



# DoD CHESAPEAKE BAY PROGRAM JOURNAL

Edited by the DoD Chesapeake Bay Area Program Team

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

## New Proposed Kittatinny Ridge Sentinel Landscape in Pennsylvania

By Ashley Kelly, DoD CBP

The Sentinel Landscapes Partnership was founded in 2013 by the U.S. Department of Agriculture, Department of Defense (DoD), and Department of the Interior. The Partnership’s mission is to strengthen military readiness while conserving natural resources, supporting agricultural and forestry economies, increasing public access to outdoor recreation, and enhancing resilience to climate change. Sentinel landscapes are generally anchored by one military installation or range but often contain other installations that can benefit from the program.

There are currently three established Sentinel Landscapes in the Chesapeake Bay Watershed. Maryland’s Middle Chesapeake Sentinel Landscape, established in 2015, is situated along the Bay and is anchored by Naval Air Station Patuxent River, one of the Navy’s premier aircraft testing locations. The Virginia Security Corridor, established in 2023, is comprised of two Sentinel Landscapes: the Potomac Sentinel Landscape anchored by Marine Corps Base Quantico, and the Tidewater Sentinel Landscape anchored by Joint Base Langley Eustis. The Virginia Security Corridor supports 10 military installations representing every branch of the U.S. Armed Forces.

The Commonwealth of Pennsylvania has proposed a new Sentinel Landscape in the Bay Watershed: the Kittatinny Ridge Sentinel Landscape (Figure 1). The Kittatinny Ridge spans 2.3 million acres from south central to eastern Pennsylvania and is vital for military readiness. The western half of the ridge is home to several military facilities, including Fort Indiantown Gap, Letterkenny Army Depot, Carlisle Barracks, and Naval Support Activity Mechanicsburg. The proposed Sentinel Landscape would be anchored by Fort Indiantown Gap, which is the nation’s busiest National Guard training center. During fiscal year 2023, Fort Indiantown Gap hosted 139,391 personnel and provided more than 850,000 person-days of training. The Kittatinny Ridge is also one of the most biodiverse regions in eastern North America and a crucial corridor for rare wildlife, songbird migration, clean water, and carbon sequestration.

DoD Chesapeake Bay Program Coordinators provided support to the Commonwealth of Pennsylvania during development and submission of their proposal for the designation of the Kittatinny Ridge Sentinel Landscape. The full proposal was submitted for consideration for designation on January 18, 2024.

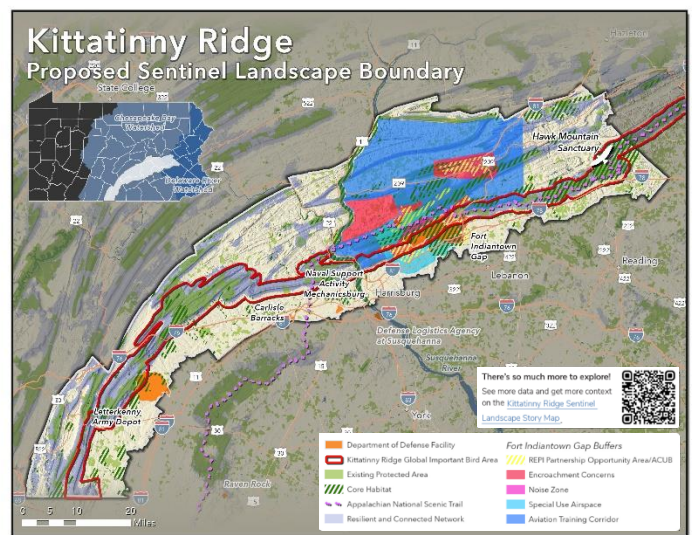


Figure 1. Proposed Kittatinny Ridge Sentinel Landscape Boundary. Provided by Commonwealth of Pennsylvania

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# Commander's Corner: New DoD Installation Commanding Officer Clean-up Challenge

By Kevin Du Bois, DoD CBP

The Department of Defense (DoD) is a federal leader in environmental stewardship. Its annual Service-specific and Secretary of Defense Environmental Awards recognize installations that conserve their natural and cultural resources, clean up pollutants, and protect human health, as these activities safeguard military personnel and civilians, protect the environment, and support effective personal and institutional performance. To reinvigorate installation spring clean-up events and to continue DoD's leadership role in environmental stewardship, Admiral McCall, designated lead for the DoD's Chesapeake Bay Program (CBP), is sponsoring a "DoD Installation Commanding Officer Clean-up Challenge."

Past clean-up volunteers could most likely confirm that the majority of trash picked up is made of plastic, such as bags, food and beverage containers, straws, etc. Plastic waste makes up an estimated 80% of marine pollution, with about 10 million metric tons of plastic waste entering the oceans each year that kill seabirds, fish, and marine mammals. Plastic breaks down into smaller pieces called "microplastics" that absorb a range of chemicals floating in the marine environment, including pesticides and toxic metals. These chemical-laden particles are ingested by fish and shellfish and then passed on to seafood-consuming humans. Microplastics may harm marine and human health, and the risks are still being researched.

Most of the plastic that ends up in marine and estuarine waters comes from land-based sources, e.g., littering and poor waste management practices, and is often conveyed by stormwater. Stewardship commitments are expressed as key strategies for meeting the goals of Executive Order 13508 for Chesapeake Bay Protection and Restoration, The 2014 Chesapeake Bay Watershed Agreement, and individual installation Municipal Separate Storm Sewer System water quality permits. Moreover, efforts to keep installations clean and safe support the health and quality of life for our service personnel, their families, DoD employees, contractors, and the visiting public.

The DoD CBP began tracking installation clean-up metrics in 2010 and the number of installations participating expanded in VA and into PA, and MD in 2017 and has more than doubled to 21 installations in recent years, 33% of Chesapeake Bay watershed installations. However, the number of annual volunteers has remained somewhat constant and in recent years the resulting amount of trash collected has fallen below average. In response, the first ever DoD Installation Commanding Officer Clean-up Challenge strives to incentivize clean-up initiatives and expand the number and watershed distribution of installations participating in these vital activities.

At the end of the challenge, Admiral McCall will recognize and award the Installation Commanding Officer and Clean-up Coordinator of the installation that collects the most debris (in pounds), as well as the installation that collects the most trash per clean-up participant. Challenge logistics include:

**WHERE**

Any installation in the Bay watershed, regardless of Service can participate. Clean-up efforts by Service personnel off base may also be reported.

**WHO**

This challenge is open to all installations' military personnel, civilians, employees, their families, and other volunteers.

**WHAT**

Installations must report:

- number of volunteers
- pounds of trash collected
- miles of shoreline or area cleaned

Clean-ups may occur on multiple dates between April 1 and June 30, 2024, and can occur as part of Earth Day, Arbor Day, Clean the Base Day, clean-ups associated with stormwater permit compliance, etc. Installations should report clean-up metrics for each event within the eligible time period; collected data will be combined to provide a final tally of each installation's work. Clean-up reports must be sent to Angela Jones, [angela.s.jones7@us.navy.mil](mailto:angela.s.jones7@us.navy.mil). In addition to being able to answer questions regarding the challenge, Ms. Jones is also a resource for information on clean-up reporting templates, trash weight estimators, installation coordinator guidance, etc.



# Impacts of Microplastics Pollution on Chesapeake Bay Watershed Agreement Goals and Outcomes

By Aditi Kumar, Brown and Caldwell

Microplastics, deemed an emerging issue of concern by the Toxic Contaminants Workgroup of the Chesapeake Bay Program Partnership (Partnership), are the subject of ongoing research to understand the ecological risk to Chesapeake Bay (Bay) wildlife. A report by Tetra Tech in 2022 studied the links between microplastics and the outcomes outlined in the 2014 Chesapeake Bay Watershed Agreement and found that microplastics affect Clean Water, Abundant Life, and Engaged Communities goals and outcomes. With the Department of Defense (DoD) managing over 400,000 acres across the region, understanding the impact of microplastics enables development of management strategies that meet MS4 permit requirements and EO 13508 natural resources and water quality goals, while minimizing potentially adverse impacts to the health and wellbeing of military personnel, their families, and the DoD civilian workforce.

## Microplastics' Growing Presence in the Bay Watershed and Recommendations from the Partnership's Plastic Pollution Action Team (PPAT)

In the Bay watershed, urban and suburban areas add to the plastic waste to local waterways through airborne deposits and delivery of stormwater runoff through storm drain systems. Larger plastic items continually break down into smaller pieces. The National Oceanic and Atmospheric Administration defines microplastics as pieces less than 5,000 microns in size. While the negative impacts of large plastic debris are well-documented, microplastics often go unnoticed but are thought to add to both marine organisms and ecosystem impacts. The Partnership's Scientific and Technical Advisory Committee's (STAC) 2016 Technical Review of Microbeads/Microplastics in the Bay first raised the alarm. Their 2019 report found that wastewater effluent is estimated to release nearly 4 million microparticles per facility per day as filtration methods are not completely effective at their removal. To put that potential impact into context, there are about 472 municipal and industrial wastewater treatment plants in the watershed, which makes wastewater effluent release a major concern. While microplastics themselves may directly harm Bay species, recent research reveals that toxic contaminants such as polycyclic aromatic hydrocarbons (PAH) and polychlorinated biphenyls (PCB) also attach to microplastic particles. When consumed by Bay species, these compounds can have physiological and neurological effects that potentially magnify up the food chain to humans.

The Partnership's PPAT aims to diminish the occurrence and effects of plastic pollution in the Bay and its surrounding watershed by recommending future research focused on trophic links, mortality rates, and other biological effects of microplastics on Bay wildlife. Other recommendations with takeaways for the DoD CBP include:

- **Ecological Risk Assessments (ERA):** Preliminary ERAs focused on microplastics in a sub-watershed of the Bay can help determine their effects on the Bay's ecosystem. DoD Installations within such sub-watersheds can develop focused mitigation measures to minimize plastic and microplastic pollution.
- **Guided Action:** Installation staff will be able to use the ERA results as a tool to brief senior leadership to better inform decisions and strategies.
- **Research Gap Identification:** Identifying and addressing gaps in research will provide a comprehensive understanding of microplastics pollution and help in devising effective strategies that installations could adopt.
- **Tracking Related Policies:** Installations can use state and federal policies related to microplastics to better align their strategies for effective source reduction.

### Knowledge Gaps identified by 2019 STAC Report:

- Grave physiological effects of microplastics on organisms, such as gene alteration.
- Microplastics variation based on seasonal changes and weather conditions for accurate assessments.
- Correlation between microplastic abundance and land use changes (population density, land cover, etc.) to identify pollution sources.

## Key Findings on the Impacts of Microplastic Pollution on Bay Watershed Agreement Themes and Goals

Microplastic pollution has the potential to adversely affect attainment of the 2014 Chesapeake Bay Watershed Agreement goals and outcomes, embodied in three themes: Abundant Life, Clean Water, and Engaged Communities.



## Abundant Life

**Sustainable Fisheries Goal:** Microplastic ingestion by aquatic organisms, such as blue crabs, forage fish, and oysters, can cause acute or sub-acute physiological effects that result in increased mortality and adversely affect their population growth. Microplastics accumulate on shorelines, wetlands, and plant leaves in submerged aquatic vegetation (SAV) beds that increase the rate of exposure to fish and shellfish. In addition to impacting aquatic organisms, microplastic toxicity can accumulate up the food chain. When humans consume fish, shellfish, crustaceans, etc., that have ingested microplastics, they are at high risk of organ damage caused by the accumulation of the tiny plastic fragments in the tissues. Further, microplastics can leach hazardous materials like pesticides, which increases human health risks in cancer, nerve disorders or other chronic conditions.

**Vital Habitats Goal:** Microplastic pollution negatively affects wetland plant growth (reduced weight, height, and chlorophyll b synthesis) that then reduces the food quality and availability for black ducks, a species that represents the health of tidal marshes across the watershed. Freshwater streams, SAV, and wetlands are all negatively impacted by microplastics toxicity and, when present, increase the potential for exposure and ingestion by wildlife that are supported by these important habitats.

## Clean Water

**Water Quality Goal:** Microplastics can disrupt the nitrogen cycle in estuarine sediments that can impact the entire estuary leading to ineffective monitoring of Total Maximum Daily Load-related actions in the Bay watershed.

**Toxic Contaminants Goal:** Chemical contaminants like PCBs and PAHs leach from microplastics into the surrounding environment, transferring pollutants in tissues of organisms and affecting the natural food chain (including non-marine species), ultimately leading to human exposure. Figure 1 shows various exposure pathways.

## Engaged Communities

There are no immediately identifiable microplastics impacts on public access goals; Installations can create awareness of this contaminant of emerging concern by engaging in stewardship activities that encourage pick up and proper disposal of larger plastic items that lead to microplastics creation.

## Current Installation Initiatives and Future Possibilities

Many DoD installations participate in activities that could reduce the flow of plastics and microplastics reaching the Bay. Clean the Base Day, Earth Day, and other beautification efforts are just a few examples of how volunteers remove harmful debris from Bay watershed rivers, streams, and beaches. In FY2023, nearly 22% of installations in the Bay watershed took part in clean-up activities that resulted in the removal of 11,970 pounds of trash. While we applaud these efforts, the DoD can do better. The Commanding Officer Clean Up Challenge (see article on page 2) encourages greater trash removal participation, especially for debris containing plastics. Installations can be more proactive by:

- Identifying common products used at installations that contribute to plastic pollution and developing strategies to find alternatives, minimize usage, and establish effective disposal to prevent them from reaching waterways.
- Using this article and references below to raise awareness of the interaction of microplastics on human and environmental health.
- Encouraging partnerships with defense communities to increase participation in joint cleanup efforts.
- Considering best management practices such as street sweeping and hydrodynamic separators that provide pretreatment and removal of trash and prevent the release of plastics and any attached toxic contaminants from entering waterways.

By understanding the threats posed by plastics and microplastics, both to humans and wildlife, installations can take action to protect their health and welfare. The Commander's Clean Up Challenge, in concert with other DoD watershed restoration and beautification activities, can be used as a springboard to engage a broader coalition of environmental stewards and again reinforce DoD's leadership in Chesapeake Bay protection and restoration while also fulfilling the goals and objectives of EO 13508 and regulatory MS4 permits.

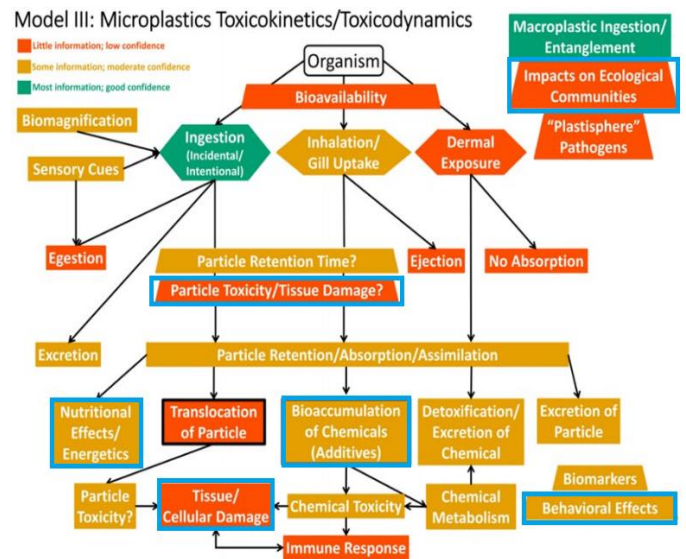


Figure 1: Conceptual model describing pathways and complexities regarding plastic exposure and potential outcome. Critical impacts are highlighted by blue outlines.

Paige Hobaugh, Bob Murphy. "Potential Linkages between Microplastics and 2014 Chesapeake Bay Watershed Agreement Outcomes". Tetra Tech, Inc. Published August 1, 2022.

Murphy, R., Robinson, M., Landry, B., Wardrop, D., Luckenbach, M., Grubert, K., Somers, K., Allen, G., Trieu, P., Yonkos, L. 2019. Microplastics in the Chesapeake Bay and its Watershed: State of the knowledge, data gaps and relationship to management goals. STAC Publication Number 19-006, Edgewater, MD. 51 pp

Bob Murphy, Jennifer Flippin, Ryan Woodland (UMCES), Paige Hobaugh. "Microplastic Monitoring & Science Strategy for the Chesapeake Bay." Tetra Tech, Inc. Published May 3, 2021.



# Success Story: Naval Air Station Patuxent River's Northern Diamondback Terrapin Nesting Program

By Rebecca J. Stump, Naval Air Station Patuxent River

Naval Air Station Patuxent River's (NAS Pax River) Northern Diamondback Terrapin Nesting Program just finished its 11<sup>th</sup> year, protecting a total of 120 nests that resulted in 1,193 baby terrapins. The primary goal of this program is to increase nesting success, and thereby increase the terrapin population in the Patuxent River. In addition, nest and hatchling data is recorded and available to any research group. This program is a joint effort between the base Natural Resources program and Air Operations (Air Ops). To protect nests and nest cages from rotary wash, Air Ops temporarily closes its primary helicopter landing zone while terrapin nesting is active. To assist the Navy in achieving its mission goals, Navy Natural Resource employees cleared two alternate landing zones for helicopter use during nesting season.

The terrapin nesting program had its origins in a request from a United States Fish and Wildlife Service (USFWS) representative at a NAS Pax River annual meeting. While discussing Integrated Natural Resources Management Plan implementation, USFWS noted the terrapin decline in the Patuxent River and throughout its range and asked the base to initiate nest surveys. A continued population decline could result in listing the species under the Endangered Species Act, which could severely limit the Navy's use of its helicopter landing zone and impact the mission at NAS Pax River. This effort increases nesting success, boosts the population, and helps prevent the terrapin from being listed as endangered.

The first year of the program (2013) yielded a total of 101 nests, only 32 of which avoided predation by fox and raccoon. Each year the program methodology has been improved to reduce the workload on volunteers, save time, increase successful hatching, and adapt to changing shoreline conditions. Currently, every intact nest discovered is protected by a predator exclusion device (PED), i.e., an overturned milk crate surrounded by wire mesh. This year's hatching success is directly related to the protection of 120 nests as compared to the 27 nests protected by PEDs in 2013. Inadvertently but beneficially, PEDS create a little more shade than would occur from any natural nesting spot a female terrapin might choose. This is important, as sex is determined by average nest temperature, with females developing at slightly warmer nest temperatures than males. Climate change is increasing the average nest temperature resulting in more females. By shading the nest, the chance of male development increases.

While the terrapin program as a whole is managed by NAS Pax River Natural Resources staff, the seasonal project is headed by NAS Pax River Student Conservation Association (SCA) interns and operates primarily on volunteer efforts. Because the Northern Diamondback Terrapin is not federally listed, NAS Pax River funding for SCA interns is tied to additional projects relating to listed/delisted species. SCA interns support field work on protected species, such as the Frosted Elfin and Monarch butterflies, Bald eagles, and listed bats. Volunteers take part in annual training in nest-finding tactics, hatchling release, and data collection. Each day from late May through the end of September, morning and evening shifts are staffed by volunteers, interns, and NAS Pax River employees. They walk a beautiful 1.25-mile trail along the coast, into forested dunes, and over two helicopter landing zones. Terrapin nests pepper the entire area, but one landing zone in particular accounts for 50% of the nest locations.

Volunteers search for tracks and other nesting evidence, dig down and retrieve the eggs, carefully weigh and measure the eggs, re-bury them, and install a PED over the nest, covering the sides of the PED with at least 4 inches of sand. Average nest incubation periods range between 61 and 70 days. After day 50, nests are checked twice a day for hatchlings. If any emerge, a volunteer will weigh and measure the quarter-sized reptile and release it into the edges of the surrounding marsh. In addition to foxes, raccoons, skunks, and birds, the nests can be damaged by grass shoots growing through the nest, curious humans, ants, and tunneling moles.

The landscape has changed greatly over the past 11 seasons. The invasive reed phragmites has encroached on pathways and nesting grounds, making it difficult to traverse the entire area. Shoreline erosion has taken more than 30 feet of width of prime nesting beach



*A terrapin hatchling*

PHOTO BY NAS PAX RIVER



*A group of terrapins along the shores of NAS Pax River*

PHOTO BY NAS PAX RIVER



habitat. A rising water table has reduced viable nest space, and extreme storms have inundated low-lying nests and caused debris to block terrapin paths to nesting grounds. A shoreline protection project planned for the near future is expected to stabilize the beaches, stop erosion, and restore terrapin access to nesting areas.

Terrapins are long-lived, brackish turtles that are slow to reach sexual maturity, which happens between 7 and 11 years of age. Even before they come of reproductive age, adult terrapins face many dangers: crab traps without terrapin excluder devices, ghost traps, boat props, road-crossing casualties, pollution, and illegal pet trade and harvesting top the list.

Through compatible use of both valuable natural resource lands and mission-critical training areas, NAS Pax River staff have enhanced hatch rates and successfully released 7,753 baby terrapins into the wilds of the Chesapeake Bay. The success of this program is the result of the hard work and dedication of our installation, federal agency, student interns, and citizen partners. Through this collective work, NAS Pax River exemplifies its leadership in achieving the goals of Executive Order 13508 for Chesapeake Bay restoration and protection and Sikes Act stewardship, and promotes climate-informed decision making consistent with the goals of the Navy's Climate Action 2030 plan.

## Success Story: Naval Station Norfolk EV Staff and DoD CBP Participate in Fleet Fest STEM Event

*By Angela Jones, DoD CBP*

The Department of Defense (DoD) Chesapeake Bay Program (CBP) and Naval Station Norfolk (NSN) Environmental (EV) staff, within the Naval Facilities Engineering Systems Command Mid-Atlantic Public Works Department, participated in the recent NSN Fleet Fest Science, Technology, Engineering, and Mathematics (STEM) event. The volunteer cadre of staff participants provided environmental literature, activities, and a trivia game to the more than 3,000 elementary students, 500 teachers, administrators, and chaperones from Norfolk and Portsmouth, Virginia Public Schools, who attended the event.

Students were eager to test their knowledge during a trivia-style game tailored to their standards of learning, which covered earth resources, watersheds, the Chesapeake Bay, recycling, and how to be good stewards of their environment. "It was great to see how they worked as a team to answer some of the toughest questions," DoD CBP Coordinator Kevin Du Bois said.



IMAGE PROVIDED BY ANGELA JONES, DOD CBP

*Mark Sauer shares environmental worksheets and activities with students.*

To further their environmental knowledge journey after the event, students and their teachers were given environmental literature and fun activities to engage inquisitive minds. "It's always a pleasure interacting with these young learners," NSN Water Program Manager Mark Sauer said. "I think we're as excited about the Fleet Fest STEM event as they are. If we can inspire a couple of these students to pursue a STEM career, who knows, maybe one day they'll be doing our jobs."

Meaningful engagements with students, teachers, and chaperones help fulfill the stewardship goals exemplified in Executive Order 13508, which calls for the federal government to lead the effort in protecting and restoring the Chesapeake Bay watershed while inspiring students to learn more about STEM. "The students showed interest in the environment and asked questions about the work we do regarding the environment," NSN Installation Environmental Program Director Jennifer Tabor said. "We hope students that

attended are inspired to follow their aspirations and work in the environmental field." For more information about this event, please contact Angela Jones at [angela.s.jones7.civ@us.navy.mil](mailto:angela.s.jones7.civ@us.navy.mil).

IMAGE PROVIDED BY JEFFREY DOEPP, MIDLANT PAO



*NSN EV and DoD CBP staff engage with students during NSN Fleet Fest STEM event.*



# Success Story: Naval Station Norfolk’s Exemplary Environmental Stewardship Initiatives

By Aubree Johnson, NAVFAC MIDLANT

Naval Station Norfolk (NSN), renowned for its environmental commitment, received the “Sustained Distinguished Performance” award from the Elizabeth River Project during the Annual River Star Business luncheon on January 18, 2024. This accolade celebrates organizations that demonstrate exceptional environmental stewardship in the Elizabeth River watershed. Recognizing the complexity of NSN’s environmental responsibilities, leadership expanded NSN’s Environmental Team by adding two deputies and a media manager, which bolstered the team’s resources to 20 professional subject matter experts. This strategic move enabled NSN to enhance practices and undertake critical projects. Notably, NSN is constructing Pier 3 to safeguard the Elizabeth River and minimize environmental impacts. Contractors working on the pier receive mandatory environmental training to comply with air quality, stormwater, and spill management regulations. Key practices include daily inspections, proper waste disposal, secure storage of equipment, and minimal-impact assessments during construction. Additionally, Clean the Base Day, NSN’s flagship public event, involved 60+ volunteers collecting 1,200 pounds of trash across 20 acres, including parking lots, streets, and waterfront areas. Common items retrieved included plastic bottles, straws, wrappers, bottle caps, wood, and cigarette butts. NSN’s Base Action Team further contributes by organizing weekly clean-up projects around the base.



PHOTO BY KEVIN DU BOIS, DoD CBP

*Volunteers at NSN collecting trash and debris, keeping it from entering Willoughby Bay and protecting water quality and marine resources.*

## Chesapeake Bay Action Team (CBAT) Updates

By Aditi Kumar, Brown and Caldwell

Members of the CBAT convened for its quarterly meeting on 25 January 2024, and reviewed ongoing Chesapeake-Bay-related service and installation projects and activities. A presentation provided participants with information on Coagulant Enhanced Stormwater Treatment (CET), a new best management practice (BMP) approved by the CBP.

### Presentation: CET for use in the Chesapeake Bay Watershed

Mr. Jeff Herr, Brown and Caldwell, showcased the efficacy of CET, which significantly reduces total nitrogen (TN), total phosphorus (TP), and total suspended solids (TSS) in stormwater ponds. These reductions aid in achieving total maximum daily load (TMDL) goals within the watershed. CET involves the formation of two precipitates: aluminum hydroxide and aluminum phosphate. The former captures particulate matter (including sediment, nitrogen, and phosphorus), while the latter removes dissolved phosphorus. CET involves retrofitting existing BMP ponds or constructing new ones that result in cost-effective, long-term benefits with minimal operational impact. Notably, CET can remove dissolved phosphorus, a capability lacking in most stormwater BMPs. Unlike patented BMPs, CET is a non-proprietary process. Its advantages include higher pollutant removal rates, efficient land use, and the ability to address large watershed areas. Additionally, CET boasts the lowest lifecycle cost per unit of TP, TN, and pathogen removal compared to traditional stormwater practices. Brown and Caldwell collaborated with the Chesapeake Bay Urban Stormwater Workgroup to produce a comprehensive report that covers design criteria, literature review, and necessary credit. An independent review panel evaluated the report, which led to CET’s endorsement by the urban stormwater workgroup, approval by the Watershed Technical Group, and acceptance by the Water Quality Goal Implementation Team. Coordination with state Departments of Environmental Quality remains pending. The full CBAT presentation is available on the secure side of the DoD CBP DENIX website. An installation factsheet on CET is under development.

### DoD Chesapeake Bay Program Updates

- Information on the March 14 Virginia Military Advisory Council meeting highlighting the benefits of Sentinel Landscapes was announced. The meeting took place on 14 March 2024 at Quantico.
- The Fall 2023 and Winter 2023 Journals are available on DENIX: <https://denix.osd.mil/chesapeake/dod-cbp-quarterly-journals/>
- The fact sheet “Green Infrastructure and the MS4 Permit” was released in January and is available on the secure side of the DoD CBP DENIX website.



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## ✓ Check it Out

**Pursuing Complementary Resilience Funding Opportunities.** REPI webinar, March 20, 2024. Learn about various REPI funding opportunities and best practices on pursuing and writing successful funding proposals. The webinar link is: <https://bah16f18.adobeconnect.com/pavc67nzw33t/>

**Why Virginia Should Ban Toxic Pavement Sealants.** Chesapeake Bay Foundation Webinar was held October 27, 2023, and it covered how pavement sealants are toxic to humans, birds, amphibians, fish, mammals, and vegetation. It emphasizes that, like other states, Virginia should ban toxic pavement sealants that contain polycyclic aromatic hydrocarbons in amounts that are thousand times more than in asphalt-based sealants.

The webinar link is: <https://www.cbf.org/events/webinars/why-virginia-should-ban-toxic-pavement-sealants.html>

**Analytics and Artificial Intelligence to Improve Water Conservation Measures for DoD Installations.** This SERDP-ESTCP webinar held March 7, 2024, demonstrated an artificial intelligence (AI) leak detection technology for drinking water distribution systems. The technology provides continuous leak monitoring and advanced analytical approaches using water data and models to better predict water use at mission-critical and water-intense facilities for a United States Marine Corps installation. The webinar link is: <https://www.youtube.com/watch?v=hIndpO70KQ8>

**Comprehensive Initiatives in Climate Management Planning.** This SERDP-ESTCP webinar held March 21, 2024, focused on DoD-funded research efforts to better understand how disturbance and climate variability impact DoD lands. Investigators covered newly developed methods for anticipating the impacts of climate change at DoD facilities internationally as well as preparing DoD facilities for extreme weather events. The link to presentation slides is: <https://serdp-estcp-storage.s3.us-gov-west-1.amazonaws.com/s3fs-public/2024-03/SERDP%20ESTCP%20Webinar%20194.pdf?VersionId=jwj3MWysS eheQ5gCCxLNzaVLQIXnJaoM>

**CBAT Quarterly Conference Call and Meeting.** This meeting will be held on April 25, 2024, from 10:00 a.m. to Noon EDT. Contact Kevin Du Bois or Ashley Kelly to receive a meeting invitation with a web link.

This newsletter is produced by Brown and Caldwell under NAVFAC Atlantic A-E Contract N62470-19-D-4001 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>.

