Fall 2023

DoD Chesapeake Bay Program Journal

Edited by the DoD Chesapeake Bay Program Team

PROTECTING THE CHESAPEAKE BAY FOR MILITARY READINESS, FOR OUR COMMUNITY, FOR FUTURE GENERATIONS

Meet DoD's New Regional Environmental Coordinator

By DoD Chesapeake Bay Program

Please welcome the newest addition, Mr. Blake Waller, as the Regional Environmental Coordinator (REC) for Commander, Navy Region Mid-Atlantic (CNRMA) in Norfolk, Virginia. Mr. Waller grew up in rural Halifax County, Virginia, on a working farm, where he firsthand saw the benefits of land conservation and the implementation of farming best management practices to improve water quality and soil conservation. Witnessing the benefits of these practices, Mr. Waller became involved with the local 4-H chapter and the local Soil and Water Conservation District, where the hands-on experiences led to his building interest in broad-scale land and soil conservation. In 2009, he received his bachelor's degree in environmental science from Virginia Tech with a concentration in land management. He later received his master's degree in natural resources with a concentration in global sustainability from Virginia Tech in 2017.

Mr. Waller started his professional career with Naval Facilities Engineering Systems Command (NAVFAC) Washington in 2009, overseeing Natural Resource, Cultural Resource, and National Environmental Policy Act (NEPA) contract actions and providing installation support on complex issues. In 2015, he transitioned to NAVFAC Mid-Atlantic (MIDLANT) to oversee Sikes Act implementation, Section 7 Endangered Species Act consultations, lead natural resource contracting efforts, and support complex NEPA actions that were occurring within the MIDLANT area of responsibility. In 2020, he was afforded the opportunity to become the Installation Environmental Program Director (IEPD) for Naval Air Station Oceana, where he provided guidance for all shore environmental programs for the installation.

In his current role, Mr. Waller partners with state agencies and governments to promote long-term sustainability of the military mission while strengthening environmental restoration and protection efforts within the Department of Defense. In this capacity, he is responsible for managing the REC program on behalf of the CNRMA as DoD REC for Environmental Protection Agency Regions I & III and as Navy REC for Regions II & V.

Mr. Waller was appointed as the REC representative in April 2023 and is excited to bring his professional and personal experience to the position. He is most energized to build upon the existing strong relationships and partnerships throughout the Bay Watershed and beyond. Welcome Blake!

IMAGE PROVIDED BY BLAKE WALLER DoD REC

Mr. Waller hopes to bring his experience in environmental science and natural resources to the CBP team.

IN THIS ISSUE

Achieving Water Quality Goals in the Chesapeake Bay: A Comprehensive Evaluation of System Response (CESR)

By Kevin Du Bois, DoD CBP

After decades of work, the Chesapeake Bay Program Partnership (Partnership) has acknowledged that its water quality goals will not be met by 2025. The CESR report was developed to analyze why achieving healthy water quality standards in the Bay has been slower than expected. It also identifies opportunities for improving the effectiveness of the Partnership's programs to meet their ultimate goal of restoring the Bay's living resources. For DoD, continuing to prioritize its management activities that result in multiple benefits for water quality and natural resources, carbon sequestration and climate resilience, as well as mission readiness, will support the accelerated progress needed to achieve Chesapeake Bay Watershed Agreement goals and objectives over time.

Background

Under the authority provided by the Clean Water Act, the Bay jurisdictions and EPA adopted Bay water quality standards in 2003. These water quality standards were meant to provide the fundamental conditions necessary to support the Bay's designated use for the sustainment of living resources, e.g., oysters, blue crabs, striped bass, etc. However, when nutrient reduction efforts failed to attain Bay water quality standards, the EPA developed the country's most expansive Total Maximum Daily Load (TMDL) in 2010. The regulatory TMDL set nutrient and sediment load targets, "a pollution diet" for the Bay, that, if met, were predicted to achieve the water quality standards necessary to restore Bay living resources. Unfortunately, modeling and monitoring evidence indicates that current efforts to reduce nutrient loads will not meet the TMDL targets by its 2025 deadline (Figure 1). Between the establishment of the Bay TMDL baseline and 2021, the credited jurisdictional management actions are estimated to result in 49% of the total nitrogen (TN) and 64% of the total phosphorus (TP) goals, based on the computational modeling conducted by the Partnership. In addition, the Partnership's ambient water quality monitoring program indicates that estuary water quality has been slow to respond to the observed nutrient and sediment reductions in many regions of the Bay. Accordingly, the Partnership's Science and Technical Advisory Committee (STAC) developed the CESR report to analyze why water quality improvements were not progressing as expected.

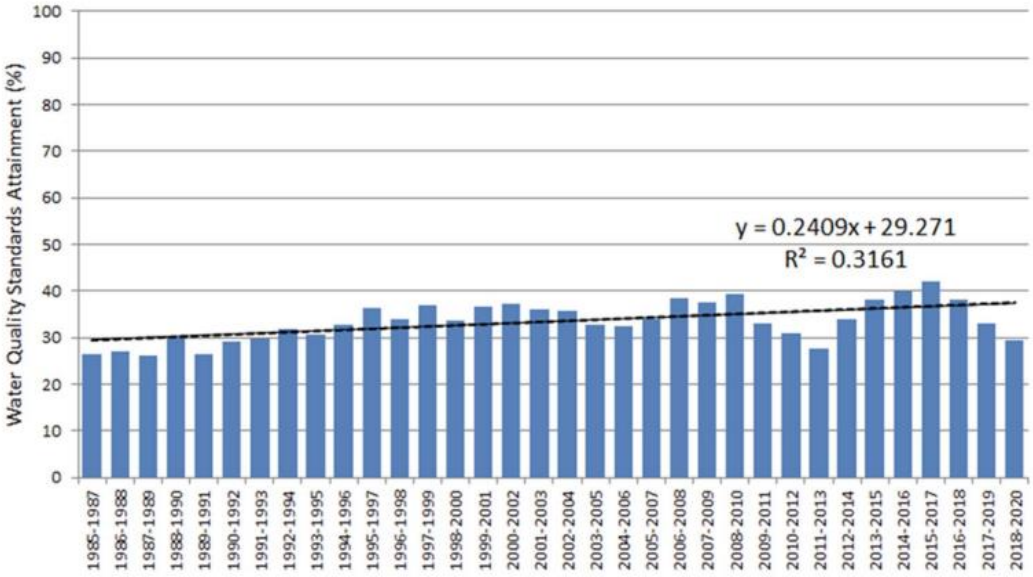

Figure 1. Achievement of Chesapeake Bay watershed water quality standards from 1985-2020.

Policy Implications:

The extensive history of nonpoint source pollution policy illustrates the limits of relying on voluntary actions. New and refined (regulatory) requirements in case-specific circumstances may be necessary to achieve substantial progress in reducing nonpoint source loads.

CESR Report – Three Key Findings

The CESR report documents that achieving pollutant reduction and water quality improvements is proving more challenging than expected and that existing implementation actions to reduce nonpoint sources of nutrients are insufficient to achieve the TMDL. Tens of millions of pounds of TN reductions are needed to achieve the TMDL goal, but a decade of implementation since 2010 has produced only two million pounds per year of nonpoint source TN reductions, as estimated by the CBP watershed model. Evidence also suggests that nonpoint source pollution control efforts may not be as effective at producing nutrient reductions, resulting in a water quality response gap (Figure 2). The CESR report suggests that the TMDL accounting framework tasks water quality managers to prioritize the counting of water quality best management practices and assessing their **predicted** pollution reductions, rather than asking if those practices actually achieve the pollution reductions needed in the Bay. Regarding the conditions needed to support living resources, the report finds that nutrient load reductions have not produced the expected level of increased dissolved oxygen in most of the Bay's habitats. Improving water clarity and expanding submerged aquatic vegetation remains below the stated goals. Other factors, including climate change impacts, may also be confounding efforts to restore living resources. Recent studies suggest that higher water temperatures offset roughly 6% to 34% of the water quality improvement from TN reductions. All this led the Partnership's STAC to question whether water quality response to reduced pollutant loads may occur fairly slowly until conditions are met, aka "tipping points," to accelerate improvements. They also clarified that Bay water quality criteria were selected based on chemical and physical conditions (dissolved oxygen and water clarity) necessary, but not sufficient alone, to support fish and invertebrate species living in different habitats and at different life stages. Perhaps diverting from conventional wisdom, they suggested that significant enhancement of living resources could be achieved through additional management actions without complete achievement of water quality standards across all habitats.

Policy Implications:

- **Additional funding of existing implementation efforts is unlikely to produce the intended nutrient reduction outcomes.**
- **Climate change is producing increases in water temperature and changing precipitation patterns that confound efforts to achieve water quality goals.**
- **Achieving and sustaining substantial nonpoint pollutant reductions will likely require development and adoption of new implementation programs and tools.**

Policy Implications:

- **Opportunities exist to adjust approaches to prioritize management actions that improve living resource response.**
- **New financial incentive programs such as pay-for-performance or pay-for-success programs offer opportunities to reward adoption of highly effective practices.**

The CESR report also pointed out that the Bay system faces permanent and ongoing changes in land use, climate change, population growth, and economic development and that these changes will challenge notions of Bay restoration based on recreating historical conditions. Moreover, the STAC reported that the Partnership's current portfolio of adaptive management processes is inadequate to address the uncertainties and response gaps described in the CESR report. The STAC suggested that refining restoration goals over time should be considered as knowledge evolves about what future conditions are possible, what local communities and the partnership at-large see as priorities, and what is required to attain those possible future outcomes. Uncertainty is inherent in each of these.

On a more positive note, the CESR report suggested that opportunities to meet Bay restoration challenges exist but will require changes and new approaches to implementation, planning, and decision making. STAC suggested that the current adaptive management process for water quality could be enhanced in several ways. They recommended the use of "decision science" techniques and processes to integrate complex technical analyses with the planning processes used by jurisdiction leaders with the authority to make choices about goals, programs, and budgets. They identified that a number of tools and processes are available to

identify and reduce decision-relevant uncertainties, and that existing tools can be used for a variety of purposes, including supporting program design and implementation, and prioritizing research needs.

Incorporating CESR Report Findings into DoD Chesapeake Bay Program Efforts

Four decades of efforts to manage nutrient and sediment pollutants have improved water quality conditions in some portions of the Chesapeake Bay, but results are mixed. Additionally, changing conditions from population growth, land use, and climate will make future restoration more challenging. However, opportunities exist to improve the effectiveness of pollution reduction efforts and accelerate improvements in living resources by building on the data, knowledge, and experience gained over decades of effort. Capitalizing on these opportunities will require adoption of new policies, procedures, and programs and expanded capacities to address uncertainties around system response to decision making. Achieving reductions in pollutants and realizing improvements in water quality and living resources in a system as large, diverse, and complex as the Bay watershed calls for patience as changes are planned and implemented and the system responds. To meet these challenges, the DoD CBP is providing comments on the Partnership's assessment of the current status of the Bay Watershed Agreement's 31 goals and outcomes (Figure 3) and is participating in the Partnership's Beyond 2025 steering committee. The DoD CBP will be working with partners to understand how to incorporate the CESR report information into future directives for the Bay Program and Watershed Agreement. Having to predict, the DoD CBP anticipates that the future will demand more pay-for-performance initiatives, a more comprehensive focus and elevated priority on natural resource restoration in concert with water quality improvements, and some revised goals and outcomes to reflect changing expectations regarding predicted future Bay conditions and restoration potential. What does this mean for the DoD? Installations should continue to prioritize natural resources restoration through Integrated Natural Resource Management Plan implementation to complement voluntary and required water quality improvements. The DoD will need to understand how to take advantage of nutrient credit purchase opportunities authorized by the National Defense Authorization Act, as nutrient credit banks often have pay-for-performance built into their accounting framework. Installations should look at climate executive orders and other policy directives and leverage their emphasis on natural and nature-based solutions to implement projects that meet water quality, natural resource, carbon sequestration, and climate resilience goals as these will also accelerate the achievement of the broad suite of Chesapeake Bay Watershed Agreements goals and outcomes (Figure 4). The CESR report also advocates less attention on the dissolved oxygen conditions in the mid-Bay deep water, but rather increased attention on the 'edges' of the Bay where shallow water meets marshes and small tributaries. DoD installations with waterfront property will need to be cognizant of this new enhanced scrutiny on management of these areas.

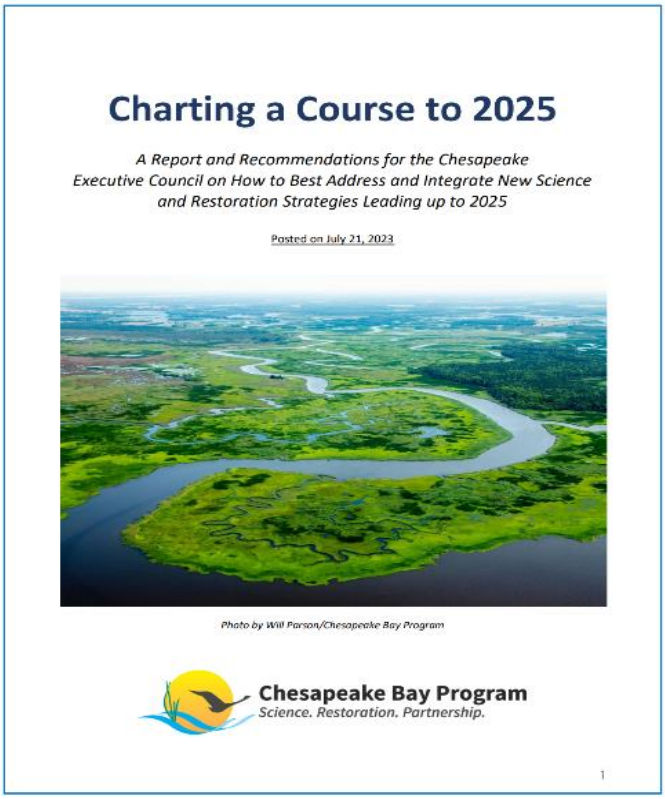

Figure 3. The DoD CBP is currently providing comments on Charting a Course to 2025 in the Partnership's Beyond 2025 steering committee. This report can be found at: https://www.chesapeakebay.net/what/publications/charting-a-course-to-2025

PHOTO BY NRL CBD

Figure 4. Naval Research Laboratory Chesapeake Bay Attachments conducted stream restoration that repaired stormwater infrastructure, reduced bank erosion and sediment loads, promoted floodplain connectivity and enhanced species habitat.

Success Story: DoD CBP Engages with Students on DoD Environmental Careers

By Angela Jones, DoD CBP

DoD CBP staff members Angela Jones and Kevin Du Bois, along with Naval Support Activity (NSA) Hampton Roads Natural Resource Manager (NRM), Taylor Austin discussed Navy environmental work and careers with 50 Virginia Beach Public Schools students, in the Environmental Studies Program at the Chesapeake Bay Foundation's Brock Environmental Center. The Environmental Studies Program (Program) empowers 11th and 12th grade students with broadening their understanding of sustainability through environmental service projects; use of the natural community; interdisciplinary instruction; and challenged-based, collaborative thinking and learning. The DoD CBP strives to continue meeting the environmental literacy goal of the Chesapeake Bay Watershed Agreement by enabling students to gain knowledge needed to act responsibly to protect and restore their local watershed.

IMAGES PROVIDED BY ANGELA JONES, DOD CBP

Kevin Du Bois (left) and Angela S. Jones (right) present to students at the Environmental Studies Program in Virginia Beach City Public Schools about the DoD CBP program and DoD environmental careers.

Speakers presented on the importance of and commitment to the DoD's environmental mission and the superior benefits of a DoD environmental career and provided personal stories of unique employment pathways that led to environmental careers with the Navy. The MIDLANT Human Resources Department provided valuable information on internships and recent graduate and student trainee employment opportunities. Following the presentations, a Q&A session sparked positive interactions among students, teachers, and environmental staff.

Speakers were able to have small group discussions with the students and the Program instructors. The students and instructors were encouraged to learn all the DoD is doing to protect the Bay while emphasizing the importance of diverse experiences in the workplace. Furthermore, many students were eager to learn more about the potential career pathways leading to work in DoD environmental programs. It was exciting for the DoD staff to hear how the students are already inspiring environmental change and instituting environmental stewardship through their local legislative process as well as being actively involved in internships and volunteer opportunities in the public and private sectors. The outreach was a resounding success not only for the students, but also for DoD environmental staff, which led to a request for similar future outreach events. For more information about this event, please contact Angela Jones at angela.s.jones7.civ@us.navy.mil.

IMAGE PROVIDED BY ANGELA JONES, DOD CBP

Taylor Austin, NSA Hampton Roads NRM, speaks to the students about his personal career path.

Success Story: Clean the Bay Activities at the 99th Readiness Division

By Elizabeth Gorman, 99th Readiness Division

The 99th Readiness Division (RD) Directorate of Public Works manages more than 200 hundred Army Reserve facilities in the northeastern portion of the United States. Four of those facilities operate under a General Permit for Discharges from State and Federal Municipal Separate Storm Sewer Systems (MS4) in the state of Maryland within the Chesapeake Bay Watershed. The permit requires the 99th RD to create and foster opportunities for public and/or staff participation throughout the permit term. The Environmental Division hosted three clean up events and participated in two planting events at the 99th's Maryland MS4 centers earlier this year.

In February 2023, the 99th's Environmental Division hosted an environmental cleanup event at Area Maintenance Service Area (AMSA) #83 in Baltimore. This facility is situated directly on Curtis Creek, which feeds into the Chesapeake Bay. Environmental Division staff teamed with AMSA staff to clean up areas along the creek where trash washes up regularly. The event was aimed at engaging facility staff in environmental stewardship and stormwater management.

In April 2023, the 99th's Environmental Division hosted two cleanups and took part in two planting events just before Earth Day on April 22. These events reminded all involved that the 99th's operations have the potential to directly impact the Chesapeake Bay. Trash and litter were cleaned up from the grounds of the Charles County Army Reserve Center in White Plains, MD, and the SSG Isadore S. Jachman Army Rreserve Center (ARC) in Owings Mills, MD.

The staff on site were briefed on their potential direct impact to the Chesapeake Bay and why its protection is critical. Staff stressed that trash and litter that may contain bacteria and harmful chemicals that, if washed into the water system and eventually the waterways, can contaminate the water, kill aquatic life, and deplete important nutrients.

IMAGES PROVIDED BY ELIZABETH GORMAN, 99TH RD

Facility personnel at the 99th Environmental Division participated in cleaning up Curtis Creek (top), in addition to working with personnel at Brandt Memorial ARC to plant wildflowers around the monument sign (bottom).

At the 1SG Adam S. Brandt Memorial ARC located in Baltimore, 99th staff teamed with facility personnel to plant wildflowers and bring awareness to the importance of pollinators, most importantly bees. The soldiers not only helped plant the wildflowers but have continued to maintain the garden.

The last event was a publicly organized tree planting event by the Chesapeake Bay Foundation. It took place at Reed Center for Ecosystem Reintegration in Middletown, MD. This event brought the community awareness of the contribution that trees make within riparian stream buffers, which are critical to preserving the well-being and vitality of the Chesapeake Bay Watershed and its many ecosystem services.

Chesapeake Bay Action Team (CBAT) Updates

By Aditi Kumar, Brown and Caldwell

Members of the Chesapeake Bay Action Team (CBAT) convened for its quarterly meeting on July 27, 2023. Members reviewed ongoing Chesapeake Bay-related service and installation projects and activities and were provided with a presentation on Datacall overview and training that was followed by a Q&A session.

Chesapeake Bay Service Lead and Installation Roundtable Discussion

The DoD CBP sent an inquiry to all the installations asking for information on methodologies used to meet compliance requirements regarding limits of copper discharged in the water when boat hulls are cleaned, per the "General Permit for Discharges from Marinas." The inquiry will also require installations to provide information on any treatment technology they are using to both contain and treat the discharged copper.

Furthermore, it was brought to the attention of CBAT participants that the National Defense Authorization Act was modified last year to allow the military to purchase and trade nutrient credits to meet MS4 or TMDL nutrient reduction goals. Guidance on facilitating this nutrient purchase is currently in progress.

Presentation: 2023 Datacall Overview and Training

Ms. Elizabeth Karivelil provided an overview of the procedures and expectations for installations in Fiscal Year (FY) 2023 Best Management Practices (BMP) and Projects & Indicators (P&I) datacalls, which were released on August 1 and September 1, respectively. The presentation gave the installations an in-depth review of the types of BMPs and projects reported, distribution details, the structure of each spreadsheet, focus areas for this fiscal year, upcoming guidelines for stream restoration reporting, state-by-state reviews, and updates from last year's datacall and FY2022 crediting reports. The focus areas for the 2023 BMP datacall are to correctly report annual BMPs, complete reporting of planned BMPs, collect information to inform coordination with jurisdictions, correctly report wetland and stream restoration BMPs, and to make sure failed inspection and lapsed maintenance dates are updated. Ms. Karivelil emphasized that annual BMPs must be reported each year to be credited and have been a focus for many years due to inconsistent reporting. The DoD CBP will use the data reported from both the BMP and P&I datacalls to calculate installations' contributions to military climate action plans. This year's BMP datacall will be similar to last year's with the focus on collecting information for progress and historical BMPs installed under a Stormwater Construction General Permit, since it is now a requirement to indicate whether a Notice of Termination has been submitted by the installation. Additionally, Ms. Karivelil presented a state-by-state review of key issues for the datacalls and changes to templates for Maryland, Pennsylvania, Washington, D.C., and Virginia. A recording of the July CBAT meeting is available via the CAC-enabled portion of the DENIX webpage: https://authoring.denix.osd.mil/chesapeake/home

DoD Chesapeake Bay Program Updates

- DoD CBP FY2022 Annual Progress Report is available: https://www.denix.osd.mil/chesapeake/dod-cbp-annual-progress-reports/index.html
- The Summer 2023 CBP Journal is available: https://denix.osd.mil/chesapeake/dod-cbp-quarterly-journals
- 2023 REPI Challenge Funding recipients have been announced. Congratulations to all winners!
- The Beyond 2025 Steering Committee plans to report to the Executive Council of the Chesapeake Bay Program Partnership in October regarding 2014 Chesapeake Bay Watershed Agreement goals and outcomes not on track to meeting their 2025 targets.

The next CBAT meeting is scheduled for October 26, 2023.

DoD/DoN Chesapeake Bay Program Office
1510 Gilbert Street
Building N-26, Room 3300
Norfolk, VA 23511

Check it Out

Improving Understanding and Coordination of Science Activities for Per- and Polyfluoroalkyl Substances (PFAS) in the Chesapeake Bay Watershed, published March 2023. This CBP Partnership, Science and Technical Advisory Committee Workshop Report summarizes the current understanding of sources, occurrence, and fate of PFAS and identifies on-going efforts and approaches to inform the potential effects on fish and wildlife, and their consumption by humans.

The full report is available at: https://www.chesapeake.org/stac/wp-content/uploads/2023/03/FINAL_STAC-PFAS-Report.pdf

Partnerships to Advance Climate Resilience in Sentinel Landscapes, REPI webinar, October 11, 2023. Learn more about how the Sentinel Landscapes Partnership is working to tackle climate resilience and adaptation challenges considering conservation, preservation, and national defense: https://bah16f18.adobeconnect.com/rid0lilsmie4/

Connecting Counties & Military Installations. This SERDP-ESTCP webinar, recorded on August 9, 2023, discussed resources and opportunities available to counties that foster and strengthen military and county partnerships: https://bah16f18.adobeconnect.com/ps1r9ihfm17d/

Planning for Electric Vehicles on Military Installations. This SERDP-ESTCP webinar held on October 5, 2023, focused on DoD-funded research efforts to support transition to electric vehicles on military installations. The recording can be found here: https://www.youtube.com/watch?v=M-1fkTVIXPA

CBAT Quarterly Conference Call and Meeting. This meeting will be on October 26, 2023, 10:00 a.m. to Noon EDT. Contact Kevin Du Bois or Ashley Kelly to receive a meeting invitation with a web link.

MS Teams Conference Call Phone Number: 213-379-5743

Phone Conference ID: 573 204 564#

This newsletter is produced by Brown and Caldwell under NAVFAC Atlantic A-E Contract N62470-14-D-9022 in support of the Safe Drinking Water Act and Clean Water Act Environmental Compliance Program. For more information or to be added to the email distribution list, please contact the DoD Chesapeake Bay Program: http://www.denix.osd.mil/chesapeake/home.