDLs

The sediment TMDL for Triadelphia Reservoir was established to address excess sedimentation and the resultant loss of storage capacity for long-term water supply. Considering recent measures undertaken to reduce sedimentation in the watershed, largely attributed to agricultural BMPs and bathymetric survey results used to measure water storage capacity loss in the reservoirs, the PRWPG's

TAC continued to investigate the possibility that the sediment TMDL has been achieved. In May 2023, a technical memorandum was sent to MDE for their consideration to remove the TMDL. MDE has questions regarding the memorandum but has not yet formally submitted them to the TAC.

Land Acquisitions

As part of its source water protection efforts, WSSC Water purchased 18 acres of land in Howard and Montgomery counties near the Patuxent reservoirs to expand the forested buffer surrounding the drinking water source. Additionally, the Howard County Agricultural Land Preservation Program and Montgomery County Department of Parks preserved land in the watershed through easements or land purchases.

Agriculture

The Patuxent Reservoirs Watershed Agricultural Cost-Share Program is a collaborative local funding source established in 1998 by Howard and Montgomery counties and WSSC Water to assist small farming operations that are ineligible for state and federal programs.

The Howard and Montgomery Soil Conservation Districts (SCDs) both provide technical and financial assistance from this funding source to implement BMPs that reduce soil loss and improve water quality. In 2023, the county SCDs provided approximately $30,000 in cost-share assistance to install BMPs that help protect the watershed.

Additionally, the TAC identified a need to engage tenants and landowners on rented agricultural land because agricultural conservation practices are less likely to be installed on rented lands. In 2024, the TAC developed a survey to ask tenants and landowners about their willingness to participate in agricultural conservation practices. It will be further dispersed in 2025. The information received may be used to better target future implementation of agricultural conservation practices on rented lands.

Restoration Projects

Prince George's County and their consultant, in cooperation with WSSC Water, restored approximately 1,200 linear feet of severely eroded stream channel along an unnamed tributary to the T. Howard Duckett (aka Rocky Gorge) Reservoir. This WSSC Water-owned land is located just upstream of the drinking water intake leading to the Patuxent Water Filtration Plan. This stream restoration is estimated to reduce the sediment load to the reservoir by 323 tons per year, the nitrogen load by 322 pounds per year, and the phosphorus load by 156 pounds per year.

Reservoir Water Quality Monitoring

WSSC Water continued its reservoir water quality monitoring, including monitoring the public recreation areas at both reservoirs for harmful algal blooms (HABs). In 2023, one Water Contact Health Advisory for HABs was initiated in each of the T. Howard Duckett and Triadelphia Reservoirs. The T. Howard Duckett Reservoir HAB Advisory ran from mid-August until mid-October. The Triadelphia Reservoir HAB Advisory existed from mid-July through October. In 2024, one Advisory was established between mid-September and early October. The advisories were triggered solely on elevated cell counts of cyanobacteria (i.e., blue-green algae). No algal toxins were detected about their advisory thresholds within either reservoir.

Washington Suburban Sanitary Commission's T. Howard Duckett Dam on Rocky Gorge Reservoir, Howard and Prince George's Counties

Maryland Department of the Environment

The Maryland Department of the Environment (MDE) approved the following TMDLs for the Patuxent River and its tributaries as of January 2023 :

Title of TMDL	Date Approved
Fecal Coliform for Restricted Shellfish Harvesting Areas of Battle Creek, Buzzard Island Creek and Hog Neck Creek in the Lower Patuxent River Lower in Calvert, and St. Mary's counties	May 21, 2019
Sediment in the Non-Tidal Patuxent River Middle Watershed, Anne Arundel, Calvert, and Prince George's counties	July 2, 2018
Sediment in the Non-Tidal Patuxent River Lower Watershed, Anne Arundel, Calvert, Charles, Prince George's, and St. Mary's counties	July 2, 2018
Polychlorinated Biphenyls in the Patuxent River Mesohaline, Oligohaline and Tidal Fresh Chesapeake Bay Segments	September 19, 2017
Sediment in the Patuxent River Upper Watershed, Howard, Anne Arundel, and Prince George's counties	September 30, 2011
Sediment in the Little Patuxent River Watershed, Howard, and Anne Arundel counties	September 30, 2011
Fecal Bacteria for the Patuxent River Upper Basin in Anne Arundel and Prince George's counties	August 9, 2011
Mercury to Cash Lake, Prince George's County	March 18, 2011
Fecal Coliform for the Restricted Shellfish Harvesting Area in Mill Creek of the Lower Patuxent River Basin in Charles County	August 20, 2009

Title of TMDL	Date Approved
Phosphorus and Sediments for Triadelphia Reservoir (Brighton Dam) and Phosphorus for Rocky Gorge Reservoir, Howard, Montgomery, and Prince George's counties	November 24, 2008
Fecal Coliform for Restricted Shellfish Harvesting Areas in Solomons Island Harbor, Washington and Persimmon Creeks, and Cuckold Creek of the Patuxent River Lower Basin in Calvert, and St. Mary's counties	September 27, 2005
Island Creek, Town Creek, Trent Hall Creek, St. Thomas Creek, Harper and Pearson Creeks, Goose Creek and Indian Creek, and a Water Quality Analysis for Battle Creek of Fecal Coliform for Restricted Shellfish Harvesting Areas in the Lower Patuxent River Basin in Calvert, Charles, and St. Mary's counties	May 25, 2005
Mercury to Lake Lariat, Calvert County	January 27, 2004
Sediments and Phosphorus to Centennial Lake, Howard County	April 24, 2002
Biochemical Oxygen Demand (BOD) for the Western Branch of the Patuxent River, Prince George's County	June 6, 2000

Maryland Department of Natural Resources

Fisheries

The Striped Bass Program monitors the near-shore fish community at six sites in the tidal Patuxent River from St. Leonard Creek to Selby Landing. This sampling has been conducted since 1983 and is complementary to the Juvenile Striped Bass Seine Survey. Data collected is used to create annual indices of abundance for several fish species. The blue crab summer trawl survey samples sites in the Patuxent River monthly from May-October.

Freshwater Fisheries and Hatcheries Division (FFHD) staff conducted a range of fisheries, habitat and water quality surveys throughout the Patuxent River watershed. Extensive temperature monitoring during the summer index period (June 1 - August 31) occurred at five sites in conjunction with brown trout surveys at four locations. Central Region staff also worked with Trout Unlimited (TU) for weekly temperature and dissolved oxygen monitoring in the tailwater below Brighton Dam. Trout stocking occurred along the Upper Patuxent (float stocked by TU volunteers), Patuxent tailwater below Brighton Dam (float stocked by TU volunteers), Middle Patuxent River (float stocked by TU volunteers), Little Patuxent at Savage Mill, Lake Elkhorn, Centennial Lake, and Put and Take trout stocking in downtown Laurel.

A Fyke Net Survey was conducted on Triadelphia Reservoir (spring 2023 and 2024) to assess white and yellow perch population characteristics and other panfish. An electrofishing survey was also conducted on Rocky Gorge in Fall of 2024 to assess sportfish populations. Warmwater species were stocked to enhance existing recreational fisheries at Rocky Gorge Reservoir (Tiger muskie 10,000 and walleye 20,000).

Invasive species program staff, southern region, and central region staff worked on a blue catfish pilot study in the tidal-freshwater portion of the Patuxent river utilizing drones to film aerial images during standardized electrofishing surveys. The drone footage was used by modelers at the United States Geological Survey Eastern Ecological Science Center to develop population models.

Patuxent River Oyster Initiatives for the Past Two Years

DNR has conducted oyster initiatives in the Patuxent River for many years. For 2023 and 2024 combined, departmental oyster plantings totaled 76.7 acres. Sanctuary areas accounted for 6.9 acres and fishery areas for 69.8 acres. The majority of the funding sources for the river support fishery enhancement. Three types of plantings occurred: oyster shell from shucking houses, spat-on-shell oysters produced in Maryland using hatcheries, and seed oysters imported from James River, Virginia. Shucked shell totaled 30,218 bushels on 22 acres, spat-on-shell totaled 54.2 million spat on 43.6 acres, and Virginia seed totaled 8,099 bushels on 11.1 acres.

Chesapeake Bay National Estuarine Research Reserve (CBNERR-MD)

CBNERR-MD and its site partners, Jug Bay Wetlands Sanctuary, and Patuxent River Park have been working closely to advance research, stewardship, education, and training in the Jug Bay area and the wider Patuxent River watershed. Highlights of effort over the past two years include:

- Research: CBNERR-MD supports three continuous water quality monitoring stations and one weather station through its System Wide Monitoring Program in addition to conducting submerged/emergent vegetation surveys and surface elevation tables as part of its long-term monitoring efforts to track change over time in Jug Bay's wetlands. This past year, graduate students analyzed water quality data over time since the WWTP upgrade and noted significant reductions in nutrients. CBNERR-MD has also supported two Margaret A. Davidson Research Fellows, both of whom conducted field investigations in Jug Bay.
- Stewardship: Thanks to PRC's support, CBNERR-MD and Friends of Jug Bay were able to secure Bipartisan Infrastructure Law funding for the design and permitting of one shoreline and three stream restoration efforts at Emory Waters Nature Preserves, part of Jug Bay Wetlands Sanctuary. We are now working to secure funds for construction. The Reserve continues to support Wild Rice restoration efforts at Patuxent River Park and was recently able to utilize Inflation Reduction Act funding to enhance this work along with sora rail and osprey monitoring. To expand community science opportunities, the SAVWatchers program enhances the SAV monitoring conducted by the Reserve.
- Education: Explore the Patuxent Teen leadership Paddle was conducted again in 2024 after a brief hiatus. Working with the Patuxent River Park and Friends of Jug Bay, this week-long camp was promoted to Prince George's County students and tiered pricing/scholarships were available. Staffing support for education naturalists was increased through the Inflation Reduction Act and professional support and knowledge exchange through the MId Atlantic Climate Education Forum.
- Training: After a 5 year hiatus, Maryland's Coastal Training Program is back in action and offering a wide variety of training and technical support for practitioners and decision-makers to promote healthy ecosystems, resilient communities, and vibrant economies. CBNERR-MD also continues to support the Patuxent River Conference and serves on the planning committee for this knowledge exchange event.

Habitat Preservation and Restoration

In 2023 and 2024, DNR state grants were awarded to eight habitat restoration projects in the Patuxent watershed. These grants will invest $5,177,351 into the watershed over the next few years. The projects include nearly 140 acres of reforestation, 3800 linear feet of living shoreline construction, approximately 20 acres of meadows and grass buffers, and 3.36 acres of tidal marsh restoration.

These projects will provide nutrient and sediment load reductions to the local waterways, estimated at 6,697 pounds of nitrogen, 2,297 pounds of phosphorus, and 148,183 tons of sediment annually.

DNR's Rural Legacy program protected 507 acres across five properties in the Patuxent River watershed in 2023 and 2024. DNR's Program Open Space Stateside acquired one property encompassing 42 acres in the watershed.

Maryland Department of Transportation

The Maryland Department of Transportation (MDOT) continues to comply with state and federal laws and regulations for stormwater management (SWM) as well as MDE permit requirements. MDOT continues to implement the practices in the 2000 Maryland Stormwater Design Manual and remains in compliance with the Stormwater Management Act of 2007, including the revised Chapter 5 of the 2000 Maryland Stormwater Design Manual, by implementing environmental site design to the maximum extent practicable for all new and redevelopment projects.

Within the Patuxent River watershed, MDOT State Highway Administration (SHA) owns, operates, and maintains an extensive roadway network with significant drainage and SWM systems. The MDOT SHA Water Quality Bank was created to help ensure extra water quality credits are available for major highway, bridge, and district special projects from which to debit when other MDOT SHA projects are not able to provide water quality treatment for impervious areas. As of May 2024, there were 22.57 acres of water quality credit available for debiting in the Patuxent River watershed.

MDOT SHA has established a systematic stormwater and drainage asset management program to operate and remediate permanent drainage and stormwater assets that convey and treat highway runoff. The program's goal is to provide preventive and remedial solutions for the drainage and stormwater infrastructure within MDOT SHA rights-of-way to provide required water quality treatment and protect valuable resources within the Patuxent River watershed. The SWM inventory database is continuously updated to include newly constructed SWM facilities. Between January 2023 and December 2024, construction was completed for three new SWM facilities and 83 facilities were proposed as part of new highway development projects. During the same period, three existing facilities completed rehabilitation construction and rehabilitation design advanced for another 11 facilities within the watershed. As of December 2024, 96% of existing SHA-owned and maintained SWM facilities in the watershed are functioning as designed.

Since 2015, SHA has implemented 44 restoration BMPs recommended by MDE and the Chesapeake Bay Program for the improvement of water quality in the Patuxent River watershed (6-digit HUC 021311). Between January 2023 and December 2024, SHA completed inspection of restoration BMPs throughout the watershed. SHA also implemented adaptive management activities and reported on the performance of the Upper Little Patuxent stream restoration project located in the Little Patuxent River watershed (8-digit HUC 02131105). Data from these reports is being used to inform future adaptive management decisions and design plans. Planning and design for the adaptive management of BMPs is projected to continue in the upcoming years. SHA will continue to implement restoration BMPs in the Patuxent River watershed to improve water quality and make progress toward TMDLs approved by EPA.

Advocacy Strategy Implementation: 2023-2024

In 2023 and 2024, the local jurisdictions and PRC completed the following tasks in support of the Advocacy strategies in the Policy Plan:

Patuxent River Commission

During each Maryland legislative session, the PRC reviews proposed legislation germane to its mission and selects priority bills to support or oppose (PRC members who represent state agencies abstain from voting). The PRC provided letters of support for the Salt Applicator Certification Program (2023), PFAS Monitoring - Publicly Owned Treatment Works (2023) and the Environmental Accountability Act of 2023.

Maryland Department of Planning

MDP staff coordinates and facilitates the meetings of PRC workgroups.

MDP's work includes drafting agendas and minutes and writing up workgroup findings for the PRC.

The Bernie Fowler Wade-in

Many variables can be tracked to measure the health of the Patuxent River. One of the simplest and most fun is the Annual Bernie Fowler Wade-In, which also raises awareness and generates excitement about the Patuxent River.

Senator Fowler conducted the Wade-in for 34 consecutive years. The wade-in relies on a simple scientific approach: how deep into the river can we wade in before losing sight of our sneakers?

Senator Fowler passed away on December 12, 2021, in his beloved Calvert County. Bernie Fowler served as Calvert County commissioner from 1970-1982 and as Maryland state senator from 1983-1994. As a young man in the 1950s, he stood chest-deep in the Patuxent while netting blue crabs and was able to see his feet on the river bottom. Years later he estimated water clarity in the 1960's to be 57 inches, but when he held the first "wade-in" in 1988 he lost sight of his sneakers at a depth of just 10 inches. In the 37 years since, the "Sneaker Index" hit a low of 8 inches in 1989 and reached a high of 47 inches in 2019. In 2023, the index measured 30 inches of visibility and in 2024, the official index was 25 inches. The Wade-in is now continuing with his grandson, Cody Fowler, carrying on the tradition.

The Annual Bernie Fowler Wade-Ins were held on Broomes Island from 1988 through 2009. Since 2010, the event has been held at the Jefferson Patterson Park and Museum in Saint Leonard in Calvert County. The Wade-In has evolved into a symbol of the need for stewardship of the state's precious water resources.

Senator Bernie Fowler at the 32nd Annual Wade-in

Bernie Fowler, *Chesapeake Quarterly*, April 2016

eXcitement Strategy Implementation: 2023-2024

In 2023 and 2024, several local jurisdictions and the PRC completed the following tasks in support of the eXcitement strategies in the Policy Plan.

After adoption of the Patuxent River Policy Plan, the PRC established a Tourism Workgroup to create, maintain, and encourage opportunities for river-related economic activities. The workgroup also seeks to increase public access to and recreational opportunities on the river and its tributaries throughout the Patuxent River watershed.

The Tourism Workgroup continued to promote the Patuxent Challenge, the PRC's multi-county effort to promote outdoor activities that support the local economy and increase residents' awareness and interest in the Patuxent River and its many tributaries.

In 2025, the PRC Tourism Workgroup plans a coordinated Patuxent Challenge outreach event among the counties and WSSC Water representatives who serve on the workgroup. The workgroup also intends to get local businesses involved by having them offer gifts to Challenge participants. The workgroup includes county tourism officials and others who are working to implement the eXcitement strategies of the *Patuxent River Policy Plan*.

Recommendations to Facilitate Implementation of the 2015 Patuxent River Policy Plan

State agencies and local governments continue to undertake significant projects to implement the adopted 2015 *Patuxent River Policy Plan*.

The PRC, which is tasked with supporting state and local implementation of the Policy Plan, will continue to focus on a number of actions that can be accomplished during the year, in accordance with available staff resources, but will also continue focusing on longer-term actions through the Long-Range Workgroup.

Longer-term actions currently include the PRC's goal to determine what needs to change (e.g., laws, regulations, policies, science) to achieve restoration of the Patuxent River by 2040. MDP recommends continued support from federal, state, and nongovernmental organizations to ensure the success of this goal.

Note: The city of Laurel, Calvert County and Maryland Department of Agriculture continue to support the 2015 Patuxent River Policy Plan but did not provide an update for this report.

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