

DoD Chesapeake Bay Program

Fiscal Year 2021 Annual Progress Report





Introduction



To Our Readers,

As Commander, Navy Region Mid-Atlantic and the Lead Agent for all military services in the Chesapeake Bay watershed, I am pleased to share the Fiscal Year (FY) 2021 Annual Progress Report for the Department of Defense (DoD) Chesapeake Bay Program (CBP).

With 64 major installations across the Chesapeake Bay watershed, DoD recognizes its significant role in protecting and restoring the Bay while also working to sustain its mission. The DoD continues to prioritize involvement with the Chesapeake Bay Commission (CBC) and, in FY2020, the relationships built with CBC members led to a new DoD CBP initiative, the establishment of Chesapeake Bay Program Installation Status Reports. In FY2021, multi-Service feedback on the reports informed additional efforts to support installation-level Chesapeake Bay Program management, including the development of installation-specific load reduction goals, installation staff training on the use of the Chesapeake Bay Modeling Tool, and the release of educational fact sheets and quarterly Journal articles on technical topics to support those efforts.

DoD CBP has worked with the Environmental Protection Agency (EPA) and our federal agency partners in the development of the Chesapeake Bay Program Partnership's (Partnership) Climate Directive to reinforce our climate commitments in Executive Order (EO) 13508. DoD CBP is an engaged member of the Partnership's Federal Office Directors and Federal Facilities Workgroup and has identified water quality milestones to track and report DoD's progress in Chesapeake Bay restoration. We also work with our jurisdictional partners to ensure complete and accurate data on the implementation and maintenance of water quality best management practices (BMPs) that contribute to pollution reduction goals in jurisdictional Watershed Implementation Plans (WIPs). For example, working cooperatively, we have ensured 99% of all BMPs in Pennsylvania and 92% of all BMPs in Maryland receive credit.

The work of installations is the backbone of DoD's commitment to restoring the Chesapeake Bay. By creating and leveraging partnerships with local, state, and non-government organizations our installations have identified, funded and implemented projects that contribute to the goals and outcomes of the 2014 Chesapeake Bay Watershed Agreement while also sustaining the mission. Naval Station Norfolk, Naval Medical Center Portsmouth, and Norfolk Naval Shipyard, partnered with its defense communities to develop a Joint Land Use Study (JLUS) to address issues and priorities of common concern, such as roadway flooding, climate threats, limited transit and access alternatives, and land use conflicts in and around these installations. Fort Indiantown Gap, Joint Base Langley-Eustis, Naval Support Facility Dahlgren and Aberdeen Proving Ground worked with state, local, and non-government partners and leveraged assets to preserve off-base agricultural and riparian lands, wetlands, wildlife habitat, and culturally significant landscapes.

The DoD works with defense communities on natural resources and citizen stewardship activities to improve the local environment and quality of life. Despite the challenges of the COVID-19 pandemic, installations throughout the watershed celebrated

Earth Day, National Marina Day, Clean the Base Day, Arbor Day, National Public Lands Day, and World Water Day by hosting or participating in educational outreach and cleanup events. In fact, the 334 stewardship events in FY2021 increased three-fold from the previous year. These events provided opportunities for DoD Service members, staff, and other partners to work hand-in-hand and build relationships that promote greater awareness and momentum toward improved water quality, enhanced natural resources, and climate resilience.

As this report demonstrates, partnering is at the very core of DoD efforts to protect and restore the Chesapeake Bay and we recognize the key role collaboration plays in sustaining mission assurance and strengthening local communities and resilient natural resources. The following pages provide just a small sample of how DoD and its partners excel every day to protect the watershed resources in our care and sustain the mission.

Rear Admiral Charles W. Rock



PHOTO BY KEVIN DUBOIS, DOD CBP.

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COVER PHOTO WAS PROVIDED BY FORT A.P. HILL.



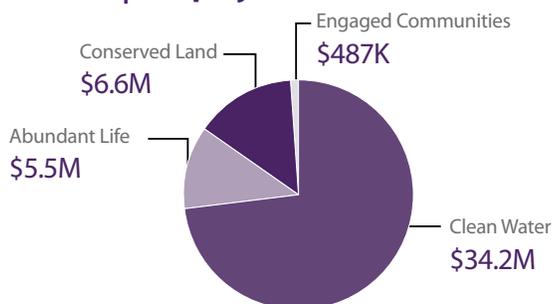
The Department of Defense (DoD) Chesapeake Bay Program (CBP) and military installations are committed to advancing the goals and outcomes of the 2014 Chesapeake Bay Watershed Agreement while simultaneously maintaining the ability for DoD to test weapon systems, train, and operate in the watershed. In Fiscal Year (FY) 2021, DoD invested approximately \$46.8 million (M) in efforts to restore the Chesapeake Bay.

Military installations in the District of Columbia, Maryland, New York, Pennsylvania, Virginia, and West Virginia have continued to emphasize projects that provide co-benefits to achieve multiple Bay goals, to meet installation objectives that preserve military readiness, and are a wise use of limited federal assets.

Installations grew their partnerships with federal, state, and local governments and non-governmental organizations to maximize the efficiency of all available resources. These actions support the mutual priorities of installations and their surrounding defense communities. Additionally, DoD military and civilian employees and their families took a hands-on approach to Bay restoration, volunteering their time towards three times the number of citizen stewardship events and outreach programs than in FY2020.

This page highlights some of the outcomes of DoD projects in FY2021 that promote specific targeted benefits.

FY2021 Project Funding \$46.8M | 335 projects



FY2021 by the Numbers:

To Promote Abundant Life:



To Increase Conserved Land:



To Build Engaged Communities:



To Provide Clean Water:





DoD in the Chesapeake Bay Watershed

LEGEND

● Air Force

1. Air National Guard (MD) - 175 WG Warfield
2. Air National Guard (PA) - 193d SOW Harrisburg, PA
3. Air National Guard (WV) - 167th Airlift Wing, Shepherd Field, Martinsburg, WV
4. Joint Base Andrews
5. Joint Base Langley-Eustis (Eustis)
6. Joint Base Langley-Eustis (Langley)

● Army

7. Aberdeen Proving Ground
8. Adelphi Laboratory Center
9. Arlington National Cemetery
10. Army Reserve National Guard (ARNG) (D.C.)
11. ARNG (MD)
12. ARNG (PA)
13. ARNG (VA)
14. Carlisle Barracks
15. Fort A.P. Hill
16. Fort Belvoir
17. Fort Detrick
18. Fort George G. Meade
19. Fort Indiantown Gap
20. Fort Lee
21. Joint Base Myer-Henderson Hall - Fort McNair
22. Joint Base Myer-Henderson Hall - Fort Myer / Henderson Hall
23. Letterkenny Army Depot
24. Scranton Army Ammunition Plant

★ Defense Logistics Agency (DLA)

25. Defense Depot Susquehanna Pennsylvania
26. Defense Supply Center Richmond

★ Marine Corps

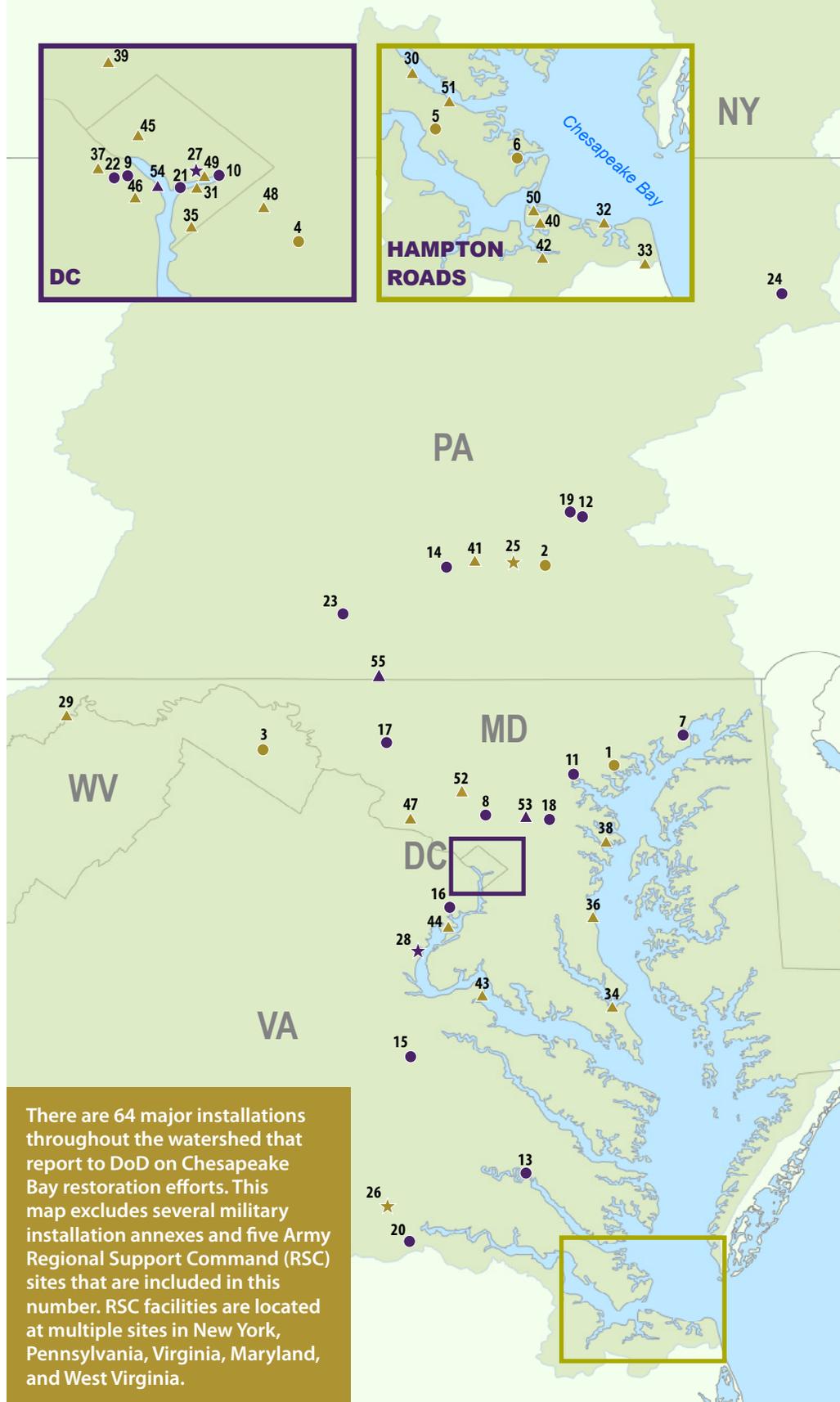
27. Marine Barracks Washington
28. U.S. Marine Corps Base Quantico

▲ Navy

29. Allegany Ballistics Laboratory
30. Camp Peary
31. Joint Base Anacostia-Bolling
32. Joint Base Little Creek - Fort Story
33. Naval Air Station (NAS) Oceana
34. NAS Patuxent River
35. Naval Research Lab (NRL) Headquarters
36. NRL Maryland detachments: (CBD, Pomonkey, BPTF)
37. NRL Virginia detachment: (MRC on Quantico)
38. Naval Support Activity (NSA) Annapolis
39. NSA Bethesda
40. NSA Hampton Roads
41. NSA Mechanicsburg
42. Norfolk Naval Shipyard
43. NSA South Potomac - Naval Support Facility (NSF) Dahlgren
44. NSA South Potomac - NSF Indian Head
45. NSA Washington - Naval Observatory
46. NSA Washington - NSF Arlington
47. NSA Washington - NSF Carderock
48. NSA Washington - Suitland
49. NSA Washington - Washington Navy Yard
50. Naval Station Norfolk
51. Naval Weapons Station Yorktown
52. Olney Federal Support Center

▲ Other Installations

53. National Security Agency at Fort George G. Meade
54. Pentagon
55. Raven Rock Mountain Complex



There are 64 major installations throughout the watershed that report to DoD on Chesapeake Bay restoration efforts. This map excludes several military installation annexes and five Army Regional Support Command (RSC) sites that are included in this number. RSC facilities are located at multiple sites in New York, Pennsylvania, Virginia, Maryland, and West Virginia.



At the core of the DoD CBP mission are the principles to integrate, partner, and engage in order to protect and restore the Bay for military readiness, for our community, and for future generations.

While the military mission is DoD's first priority, each year DoD contributes to restoring the Chesapeake Bay watershed in support of Executive Order (EO) 13508 (Chesapeake Bay Protection and Restoration) and the 2014 Chesapeake Bay Watershed Agreement.

The combined accomplishments of individual installations in the watershed are the foundation of DoD's success in supporting Bay restoration. This annual report will highlight success stories from installations that demonstrate DoD's commitment to the Chesapeake Bay Program Partnership's (Partnership's) management strategy categories: Abundant Life, Conserved Land, Engaged Communities, Clean Water, and Climate Resilience.

Many of the projects highlighted in this report meet multiple installation objectives while also providing environmental co-benefits. Co-benefits recognized by the Partnership and applicable to the DoD are on the right and are indicated on the example projects shown on the following pages.

Projects that have climate resilience, natural resources, and water quality co-benefits wisely use limited fiscal resources and play an integral role in military readiness and regulatory compliance.

Projects highlighted on the following pages showcase how installations leverage assets to achieve mutual share benefits with their non-DoD partners. DoD understands that these efforts not only benefit the military mission and the environment but also the economies and quality of life in surrounding defense communities.

Selected Project Co-Benefit Categories



Habitat

- » Biodiversity & Habitat
- » Fish Passage
- » Stream Health
- » Submerged Aquatic Vegetation
- » Wetlands



Healthy Watersheds

- » Healthy Watersheds
- » Land Use Methods & Metrics



Sustainable Fisheries

- » Fish Habitat
- » Oysters



Water Quality

- » Bacteria Loads
- » Energy Efficiency
- » Flood Control/ Mitigation
- » Forest Buffers
- » Groundwater Recharge
- » Recreation



Climate Resilience



Citizen Stewardship



Protected Lands



PHOTO BY MARK LEWIS, FORT DETRICK DPW.



Abundant Life

The phrase “Abundant Life” represents the number and diversity of plant and wildlife communities that exist in a healthy ecosystem. Ecosystems rich with abundant life are the cornerstone of the Chesapeake Bay watershed.

On DoD land, military operations coexist with the flora and fauna found within the installation fenceline. The Sikes Act requires that DoD provide for the conservation of natural resources with limited disruption of military activities. Installations accomplish this through the development and implementation of Integrated Natural Resources Management Plans (INRMPs) and through external partnerships on projects such as oyster restoration. In FY2021, installations enhanced and restored habitat for wildlife, promoted the preservation of wetlands, managed invasive species, and conducted surveys to assess the health of key indicator plant and animal species. Long-standing efforts to track the presence and extent of wetlands, submerged aquatic vegetation (SAV), and riparian buffers at DoD installations provide valuable information about ecosystem and habitat health.

These efforts contribute to the overall health of the Chesapeake Bay watershed including water quality and stream health. The four projects highlighted on the next page demonstrate their multi-faceted benefits to the mission, to defense communities, and to their shared natural resources.

FY2021 by the Numbers:



\$5.5M invested in Abundant Life projects

252 new acres of pollinator habitat created



7,401 additional trees planted at DoD installations

3 oyster projects for reef restoration in waters at and around installations



PHOTO BY MASTER SGT. STEPHEN J. CARUSO, US AIR FORCE.

Incorporating Climate Adaptation into INRMPs

In order to sustain mission functions and meet federal land, water, and natural resources requirements, DoD policy requires installations to incorporate climate considerations into their INRMPs. As stated in the Climate Adaptation section of **Joint Base Anacostia-Bolling's (DC) INRMP**, such updates are intended to “reduce climate-related vulnerabilities or enhance resilience”. Maintaining up-to-date INRMPs and retrofitting existing projects to account for climate considerations helps installations protect not only military activity from disturbance but also crucial natural resources.



Enhancing Pollinator Habitats

Fort Lee (VA) maintains 40 acres of open grassland which is home to numerous wild sedges and flowers. This land hosts one of the densest populations of grasshopper sparrows, a declining species, in the Mid-Atlantic region. To create focal points of pollinator species for observers, the installation has begun converting two acres of this grassland in patches to pollinator-friendly habitat. Though this project is only partially complete, staff have already seen notable increases in pollinator species in these patches with particularly high response from threatened monarch butterflies surrounding the newly planted milkweed.



Biodiversity & Habitat



Healthy Watersheds



Protected Lands



PHOTO BY [HTTPS://WWW.MASS.GOV/INFO-DETAILS/FEATURED-HABITAT-PROJECTS](https://www.mass.gov/info-details/featured-habitat-projects)

Stabilizing Pond Shorelines with Native Wetland Vegetation

NSA Bethesda (MD) is utilizing a combination of invasive species management and native wetland species planting to enhance the shoreline of its University Pond. In FY2021, the installation applied herbicides to invasive species which sprawled over the pond shoreline, restricting growth of native species and increasing erosion on the edge of the pond. Shoreline enhancement efforts for the University Pond are to be completed in FY2022 with the planting of native rushes and sedges. Once completed, this once degraded pond will be home to a flowering upland and aquatic ecosystem of high ecological and aesthetic value.



Multiple



Flood Control/
Mitigation



Climate Resilience



PHOTO BY ASSISTED MANAGEMENT SOLUTIONS.

Restoring Habitats for Species Conservation

Fort A. P. Hill (VA) manages 750 acres of open area habitat for species conservation. The installation both disperses seeds to promote native pollinator-friendly plant growth and uses a combination of prescribed fires, tilling, and mowing to combat invasive species and promote native warm season grasses. These practices help maintain an early successional habitat that is home to a multitude of species, including birds such as the bobwhite quail and grasshopper sparrow, and pollinators such as the American bumblebee and the migratory monarch butterfly.



Biodiversity & Habitat



Healthy Watersheds



Protected Lands



PHOTO BY FORT A.P. HILL.

Promoting Biodiversity through Land Conversion

In FY2021, **Joint Base Langley Eustis (JBLE) - Eustis (VA)** created 44 acres of meadow from fallow land as part of its annually recurring conversion effort. The installation seeds the conversion sites with native warm-season grasses and forbs which were selected to create early successional habitats that attract various species. These new plant assemblages improve soil quality, reduce stormwater runoff, and support the biodiversity goals of the JBLE-Eustis INRMP.



Multiple



Multiple



Healthy Watersheds



PHOTO BY JAMES CARR, JBLE-EUSTIS.



Conserved Land

Land conservation preserves natural and rural landscapes and the ecosystem services they provide, such as wildlife habitat, groundwater recharge, and nutrient/sediment pollution reduction while mitigating encroachment impacts that threaten military operations.

Thirteen installations across the watershed maintain active REPI program partnerships to prevent incompatible land uses, protect training and testing areas for military readiness, mitigate the effects of climate and preserve wildlife habitat and natural environments through land conservation. In addition, the Middle Chesapeake Sentinel Landscape brings other non-DoD federal, state, and private partners to protect land that supports wildlife, agricultural productivity, and the DoD mission.

Conserved lands provide space for wetland migration, along with forest and wildlife habitat adaptation in response to climate change. They can also create recreational opportunities for DoD military and civilians and their surrounding defense communities.

Installations frequently partner with municipal, state, non-DoD, and other federal organizations to purchase and conserve parcels of ecological, agricultural, or cultural significance. In FY2021, installations in the Chesapeake Bay watershed leveraged over \$12.6M in non-DoD funds to conserve over 2,500 acres through the REPI Program, some within the Middle Chesapeake Sentinel Landscape.

Examples of projects from FY2021 are highlighted on the following page.

FY2021 by the Numbers:



\$6.65M

invested in Conserved Land projects

2,567

additional acres protected around DoD installations through the REPI program



6

 installations worked to conserve new areas of land

45,095

cumulative acres protected through the REPI program

Success through the REPI Program and Sentinel Landscape Partnerships

Since 2010, **NAS Patuxent River** and the **Atlantic Test Ranges (ATR) (MD)** have partnered with communities and conservation organizations to preserve land through the REPI Program. The success of these land conservation efforts was accelerated following the designation of the Middle Chesapeake Sentinel Landscape in 2015, which brought together several federal, state, and local partners. This partnership was leveraged for the receipt of federal funds, including a REPI Challenge award in 2020. These efforts have resulted in a total of 12,460 acres of land conserved through FY2021. The installation recognizes the invaluable role of its partners, who have provided assistance by coordinating with landowners, managing transactions, and providing matching funds throughout the years.



PHOTO BY BRITTANY MARSHALL, NAVAL FACILITIES SYSTEM COMMAND WASHINGTON.



Preserving Agricultural and Riparian Land

In FY2021, **Fort Indiantown Gap's (PA)** Army Compatible Use Program (ACUB) protected 205 acres of land through two projects. Each year, the installation and its partners select targeted ACUB projects based on several factors, including military mission priorities and secondary conservation benefits. The easements purchased in FY2021 maintain unrestricted aviation training east of the installation, prevent incompatible development around the installation, preserve riparian areas along a portion of Monroe Creek, and protect working agricultural land. The conservation of these parcels was assisted by the installation's external partners, the Ward Burton Wildlife Foundation and the Ever Green Team.



PHOTO BY THE EVER GREEN TEAM.

Limiting Encroachment and Protecting Land

Leveraging both REPI funds and landowner donation, **NSF Dahlgren (VA)** partnered with the Virginia Outdoors Foundation and the Trust for Public Land, to protect 824 acres of land over three properties. These easements reduce encroachment pressures along the Potomac River Test Range corridor, a unique testing environment which extends over 50 miles from the installation to the mouth of the Potomac River at the Chesapeake Bay. In addition to protecting mission-critical land and activities, these easements support the commonwealth of Virginia's land conservation goals and protects existing wildlife habitats from development losses.



PHOTO BY THE NAVAL FACILITIES ENGINEERING SYSTEMS COMMAND WASHINGTON'S REAL ESTATE BUSINESS LINE.

Partnering to Conserve Chesapeake Bay Shoreline

Aberdeen Proving Ground (MD) conserved 400 acres of land in FY2021 by leveraging REPI and local partner resources. While REPI provided \$895K to fund these easements, the installation partners, including Harford County, Harford Land Trust, and Maryland's Program Open Space, provided \$9.8M towards these conservation efforts. The conserved land includes culturally significant landscapes, forested shorelines along the Chesapeake Bay, and forest interior dwelling species habitat. This land will also remove 206 development right options from the installation's operational noise corridors.



PHOTO BY HARFORD COUNTY GOVERNMENT.



Engaged Communities

Environmental education and outreach activities improve environmental literacy and inspire a solidarity of purpose and action to restore the Chesapeake Bay watershed. DoD installations promote active stewardship of its natural resources by engaging citizens, active-duty personnel, DoD employees, and their families in outdoor activities and by providing public access to recreation sites. Their activities support citizen stewardship goals of EO 13508 and municipal separate storm sewer (MS4) permit requirements.

In FY2021, with proper COVID-19 precautions, installations began to reinvigorate in-person volunteer programs. Installations also continued to pursue outreach in virtual formats and find new ways to connect with the broader public, surrounding communities, and partners.

During a time where many indoor activities were cancelled or limited in operation, outdoor recreational outlets provided alternative venues for engagement. In the Chesapeake Bay watershed, 21 installations have public access sites open to DoD service members, employees, their families, and guests. Of those, nine installations have sites open to the general public. These areas allow visitors to connect with DoD's abundant natural resources and, in some cases, learn about the local environment and DoD's stewardship efforts.

FY2021 by the Numbers:



\$487k invested in Engaged Communities projects

334



new citizen stewardship events,
triple the amount in FY2020

2,099

volunteers at citizen stewardship events

205

total public access sites open to DoD service members, employees, their families, and other approved visitors

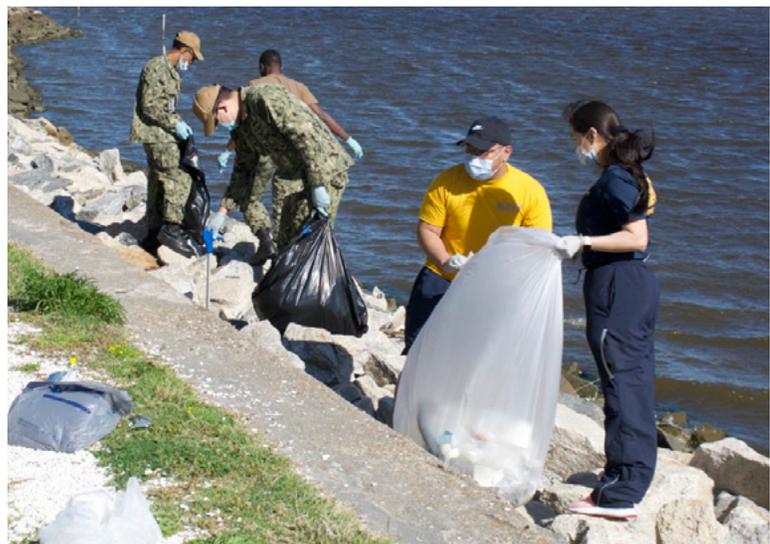


PHOTO BY KATISHA DRAUGHN-FRAGUADA, PAO, NSA HAMPTON ROADS.

Leveraging Volunteers to Promote Clean Shorelines

Following a pause in 2020 due to COVID-19 restrictions, **Naval Medical Center Portsmouth (NMCP) (VA)** was able to resume its annual Base Cleanup Day in 2021 with necessary safety precautions. During the event, 170 volunteers canvassed a mile and a half of shoreline, as well as other areas of the installation, and removed almost 4,000 pounds of trash and debris. More trash and debris were removed from the 2021 base cleanup than any NMCP cleanup in the past five years, showcasing the persistence of the volunteers following the pause.



Volunteers Making an Impact

NSA Washington and **Naval Surface Warfare Center (NSWC) Caderock (MD)** staff walked 1.2 miles of the Rock Run Stream to collect trash and debris during their annual cleanup event. This trash blocked stream flow and created pools of water that both prevented vegetation growth and increased the possibility of flooding. During this cleanup, volunteers collected 162 lbs of waste from the stream, mitigating some future flooding impacts that could have damaged mission essential equipment.



Citizen Stewardship



Water Quality



Climate Resilience



PHOTO BY NSA WASHINGTON NSF CADEROCK.

Maintaining Treasured National Trails

Joint Expeditionary Base Little Creek – Fort Story (VA) environmental staff and volunteers assisted in maintaining and improving the Heroes Circle Nature Trail, which honors fallen service members. Overgrown vegetation was trimmed back and 96 new dogwood trees were planted throughout the trail. Trail signage was revised to provide updated information and images of local wildlife species and freshwater marsh ecosystems. Efforts such as these have kept this trail a desired place for personnel to appreciate nature and remember those who have made the ultimate sacrifice for their country.



Citizen Stewardship



Recreation



Climate Resilience



PHOTO BY JOINT BASE LITTLE CREEK - FORT STORY PAO.

Promoting Environmental Stewardship During Clean the Base Day

Volunteers from **Joint Base Myer-Henderson Hall (JBM-HH)** and **Arlington National Cemetery (ANC) (VA)** joined together in June of 2021 to participate in Clean the Base Day efforts. Trash was removed throughout the installations' property boundaries. A total of 245 lbs of trash and approximately one cubic yard of scrap metal was collected during this event. Waste collection prevents trash from entering stormwater systems and waterbodies, protecting local water quality and wildlife and prevents flooding.



Citizen Stewardship



Water Quality



PHOTO BY STACEY ROSENQUIST, ANC.

Educating Communities on Sustainable Practices

Army Reserve National Guard (VA) assisted the Virginia Tech Southern Piedmont Agricultural Research and Extension Center by educating almost 300 elementary school students on science topics during its Agricultural Days. Katy Overby, Virginia Department of Military Affairs, presented on the benefits of vermicomposting to 3rd grade students. Vermicomposting (composting with earthworms) supports the reduction of food waste and promotes sustainable habits to future generations. View the videos at: https://www.youtube.com/playlist?list=PLGaeEiRdPaCXT5d_Q_6-Cp958TWtHo8Jo



Citizen Stewardship



Healthy Watersheds



PHOTO BY MARGARET KENNY'S YOUTUBE CHANNEL.



Clean Water

The reduction of nutrient, sediment, and contaminant loads is essential to the health of the Chesapeake Bay and its tributaries. Following EO 13508, DoD sets goals and tracks progress towards milestones that lead to nutrient and sediment pollution reduction. It supports these goals through the implementation of stormwater pollution control practices that improve water quality.

DoD also owns and operates eight significant wastewater treatment plants in the Chesapeake Bay watershed. Through enhanced nutrient removal, DoD continues to successfully reduce pollutant loads from these sources.

Natural and nature-based habitat creation and restoration efforts in streams, wetlands, riparian buffers, and forests can also reduce pollution for cleaner water.

DoD's built and natural BMPs can work in concert to meet Chesapeake Bay Total Maximum Daily Load (TMDL) targets and make significant contributions to Chesapeake Bay jurisdictions' water quality goals outlined in their Phase III Watershed Implementation Plans. By identifying projects with co-benefits, installations with limited land, staff, or fiscal resources can find creative ways to leverage their assets and meet multiple military objectives.

The projects highlighted on the next page demonstrate some of the many ways DoD implemented projects to improve water quality in the Chesapeake Bay watershed.

FY2021 by the Numbers:



\$34.2M invested in Clean Water projects



5,409 linear feet of new streambank restored

21

acres of new impervious surface removed



186 new BMPs constructed in State Year 2021



PHOTOS BY MICHAEL BAKER INTERNATIONAL

Maintaining BMPs for Continued Performance

Pollutant reduction within the Chesapeake Bay watershed relies not only on the implementation of new BMPs but also on inspection and maintenance of existing BMPs for sustained performance. Without allocating adequate resources to the post-construction lifespan of a BMP, these systems could lose functionality and, potentially, no longer meet TMDL credit or MS4 permit requirements.

Some installations, such as **Naval Station Norfolk (VA)**, have developed programs which routinely inspect existing BMPs to prioritize maintenance activities. These types of programs help installations strategically manage resources to minimize loss of BMP performance and credit.



Developing a Resilient Floodplain

In FY2021, **Defense Distribution Center, Susquehanna (PA)** constructed a wetland with a receiving area of 9.35 acres, cumulatively restored 3,500 linear feet of streams, and conducted a total of 14 floodplain restoration projects. While the constructed wetland project was selected to restore areas overtaken by invasive species, the stream and floodplain restoration projects were identified as methods to provide effective pollutant reductions with the least long-term costs. Overall, implementing these BMPs will provide the installation and downstream regions with erosion control, enhanced nutrient removal, and runoff reduction.



Multiple



Healthy Watersheds



Multiple



Climate Resilience



PHOTO BY JEFFREY REDLINE, DLA.

Restoring and Stabilizing Streams

The **Naval Research Laboratory Chesapeake Bay Detachments (NRL CBD) (MD)** restored 1,816 linear feet of unstable stream in FY2021. The pre-restoration state of this stream reach was eroded with conditions that could not support fish habitat. This project used natural stream design and step pool techniques as well as repaired existing stormwater infrastructure to reduce streambed and bank instability, reduce sediment and nutrient loads, promote floodplain connectivity, and enhance native species habitat. Such efforts not only repair the conditions of the stream, but also support healthy habitats in the surrounding land areas, including for over 2,000 square feet of wetlands.



Multiple



Healthy Watersheds



Multiple



Climate Resilience



PHOTO BY NRL CBD.

Reducing Erosion and Sustaining the Mission

Fort Lee's (VA) Integrated Training Area Management (ITAM) program utilizes U.S. Department of Agriculture designed BMPs to control water quality runoff from its 26 miles of tactical vehicle and 5.1 miles of dismantled maneuver trails. In the past year, the tactical vehicle trails were upgraded to articulated concrete, which provides stable ground for vehicle passage without increasing Fort Lee's impervious land cover. Additionally, the ITAM team applies a 4-inch layer of wood mulch generated from the installation's forestry and grounds maintenance operations to stabilize these dismantled maneuver trails on a bi-annual cycle. This practice prevents trail erosion and diverts an estimated 2,000 tons of wood debris from landfills.



Healthy Watersheds



Water Quality



PHOTO BY JASON WALTERS, FORT LEE INTEGRATED TRAINING AREA MANAGEMENT COORDINATOR.



Leveraging Installation Collaboration and External Partnerships to Sustain the Mission and the Chesapeake Bay

Installation Commanding Officers, along with the support of their senior management, environmental program directors, environmental media managers, and subject matter experts balance achieving both the military mission and environmental sustainability. The strategy each installation utilizes to meet DoD's requirements under EO 13508 and commitments to the 2014 Chesapeake Bay Watershed Agreement varies depending on its unique mix of operational needs, land cover, ecology, and climate vulnerability. In order to fulfill these program drivers, installation staff must work across multiple disciplines to implement projects and initiatives that meet natural resources, stormwater, and climate resilience objectives.

DoD recognizes the important role of both internal and external collaboration in allowing installations to leverage their limited staff, land, and financial assets; maintain public confidence in military environmental stewardship; and maximize the effectiveness of Chesapeake Bay protection and restoration initiatives. Collectively, installations within the watershed continue to make great strides in water quality improvement, land conservation, and stewardship and the DoD Chesapeake Bay Program will continue to support installation efforts by:

- ✓ Collecting, analyzing, and reporting on stormwater and natural resources projects that support each jurisdiction's Watershed Implementation Plans (WIPs) and corresponding Federal Planning Goals (FPGs) in the District of Columbia, Maryland, Pennsylvania, and Virginia.
- ✓ Collaborating with federal, state, and local agencies to ensure that FPGs are fair and equitable. For example, DoD worked with the Commonwealth of Pennsylvania and EPA to revise the FPGs to ensure they were both equitable and achievable.
- ✓ Providing DoD BMP Credit Reports to EPA and jurisdictions to help identify corrective actions to be taken by both DoD and state partners, in order to maximize TMDL credit attained for achieving WIP goals. These reports depend on installations maintaining accurate and up-to-date BMP records.
- ✓ Developing guidance materials, trainings, fact sheets, journal articles, and other outreach materials to build awareness of new tools, strategies, partnerships, and funding opportunities for planning and implementing projects that support Partnership goals and outcomes. In FY2021, the DoD CBP developed new tools and training and utilized these outreach materials to teach installations on how they can track and manage their individual contributions to EO 13508 goals and objectives.
- ✓ Enhancing opportunities for defense communities to collaborate with partners and develop Compatibility Use Plans (CUPs) and Military Installation Resilience plans which help identify opportunities for funding and implementing projects through the REPI program and Sentinel Landscapes partnerships. For example, DoD is currently coordinating with state partners on a proposal for a new Sentinel Landscape designation in Virginia, which could connect the existing North Carolina and Middle Chesapeake Sentinel Landscapes.
- ✓ Celebrating the success and revival of installation environmental public education, outreach, and stewardship efforts with the integration of adequate health and safety precautions.
- ✓ Strengthening partnerships within the DoD by hosting the multi-service Chesapeake Bay Action Team and participating in nine Partnership stakeholder workgroups and goal implementation teams across the watershed.



Pollinator-friendly wildflower patch planted at Fort Lee (VA).

PHOTO BY DANA BRADSHAW, FORT LEE.



In FY2022, the DoD CBP will build on the work completed in FY2021 to support DoD's commitments to restoring the Chesapeake Bay watershed with the following actions:

- Support installations and report to EPA and the jurisdictions on BMP implementation, inspection, and maintenance activities for crediting in Chesapeake Assessment Scenario Tool.
- Integrate EO 14008 and EO 14507 addressing climate threats with current DoD CBP drivers (EO 13508 and the 2014 Chesapeake Bay Watershed Agreement).
- Collect and report on climate metrics as part of the 2022-2023 Programmatic Water Quality Milestones (see "DoD CBP Climate Metrics" to the right).
- Advocate for the development of cooperative defense community and installation-level climate and natural resource plans using DoD tools and resources for mutual benefit. This would include DoD Climate Assessment Tool (DCAT) threat assessments, CUPs, Military Installation Resilience Reviews, and updates to existing INRMPs to incorporate climate considerations.
- Encourage implementation of water quality, natural resource restoration and climate resilience efforts and promote regional opportunities through DoD programs, such as the REPI Program, Sentinel Landscapes Partnership, and Defense Community Infrastructure Program.
- Promote building relationships between installations and local, state, federal entities, and non-government organizations with the intent of leveraging the combined influence and resources of these partnerships to accomplish shared Chesapeake Bay restoration goals and improve military resilience.

DoD CBP Climate Metrics

The DoD CBP's 2022-2023 Two-Year Water Quality Milestones include the following climate-focused metrics:

- Report REPI program and REPI Challenge projects that include climate resilience co-benefits.
- Highlight significant collaborative efforts to enhance resilience.
- Incorporate climate resiliency themes into DoD CBP outreach materials (e.g., journals, fact sheets, annual progress report) to increase climate literacy.
- Report the number of installations who have completed a DCAT threat assessment.
- Identify the number of installations who have updated their INRMPs to include climate change.
- Track DoD dollars spent and BMPs implemented that provide climate resilience co-benefits.

Monitoring and reporting these metrics will help the DoD CBP assess both progress towards climate resilience objectives, as well as identify areas for future focus.



Regenerative step pool constructed as part of a stream restoration at ANC.

PHOTO BY STACEY ROSENQUIST, ANC.



DoD Chesapeake Bay Program

Fiscal Year 2021 DoD Chesapeake Bay Program Annual Progress Report



Acknowledgments

This report would not have been possible without the concerted efforts of a myriad of dedicated and motivated people who work every day to improve the quality of the environment throughout the Chesapeake Bay and its watershed, particularly the environmental staff of the DoD Chesapeake Bay installations. The activities that take place at the various DoD installations are generally not visible to the public and normally occur without fanfare. This report and its highlights are intended to demonstrate the many great accomplishments by DoD personnel and provide context to the scope and breadth of activities occurring within one of the largest landholders in the watershed.

The DoD CBP is jointly managed by Commander, Navy Region Mid-Atlantic within the Regional Environmental Coordination office and led by the Deputy Assistant Secretary of the Navy for Environment.