



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

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DoD Water Quality Programmatic Two-Year Milestones

By Department of Defense (DoD) Chesapeake Bay Program (CBP) Coordinators

In 2008, the District of Columbia and the six states in the Chesapeake Bay watershed were directed to develop two-year milestones to reduce nitrogen, phosphorus, and sediment contributions to the Chesapeake Bay. Executive Order (EO) 13508, which was signed in 2009, directed that federal agencies “define environmental goals for the Chesapeake Bay and describe milestones for making progress toward attainment of these goals.” The EO13508 strategy clarified that federal agencies’ two-year milestones will specify federal efforts to support the jurisdictions in meeting their water quality milestones. The jurisdictions and federal agencies submitted the first milestones in 2012, and at the end of every two-year period, the U.S. Environmental Protection Agency (EPA) assesses the jurisdictions’ progress toward these interim goals. The milestones represent check-in points toward having necessary pollution reduction measures in place by 2025 and meeting outcomes for the restoration of the Bay and its tidal rivers.

The complete list of federal and DoD 2020-2021 Programmatic Water Quality Milestones can be found on the DoD CBP website at <https://www.denix.osd.mil/chesapeake/chesapeake-bay-watershed-agreement-executive-order-13508/index.html>. Many of the DoD milestones will be familiar—reporting best management practice (BMP) implementation through the datacall, developing BMP crediting reports, etc. Others are new and represent innovative ways the DoD is seeking to meet its Chesapeake Bay Watershed Agreement and EO13508 commitments. Two new milestones that are included for 2020-2021 are highlighted in this article.

Integrated Natural Resource Management Plan (INRMP)

Projects and Water Quality Co-benefits: As the federal agency with the most developed land in the watershed, the DoD contributes significantly to the protection and restoration of the Bay. As the DoD strives toward pollutant reductions, it also recognizes the water quality benefits provided by natural resources projects. Likewise, it is important for INRMPs, or their Service equivalent, to identify land and wildlife management practices that overlap with the DoD CBP’s objectives. The DoD CBP is offering to assist installations in accounting for these program overlaps and co-benefits in their INRMP documents. Please contact the DoD CBP coordinators, Kevin Du Bois and Jessica Rodriguez, if you have interest in collaborating on this initiative.

DoD Agriculture Outlease “Opportunity Assessment” The DoD owns and leases 5,657 acres of agricultural land at Naval Air Station (NAS) Patuxent River, Naval Support Activity (NSA) Annapolis, NAS Oceana, Naval Weapons Station Yorktown-New Kent, Letterkenny Army Depot, and Fort A.P. Hill. DoD does not receive credit for agricultural practices implemented to reduce pollutants. However, the DoD CBP will evaluate the DoD Agricultural Outlease program for opportunities to support jurisdictions’ Phase III Watershed Implementation Plans (WIPs) and the 2025 WIP Outcome from the Chesapeake Bay Watershed Agreement. The DoD CBP will contact the relevant installations to gather information to support this analysis.



PHOTO BY NAS OCEANA AG PROGRAM.

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Commander's Corner: DoD CBP Communication and Outreach

By the DoD CBP Editorial Team

The key drivers of the DoD CBP are the Chesapeake Bay Watershed Agreement and EO13508. They establish long-term goals for the protection and restoration of the Chesapeake Bay. The DoD CBP's mission is to:

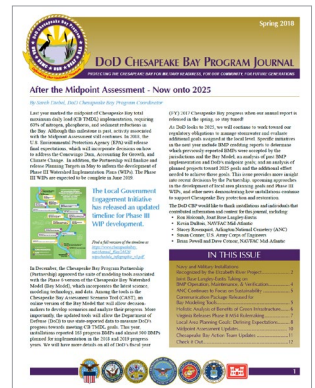
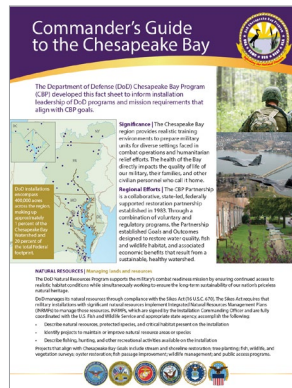
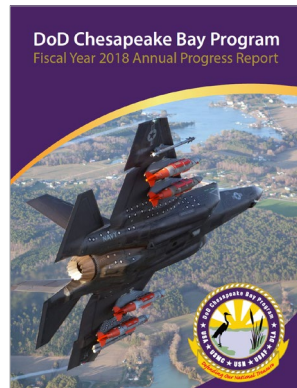
Integrate restoration, pollution prevention, and stewardship initiatives for the Chesapeake Bay into DoD's daily mission of providing the military forces needed to deter war and protect the security of the United States.

Engage all levels of DoD military, civilians, and their families to be environmental stewards of the watershed where they live.

Partner with federal, state, and local governments, organizations, and citizen groups to maximize resources and strengthen Bay restoration and protection efforts.



Communications, data collection, reporting, and outreach are key elements of the DoD CBP's role, which affects all areas of the DoD CBP mission. To fulfill these responsibilities, the DoD CBP and Regional Environmental Coordination (REC) offices develop and release materials and resources designed to support installations' environmental and outreach programs. The table below includes a description of these resources and their audience/recipients.



Publications by the DoD CBP including the Annual Progress Report, fact sheets, and the quarterly Journal provide communication opportunities.

Current Communications

Communication Tool	Frequency	Description	Target Audience	Delivery Method
Annual Progress Reports	Annually (Spring)	Provide program accomplishments and metrics and highlight installation success stories	Service Leads, Commanders, Installation Environmental Leadership, Public, Public Affairs Officers	Posted on DoD CBP website: denix.osd.mil/chesapeake/index.html
Chesapeake Bay Action Team (CBAT) Meetings	Quarterly (October, January, April, July)	Provide a forum for information sharing from the Chesapeake Bay Program Partnership (Partnership), the DoD CBP, and members	Service Leads, Installation Environmental Leadership, Environmental Program Managers, Installation Staff	Posted on DoD CBP website*
Fact Sheets	Quarterly	Highlight key installation challenges and solutions relevant to environmental restoration and regulatory compliance activities	Environmental Program Managers, Installation Environmental Leadership	Posted on DoD CBP website*
BMP Crediting Reports	Annually (Summer)	Provide overviews of DoD BMP credit status by state, as well as detailed results for individual BMPs	Installation Environmental Leadership, Environmental Program Managers, External Stakeholders	Emailed to Installation Environmental staff and state partners
Journals	Quarterly	Highlight success stories, technical topics, and articles of interest to environmental staff and Commanders	Commanders, Installation Environmental Leadership, Environmental Program Managers	Posted on DoD CBP website

Communication Tool	Frequency	Description	Target Audience	Delivery Method
DoD CBP Website	Periodically	Serve as a repository for DoD CBP publications and source for information about the program	Commanders, Installation Environmental Leadership, Environmental Program Managers, the Public	Hosted by DENIX: denix.osd.mil/chesapeake/index.html
EPA/State/DoD Partnership Meetings (VA, MD and PA)	Biannually	Provide a forum for EPA, state, and DoD representatives to discuss ongoing regulatory initiatives and aligned objectives	External Stakeholders (from EPA and the State), Program Managers, Installation Environmental Leadership, Installation Staff	Invitations are mailed to Installation Environmental staff
Outreach Events (Clean the Bay Day, Earth Day, STEM, Conferences, etc.)	As scheduled	Educate military personnel, the public and regulatory community about DoD environmental programs through public outreach events organized by installation staff	Commanders, Installation Staff and Their Families, the Public	Notices emailed to CBAT members in advance, attended in-person
Brochures	Periodically	Provide an overview of DoD CBP program goals and accomplishments	Commanders, Installation Environmental Leadership, the Public	Posted on DoD CBP website*
REC Newsletters	Monthly	Provide an overview through the REC Review, which publishes environmental and energy-related updates. Gives early notice of legislative and regulatory activities relevant to DoD interests in Federal Regions 1 & 3 and Navy interests in Federal Regions 2 and 5, as well as North Carolina and Kentucky.	DoD Leaders, Service Leads, Legal Staff, Commanders, Program Managers, Installation Staff	Posted on REC website: denix.osd.mil/rec/index.html

* An asterisk denotes information is found on the common access card (CAC)-enabled DENIX webpages. You must log in to gain access to these materials.

New and Upcoming Communication and Outreach Tools

The DoD CBP is always seeking new ways to effectively communicate with its partners. Examples of recently developed or upcoming communication and outreach efforts include:

- The **Pilot Installation Status Reports** will be tailored to showcase successes and recommended actions for individual installations. The pilot reports are in development with five installations and will be complete by the end of 2020.
- The **Chesapeake Bay Commanders' Conference**, which was held at Marine Corps Base Quantico in August 2019. The first conference was attended by DoD leadership; state, regional, and federal representatives; installation staff; and 18 Commanding Officers. The next conference is scheduled to be held in 2022.
- **Materials tailored for Commanding Officers**, including the recurring Commanders' Corner feature in the quarterly DoD CBP Journal and the "DoD CBP for Commanding Officers" section of the CAC-enabled portion of the DoD CBP website. Both are a result of feedback from the Commanders' Conference and the CBAT for dedicated information about important issues for Installation Commanders.

The DoD CBP's effectiveness in communication and outreach across the Services relies on engagement by installation personnel in internal

DoD groups (like the CBAT) and external organizations (like the state partnership meetings and Partnership workgroups). The DoD CBP welcomes installation success stories, lessons learned, high-quality photographs of projects and events, and suggestions for improvements or ideas for new resources.

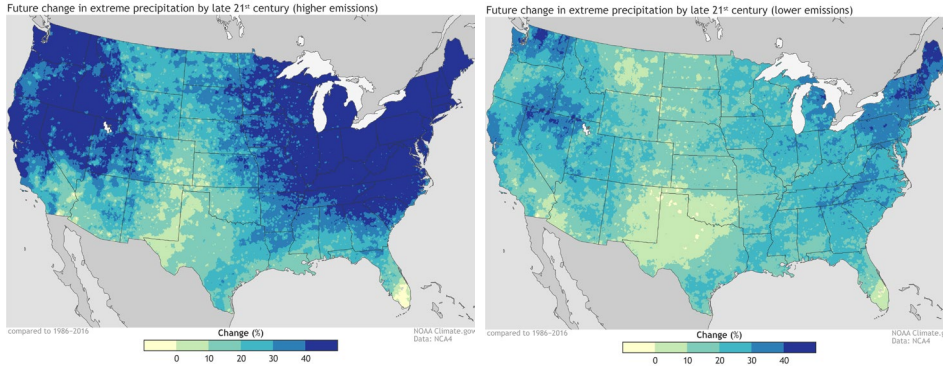
Commanders are encouraged to contact their installation environmental leadership or CBAT representative to stay informed of DoD CBP updates and to provide feedback on how the DoD CBP can better support them and their mission.



Storm Clouds Ahead: Considerations for a Changing Climate

By Lauren Strader, Brown and Caldwell

As a changing climate leads to warmer temperatures across the United States, many areas will also experience changes in the frequency and volume of precipitation. Extreme rainfall events will become more common as higher temperatures lead to increased evaporation and a more saturated atmosphere. This creates conditions for strong localized downpours.



Projected increases in extreme precipitation by the late 21st century based on the level of future carbon emissions. Source: the National Oceanic and Atmospheric Administration (NOAA)

In the Chesapeake Bay watershed, rainfall increased by 27 to 55% between 1958 and 2016. Another 20 to 40% increase is predicted by the late 21st century (2070-2099), depending on the level of efforts to reduce carbon emissions¹. These changes have consequences for the Chesapeake Bay and the installations within the region, including impacts to water quality, ecosystem health, and the built environment. This article highlights potential consequences of this trend.



Water Quality. More rainfall will increase the amount of freshwater flowing into the Bay. As a result, storm events will increase the amount of harmful pollutants from stormwater runoff. This will negatively impact water quality trends in the Chesapeake Bay and is expected to increase the level of effort needed to achieve the Chesapeake Bay Total Maximum Daily Load (TMDL). The Partnership is evaluating how this change will impact water quality goals for its partners, including DoD.



Stormwater BMPs. BMPs are designed based on historical rainfall trends. With increases in precipitation amount and intensity, the historical data used to establish the design criteria are out of date. As a result, existing BMPs may no longer provide the same level of flood protection or pollutant removal they once did. BMP designers should consider if it is beneficial to oversize BMPs to account for future rainfall events and maintain credit for pollution reduction. BMPs that can provide protection from climate change impacts include stream restoration, urban tree buffers and canopy, infiltration practices, wetland restoration, and shoreline erosion management.



Natural Systems. As these rainfall trends continue, stormwater infrastructure designed to transport, store, or infiltrate runoff may become less effective during intense rain events, leading to cascading negative consequences for natural systems. For example, increased stormwater runoff may lead to streambed scouring which can affect aquatic populations.



Infrastructure. When stormwater systems are overwhelmed, it can lead to flooding of wastewater treatment plants, culverts, roads, combined sewer systems, and other infrastructure. This can cause expensive damage and interruption of key operations and mission activities at DoD facilities. The sustainment of mission operations means that stormwater managers and installation leadership should consider future rainfall conditions in their design process.

The effects of intense rain events are often highly localized, and within the Chesapeake Bay region, the predicted change in extreme precipitation in the 21st century will vary by local area. These local trends may affect the severity of the consequences described above. Visit NOAA's interactive Climate Explorer Tool (<https://noaa.maps.arcgis.com/apps/MapJournal/index.html?appid=8b910d9c7b9744ea94e07d82f5420782>) for more information and to explore projected increases in extreme precipitation for your area. Refer to the Report on Effects of a Changing Climate to the DoD (<https://media.defense.gov/2019/Jan/29/2002084200/-1/-1/1/CLIMATE-CHANGE-REPORT-2019.PDF>) for DoD-specific guidance.

Source:¹ Scott, Michon. 2019. Prepare for more downpours: Heavy rain has increased across most of the United States and is likely to increase further. <https://www.climate.gov/news-features/featured-images/prepare-more-downpours-heavy-rain-has-increased-across-most-united-0>



Protecting Shorelines with Oyster Castles

By Lauren Strader, Brown and Caldwell



PHOTO BY KEVIN DU BOIS, DOD CBP.

Oysters are added to the installed castles. The oysters will provide water quality and climate resilience along the shoreline.

The project provides many benefits for those involved. The site is located near an oyster reef established by the Chesapeake Bay Foundation, extending the oyster reef benefits and furthering the Chesapeake Bay Watershed Agreement goal to support oyster restoration. One adult oyster can filter up to 50 gallons of water per day, so the mature oysters that will eventually populate the 500 oyster castles may provide significant water cleaning benefits.

The site is also along a section of eroded shoreline. The oyster castles will help prevent future erosion, which will in turn protect the surrounding wetlands. Wetlands provide important ecological benefits, including habitat for wildlife and local resilience to severe storm events. Because wetlands serve as a buffer between the river and the installation's operational areas, infrastructure, and facilities, this project also protects military readiness. In further recognition of the project's co-benefits, the work was funded through a grant from NEEF as a part of National Public Lands Day, which brings together volunteers to restore and improve public lands.

Through this project, NSA Hampton Roads and the project partners contributed to the protection and restoration of the Lafayette River, which is a tributary of the Elizabeth River and the Chesapeake Bay. Therefore, the benefits provided by this project ultimately benefit the DoD's commitments to Chesapeake Bay restoration through EO13508. The project also provides a great example of how one project can achieve multiple benefits for the installation, the local environment, and the larger ecosystem.

Please visit [militarynews.com](https://www.militarynews.com/norfolk-navy-flagship/naval-support-activity-hampton-roads-installs-oyster-castles-to-help-protect-shoreline/article_03ec4de6-cb56-11ea-8e6e-43f6e9ae5d16.html) for more information about this volunteer effort (https://www.militarynews.com/norfolk-navy-flagship/naval-support-activity-hampton-roads-installs-oyster-castles-to-help-protect-shoreline/article_03ec4de6-cb56-11ea-8e6e-43f6e9ae5d16.html).

This summer, a team of volunteers from NSA Hampton Roads, the Elizabeth River Project (ERP), and the DoD CBP gathered at the shoreline of the Lafayette River Complex in Norfolk, Virginia. Over two days, the volunteers installed more than 500 oyster castles along 90 feet of the Lafayette River to promote shoreline and oyster restoration. Oyster castles are interlocking blocks of concrete and oyster shell intended to mimic oyster reefs. When placed along the shore and populated with live oysters, their surface area provides a media for oyster attachment and a break for wave action, preventing shoreline erosion.

The two-day installation was the result of a partnership between the installation, the National Environmental Education Foundation (NEEF), and the ERP. NEEF administered the funds for the project, and the ERP provided key assistance through design and construction. NSA Hampton Roads and the ERP also coordinated with Norfolk Wetlands Board, the U.S. Army Corps of Engineers, Virginia Department of Environmental Quality, and the Virginia Marine Resource Commission to secure the necessary approvals prior to construction. The oyster castles were supplied by Allied Concrete and the oysters were donated by other project partners.



Restoration continues, even during a pandemic. Volunteers brought their masks to install oyster castles at NSA Hampton Roads' Lafayette River Annex.

PHOTO BY KEVIN DU BOIS, DOD CBP.



Restoring a Riparian Buffer at Pentagon Lagoon

By Brian King, DoD Washington Headquarters Services (WHS), Jeremy Claiborne, Applied Environmental Inc., and Dillon Connor, Wetlands Studies and Solutions Inc.

In 2018, the DoD WHS finalized plans to restore the existing riparian buffer along the Boundary Channel and Pentagon Lagoon, an offshoot of the Potomac River that borders the Pentagon. Spanning approximately 9.5 acres, the project area consisted of mowed turf and a small forested area known for its poor biodiversity, low habitat value, and invasive species. The goals of the Riparian Buffer Restoration project were to remove invasive vegetation, establish native riparian vegetation, and improve biodiversity while helping to meet the Pentagon's municipal separate storm sewer system permit requirements. The restoration project was split into three phases: invasive vegetation removal, seeding and planting, and a two-year maintenance period.

The first phase of the project began in the summer of 2018 with an extensive invasive vegetation removal effort that targeted dense stands of Golden Rain Tree (*Koelreuteria paniculata*), Tree of Heaven (*Ailanthus altissima*), and Tatarian Honeysuckle (*Lonicera tatarica*). During this phase, many of the larger trees removed were repurposed as habitat logs and dispersed throughout the buffer. In addition, several dead trees, located away from sidewalks and parking lots, were left standing to serve as bird perches and habitat features.

The buffer seeding and planting phase began in the fall of 2018. The restoration design divided the site into three planting zones parallel to the shoreline, each with a unique planting palette that would provide environmental services previously absent from the buffer. A riparian forest zone with 24 species of native trees and shrubs was created along the shoreline. A transition zone featuring nine species of trees and shrubs was developed to mimic the transitional area of a natural successional forest. Finally, farthest from the shoreline, an herbaceous



The original riparian forest buffer featured many invasive species. This photo shows the forest buffer immediately after invasive species removal.



The restored riparian forest buffer features 24 species of native trees and shrubs. In total, over 6,000 trees and shrubs were planted in the riparian forest zone, transition zone, and herbaceous zone.

PHOTO BY DILLON CONNOR, WETLANDS STUDIES AND SOLUTIONS, INC.

PHOTO BY DILLON CONNOR, WETLANDS STUDIES AND SOLUTIONS, INC.

zone with eight native grass and forb species was planted to support beneficial pollinators. In total, over 6,000 trees and shrubs were planted. Additionally, the entire project area was seeded with a native herbaceous seed mix comprised of 22 species of grasses, sedges, rushes, and forbs. The project’s two-year maintenance period—the third and final phase of the project—began on 1 August 2019 and will last until 31 July 2021.



RENDERING PROVIDED BY BRIAN KING, DOD WHS

This rendering shows the zones of the restored riparian forest buffer.

PHOTO BY DILLON CONNOR, WETLANDS STUDIES AND SOLUTIONS, INC.



At the end of its second growing season, the buffer now attracts pollinators, like the monarch butterflies shown here.

This fall marks the end of the second growing season since the buffer was restored. As a testament to the project’s success, the buffer now hosts countless beneficial insects, such as the endangered monarch butterfly, and dozens of bird and mammal species attracted to the native vegetation’s food and shelter. The riparian buffer achieves approximately 23%, 7%, and 3% of the Pentagon Chesapeake Bay TMDL pollutant removal reductions for total nitrogen (TN), total phosphorus (TP), and total suspended solids (TSS), respectively. Walking along the Boundary Channel, this lush, native vegetation teems with life and presents a dramatic transformation from the mowed turf lawn that existed just two years ago.

Did You Know? The Benefits of Riparian Forest Buffers

The urban riparian forest buffer is a multi-benefit BMP that can create wildlife and pollinator habitat and filter pollutants from stormwater runoff. The recommended buffer width is 100 feet, but a minimum width of 35 feet will receive credit from the Partnership.

The Riparian Forest Buffer BMP is credited for the change in land use (from the original developed land use (e.g. managed turf) to the forested buffer) and for the pollution treatment of upstream land. The Partnership estimates that a riparian forest buffer removes 25% of TN, 50% of TP, and 50% of TSS from runoff received from upstream areas. In total, urban forest buffers treat more than 30 acres of land at DoD installations across the watershed.



Toxic Contaminants in the Chesapeake Bay

By Lauren Strader, Brown and Caldwell

Nutrient and sediment pollution is a prominent focus in the Chesapeake Bay watershed as a result of the regional TMDL for TN, TP, and TSS. However, waterways in the region face a range of impairments, including toxic contaminants resulting from a variety of sources and activities that may be found at DoD installations. One goal of the 2014 Chesapeake Bay Watershed Agreement is to ensure that the Chesapeake Bay and its tidal rivers and tributaries are free from the effects of toxic contaminants through research, policy, and prevention. The presence of toxic contaminants in the Bay, its tidal rivers, and tributaries threatens both aquatic life and human health and they are highly prevalent—over 80% of the Bay’s tidal waterways have a full or partial impairment due to toxic contaminants.

To address this risk, the 2014 Chesapeake Bay Watershed Agreement identified an outcome to “continually improve practices and controls that reduce and prevent the effects of toxic contaminants below levels that harm aquatic systems and humans.” Within the Partnership, the Toxic Contaminants Workgroup was charged to develop a management strategy to achieve the Chesapeake Bay Watershed Agreement toxic contaminants goal and outcome:

- **Toxic Contaminants Goal**
 - Ensure that the Bay and its rivers are free of effects of toxic contaminants on living resources and human health
- **Policy and Prevention Outcome**
 - Improve practices and controls that reduce and prevent the effects of toxic contaminants below levels that harm aquatic systems and humans
 - Build on existing programs to reduce the amount and effects of Polychlorinated Biphenyls (PCBs) in the Bay and watershed
 - Use research findings to evaluate the implementation of additional policies, programs, and practices for other contaminants that need to be further reduced or eliminated

Due to the number of potential sources and pathways for toxic contaminants, a wide range of management responses is necessary. The Partnership proposes to achieve these goals through regulatory and non-regulatory approaches (including education and awareness campaigns, voluntary programs, and a PCB Consortium) to reduce the amount of toxic contaminants entering the Bay with a focus on PCBs. This article will provide a summary of the Workgroup’s accomplishments to date, including highlighting co-benefits provided by water quality BMPs and efforts to reduce PCB compounds specifically.

Toxic Contaminants and the Chesapeake Bay TMDL

All DoD installations in the watershed are impacted by the Bay TMDL. Because many stormwater BMPs have been and will be implemented to remove nutrient and sediment pollution, the Toxic Contaminant Workgroup is working across the Partnership to identify secondary benefits for water quality BMPs related to removal of toxic contaminants. The Water Quality Goal Implementation Team (WQGIT) has released a fact sheet with initial ratings of BMP types that are effective for toxic contaminant management, including urban pollutants like PCBs and mercury. This resource, which is linked at the end of the article, can be particularly valuable for DoD installations with known sources of PCBs or those who are located near a waterway impaired for PCBs.



PHOTO BY ARLINGTON, VA.

The Toxic Contaminants Workgroup rated forest buffers, runoff reduction practices, and wet ponds as the best BMPs for toxic contaminant management.



Polychlorinated Biphenyls

PCBs are one notable type of toxic contaminant known to have adverse ecological impacts and suspected of causing cancer in humans. PCBs accumulate in the tissue of fish and shellfish intended for human consumption and often lead to fish consumption advisories. Though toxic contaminants include multiple groups of chemicals, including dioxins, petroleum hydrocarbons, pesticides, pharmaceuticals, and metals, the danger posed by the presence of PCBs in consumable fish and shellfish and their widespread extent is unique. Furthermore, there are a variety of ways for PCBs to enter the environment, including legacy deposits (from past activities) and ongoing releases from wastewater discharges, groundwater transport, atmospheric deposition, and contaminated sites. For these



PHOTO BY WILL PARSON, CBP.

PCBs accumulate in the tissue of fish, including fish used for human consumption. Therefore, this class of chemicals poses both an ecological and human health risk.

reasons, the Partnership focused its early strategies on reducing the amount of PCBs entering the Bay and its tributaries. Some of these efforts include controlling stormwater and wastewater sources of PCBs through regulatory mechanisms like TMDLs.

PCBs in Stormwater. Urban stormwater runoff is a significant source of PCB pollutants in surface waters. This occurs when stormwater becomes contaminated due to:

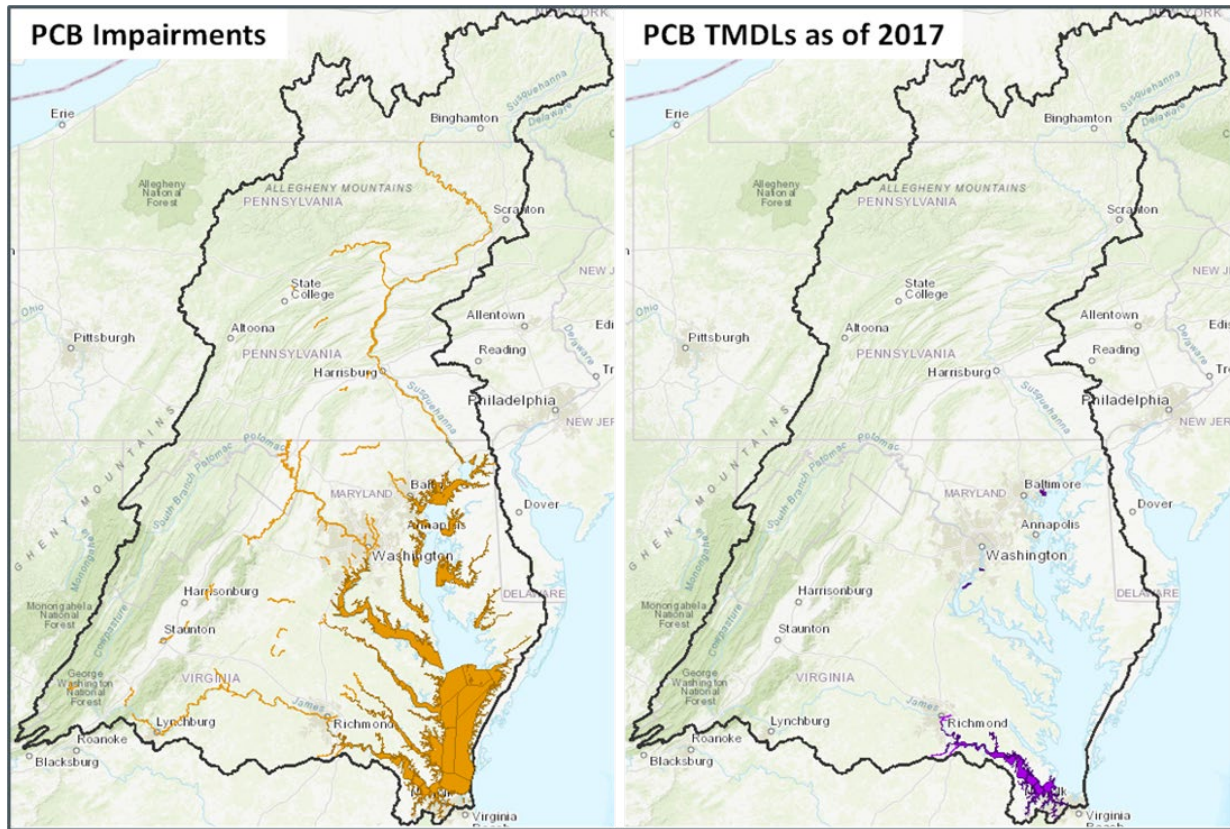
- demolition/remodeling of buildings with materials containing PCBs and runoff from contaminated surfaces
- erosion and mobilization of contaminated soils
- dry and wet atmospheric deposition

According to EPA, PCBs are commonly found in building materials of structures constructed between 1950 and 1979. PCBs were also once used in a range of commercial products before 1979, including fluorescent light ballasts, electrical equipment, and oil products. Installations may have sources of PCBs on their site from current or demolished buildings or contamination from past industrial activities. Additionally, the land application of biosolids and dredged materials from the maintenance of stormwater BMPs may also be another pathway for PCBs to enter stormwater.

PCBs in Wastewater. These chemicals are also found in wastewater from industrial and municipal wastewater discharges, as well as combined sewer overflows. However, the presence of PCBs in wastewater is highly dependent on the site or facility. Except for a very few industrial stormwater permits, regulated dischargers are not required to monitor PCBs as a part of their permit-required monitoring. Furthermore, many labs do not have the capacity to test for the full range of toxic contaminants.

PCB TMDLs. All the states in the Chesapeake Bay watershed have identified waterways impaired by PCBs, meaning that the amount of PCBs exceeds the limit set by EPA. Under the authority of the Clean Water Act (CWA), states are required to develop a TMDL to reduce pollution within impaired waterbodies. Progress has been made to identify PCB impairments in Maryland (MD), Virginia (VA), the District of Columbia (DC), Pennsylvania (PA), West Virginia (WV), and Delaware (DE). However, because TMDL development is a lengthy process, many areas in the Chesapeake Bay watershed lack an established TMDL. The maps on the next page show the number of impaired waters compared with established TMDLs. This highlights that there are many incomplete or pending TMDLs that may be established in the watershed. In addition to the backlog of future TMDLs, regulatory agencies in MD, VA, and DC also have not developed implementation plans for PCB TMDLs that have been established to date.





PCB TMDL development in the Chesapeake Bay watershed. Maps adapted from the Partnership PCBs in the Chesapeake Bay 2017 Story Map. (<http://chesbay.maps.arcgis.com/apps/MapSeries/index.html?appid=704ecbbb9f5943eca87d59b349edf1ab>)

Use, Disposal, and Clean-up of PCBs. In addition to the CWA, the EPA regulates the use, disposal, and clean-up of PCBs under the Toxic Substances Control Act. Between fiscal year (FY) 2010 and 2014, the EPA Region 3 Resource Conservation and Recovery Act Corrective Action program expedited cleanups for 213 facilities within the Chesapeake Bay watershed. As of September 2014, EPA Region 3 has made significant progress in the Bay watershed to control exposure pathways and construct permanent remedies for PCB contamination. Also, under the Comprehensive Environmental Response Compensation and Liability Act, 65 sites have been identified in three urban areas: Baltimore Harbor (MD), Anacostia River (MD/DC), and Elizabeth River (VA). The sites have been or are currently being investigated for potential cleanup. If installation staff have questions about their state regulations or sites at their installation, the state partnership meetings between the states, DoD, and EPA are a potential venue for that discussion.

Next Steps

With many pending PCB TMDLs, installations should begin to consider potential impacts to their operations, existing permit controls that might be leveraged to collect data, and co-benefits with their water quality and natural resource programs. Installations may also evaluate potential sources of PCBs at their facilities and no- or low-cost substitutes to prevent further releases. Short-term actions installations can take to assess the impact of PCBs include:

- Visit your regulatory agency website to determine if your installation discharges to a waterway impaired for PCBs.
- Determine if a TMDL has been developed or if one is forthcoming. There may be opportunities to participate in the TMDL development process. Additionally, each TMDL is released for public comment before it is finalized, which is an opportunity for installations to provide input on the draft document.
- Stay involved in the CBAT to learn about programs and initiatives from the Partnership to address PCBs and other toxic contaminants as information is available.

Read the Toxic Contaminants Management Strategy (https://www.chesapeakebay.net/documents/22048/2018-2019_toxic_contaminants_policy_and_prevention_management_strategy.pdf) for more information on planned initiatives to address PCBs and other toxic contaminants. The WQGIT fact sheet is available on the Partnership website (https://www.chesapeakebay.net/channel_files/26661/toxics_wiptemp_draft_2-14-18_clean.pdf) with a description of BMPs that provide co-benefits for urban toxic contaminants.



Chesapeake Bay Action Team Updates

By Hee Jea Hall, Brown and Caldwell

Members of the CBAT convened for their quarterly meeting on 23 July to review ongoing Chesapeake Bay-related service and installation projects and activities. Members reviewed the FY2020 BMP and Project and Indicators (P&I) datacalls, 2019 BMP crediting reports, and the Chesapeake Bay Watershed Data Dashboard.

Chesapeake Bay Service Leads and Installation Updates

- Ms. Jodi Knowles, Aberdeen Proving Ground, is reviewing the Maryland Department of Environment's in-lieu fee wetland mitigation program.
- Mr. Mitch Keiler, Fort Meade, successfully applied for funds from the United States Forestry Service for a design-build project and dam intake study.

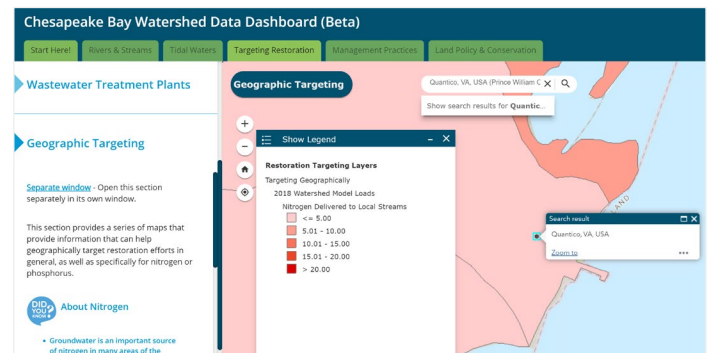
2019 BMP Crediting Report Overview and 2020 Datacall Training

Ms. Stephanie MacDurmon reviewed the BMP datacall, which was released to installations by email on 31 July; responses were due 31 August. Installations report progress BMPs (implemented between 1 July 2019 and 30 June 2020), planned BMPs (to be implemented between 1 July 2020 and 30 June 2025), and historical BMPs (implemented prior to 1 July 2019) in the state template appropriate to their installation. Ms. MacDurmon reviewed the structure of the BMP datacall spreadsheets and the changes in each state template. The focus areas for the BMP datacall include the correct reporting of annual BMPs, reporting of natural resources projects with water quality co-benefits, and the complete reporting of planned BMPs.

The P&I datacall was released 31 August by e-mail; responses were due by 9 October. Installations were asked to update and/or report projects funded in FY2020 or programmed through FY2022 and update key program indicators and metrics on the Installation Information sheet. Ms. MacDurmon reviewed the changes to the Installation Information sheet and noted the focus areas for the P&I datacall are comprehensive reporting of projects and funding amounts, the quality of project descriptions, and collection of information on stormwater utility fees paid by installations. Project success stories are identified from the P&I datacall.

Chesapeake Bay Watershed Data Dashboard

Dr. Emily Trentacoste of the EPA Chesapeake Bay Program Office gave an overview of the Chesapeake Bay Watershed Data Dashboard (<https://gis.chesapeakebay.net/wip/dashboard/>). The dashboard is an online tool that provides environmental and water quality managers and planners access to a tremendous amount of scientific and technical information to aid restoration efforts. Installations can view training videos posted to the Dashboard's training webpage.



Screen capture from the Chesapeake Bay Watershed Data Dashboard.

DoD Chesapeake Bay Program Updates

- Installation Status Report Pilot. Thank you to Joint Base Andrews and Quantico for volunteering to represent the Air Force and Marine Corps, respectively, in the pilot program.
- The DoD CBP asked installations to review a spreadsheet with the datacall points-of-contact in preparation for the 2020 datacall.
- The DoD CBP distributed information about the 2020-2021 DoD two-year milestones. The DoD CBP would like to hear from installations with agricultural outleasements to assess opportunities to support jurisdiction Phase III WIPs.
- The DoD CBP is looking to partner with installations during the review of INRMPs to ensure that the plans integrate Chesapeake Bay Program drivers and benefits.
- The Summer 2020 Journal is posted to the DoD CBP DENIX website and can be found at <https://www.denix.osd.mil/chesapeake/dod-cbp-quarterly-journals/>
- There is a new section on the DoD CBP DENIX website with tailored content for Commanding Officers (<https://denix.osd.mil/chesapeake/>).

The next CBAT meeting was held on 29 October 2020.



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DoD/Don Chesapeake Bay Program Office

✓ Check it Out

Two-Year Milestones: Mapping the way to clean water, Bay Journal article, published 2 September. <https://www.bayjournal.com/news/local-government/two-year-milestones-mapping-the-way-to-clean-water/article/3cd59daa-ed4e-11ea-b085-533035f41807.html>

Trees' ability to store carbon impacted from deep underground, Penn Live news article, published 28 August. <https://www.pennlive.com/life/2020/08/trees-ability-to-store-carbon-impacted-from-deep-underground.html>

National Fish, Wildlife, and Plants Climate Adaptation Strategies, U.S. Climate Resilience Toolkit. This Strategy describes a set of goals and actions to build ecosystem resilience in the face of climate challenges. <https://toolkit.climate.gov/tool/national-fish-wildlife-and-plants-climate-adaptation-strategy>

Studying Maryland's official state reptile on Pax River's beaches, Bay Net article by Donna Cipolloni, NAS Patuxent River Public Affairs,

published 11 August. <https://www.thebaynet.com/articles/0820/studying-marylands-official-state-reptile-on-pax-rivers-beaches.html>

Readiness and Environmental Protection Integration events:

- Resiliency & Readiness Virtual Workshop - A National Look at Military Installation Resilience. 18 November, 1:00 – 3:00 pm. <https://www.repi.mil/Resources/Webinars/ModuleID/84948/ItemID/4569/mctl/EventDetails/>
- Exploring Endangered Species Crediting Strategies. 9 December, 1:00 – 2:30 pm. <https://www.repi.mil/Resources/Webinars/ModuleID/84948/ItemID/4570/mctl/EventDetails/>

CBAT Quarterly Conference Call and Meeting. The last CBAT meeting was held 29 October 2020. To learn more about the presentations and discussion at the meeting, visit the DoD CBP website at: <https://authoring.denix.osd.mil/chesapeake/dod-cbp-chesapeake-bay-action-team-cbat/cbat-meeting-minutes/>

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