

# DoD Chesapeake Bay Program

## Fiscal Year 2020 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, it is my pleasure to present the Fiscal Year (FY) 2020 Annual Progress Report for the Department of Defense (DoD) Chesapeake Bay Program (CBP).

Since 1984, DoD has been a committed partner in Chesapeake Bay watershed restoration. Our resolve did not waver in FY2020, despite the unique challenges posed by the COVID-19 pandemic. Over the course of the year, DoD personnel demonstrated outstanding creativity and dedication by adapting to a virtual environment and continuing to support the Chesapeake Bay Watershed Agreement, the Chesapeake Bay Total Maximum Daily Load, and Executive Order 13508. In addition, DoD continued to strengthen its partnerships with academic and non-governmental organizations to leverage one another's resources and expertise toward shared goals. Supplementing \$4 million in DoD investments, non-federal partners contributed \$15.2 million in FY2020 to protect the military mission while preserving land and restoring marine resources around DoD installations.

At the suggestion of the Chesapeake Bay Commission, DoD developed a pilot program of CBP status reports for five installations in the watershed. The status reports facilitate tracking of individual contributions to state restoration efforts and inform land management decisions. To be completed in FY2021, this site-specific analysis is the first of its kind among the Chesapeake Bay partners, demonstrating DoD's ongoing leadership and innovation.

In FY2020, the DoD CBP also acted on feedback from the 2019 Chesapeake Bay Commanders' Conference and developed more frequent and targeted information for use by Commanding Officers. This ongoing effort is intended to increase awareness of DoD's goals and role in Chesapeake Bay restoration, engage and empower Commanding Officers in those efforts, and facilitate ongoing communication and cooperation between environmental staff and installation leadership.

I salute the men and women of the DoD and the 62 major installations across the Chesapeake Bay watershed who work tirelessly and collaboratively to contribute to Chesapeake Bay restoration, despite the ongoing pandemic. This report highlights only a small sample of DoD's successes and accomplishments in FY2020, demonstrating our dedication to the responsibility of protecting the Chesapeake Bay's water quality and living resources while fulfilling the DoD's primary mission of military readiness.

Rear Admiral Charles W. Rock  
Commander, Navy Region Mid-Atlantic



PHOTO BY MASS COMMUNICATION SPECIALIST 3RD CLASS SHANE BRYAN, U.S. NAVY.

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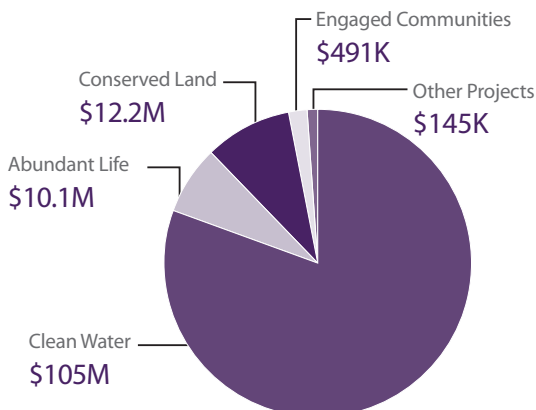
The Department of Defense (DoD) Chesapeake Bay Program (CBP) and military installations are committed to protect the Chesapeake Bay for military readiness, for our community, and for future generations.

Military installations in Maryland, Pennsylvania, New York, Virginia, West Virginia, and the District of Columbia play an important role in defending and preserving the Chesapeake Bay. **In Fiscal Year (FY) 2020, DoD invested approximately \$128 million (M) to restore the Chesapeake Bay.** These efforts advance the goals and outcomes of the Chesapeake Bay Watershed Agreement and further the ability for DoD to test, train, and operate in the watershed.

The DoD CBP also continues to support and coordinate initiatives to integrate restoration, pollution prevention, and stewardship in DoD's daily mission; to engage DoD military and civilian employees and their families as stewards of the Chesapeake Bay; and to partner with federal, state, and local governments and organizations to maximize resources.

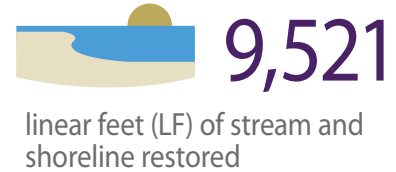
This page highlights some of the outcomes of DoD projects in FY2020 that promote abundant life, conserved land, engaged communities, and clean water.

## FY2020 Project Funding \$127.9M | 368 projects

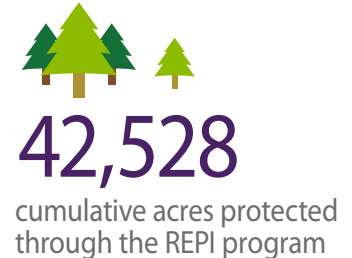


## FY2020 by the Numbers:

To Promote Abundant Life:



To Increase Conserved Land:



To Build Engaged Communities:



Despite COVID-related restrictions, DoD installations held



To Provide Clean Water:





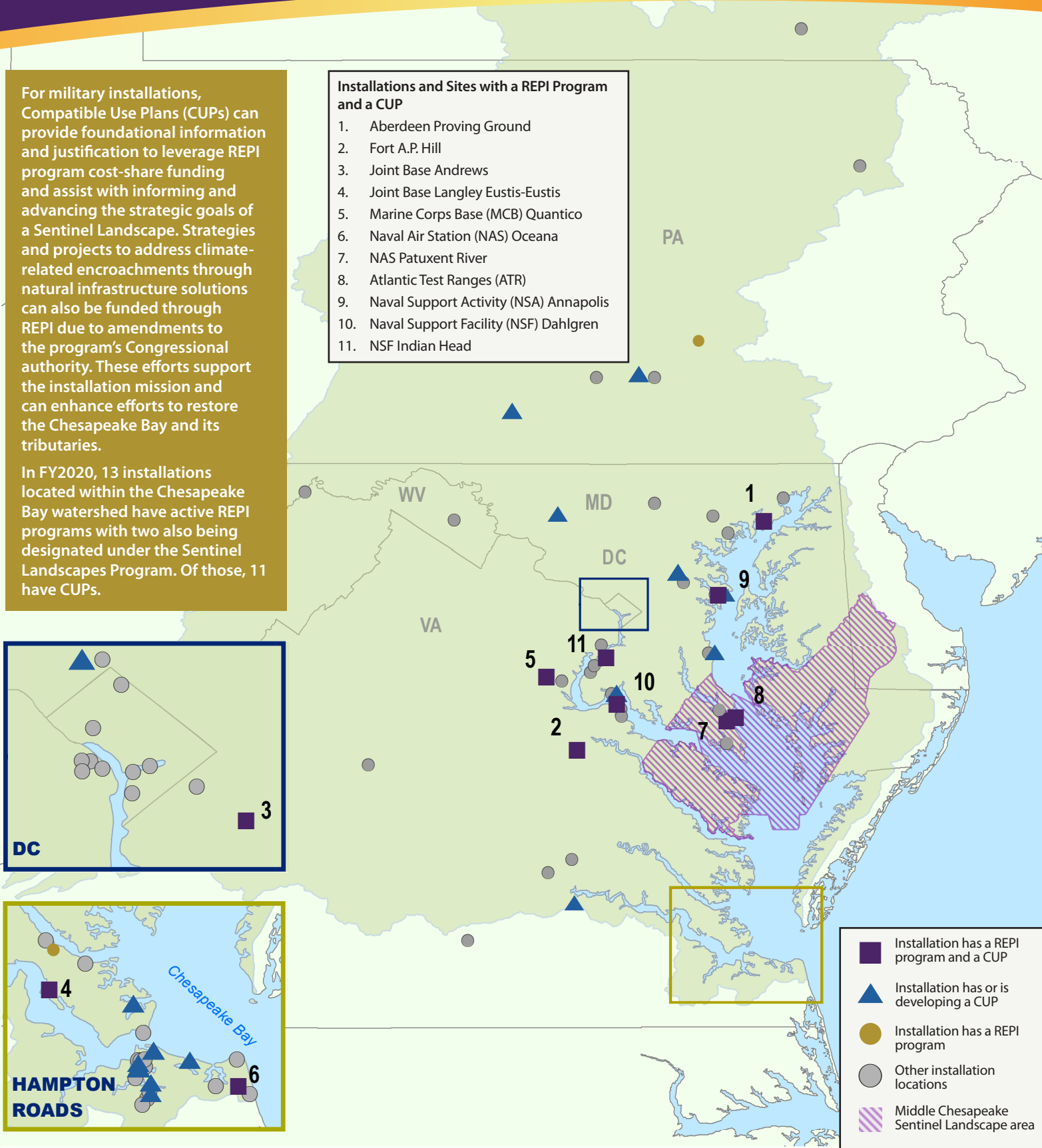
# DoD in the Chesapeake Bay Watershed

For military installations, Compatible Use Plans (CUPs) can provide foundational information and justification to leverage REPI program cost-share funding and assist with informing and advancing the strategic goals of a Sentinel Landscape. Strategies and projects to address climate-related encroachments through natural infrastructure solutions can also be funded through REPI due to amendments to the program's Congressional authority. These efforts support the installation mission and can enhance efforts to restore the Chesapeake Bay and its tributaries.

In FY2020, 13 installations located within the Chesapeake Bay watershed have active REPI programs with two also being designated under the Sentinel Landscapes Program. Of those, 11 have CUPs.

## Installations and Sites with a REPI Program and a CUP

1. Aberdeen Proving Ground
2. Fort A.P. Hill
3. Joint Base Andrews
4. Joint Base Langley Eustis-Eustis
5. Marine Corps Base (MCB) Quantico
6. Naval Air Station (NAS) Oceana
7. NAS Patuxent River
8. Atlantic Test Ranges (ATR)
9. Naval Support Activity (NSA) Annapolis
10. Naval Support Facility (NSF) Dahlgren
11. NSF Indian Head





With population growth and resulting development pressure on lands throughout the Chesapeake Bay watershed, DoD installations are increasingly called upon to balance the DoD's primary mission of military readiness with efforts to enhance ecosystem services and ensure critical assets are climate resilient. Therefore, projects that protect or enhance military readiness and restore environmental integrity represent the best use of DoD's fiscal and land resources. DoD has three initiatives that are specifically designed to preserve both military readiness and the environment. These initiatives also support the goals and outcomes of both Executive Order (EO) 13508 and the Chesapeake Bay Watershed Agreement:

- ✓ The **REPI Program** engages stakeholders with DoD to address encroachment of incompatible development through land conservation. Congress amended the REPI authority to allow REPI to fund activities that enhance installation resilience in response to changing environmental conditions.
- ✓ **Sentinel Landscapes Partnerships** encourage the strategic collaboration of federal agencies, state and local governments, and non-governmental organizations to strengthen military readiness, bolster agricultural and forest productivity, conserve natural resources, and increase access to recreation sites. Partners connect private landowners in Sentinel Landscapes with government assistance programs that offset the cost of implementing sustainable practices on their properties.
- ✓ **CUPs**, also known as Joint Land Use Studies (JLUSs), are collaborative plans developed by DoD and surrounding communities to prevent encroachments and preserve military readiness. CUPs identify priority encroachment issues, develop strategies and recommendations to address those priorities, and in some cases, identify specific projects. While some CUPs identify climate-related encroachments as a minor issue, others focus specifically on flooding and tidal inundation from climate impacts.

In addition to mission-related benefits, individual projects that meet multiple installation goals and objectives also represent a wise use of limited land, staff, and fiscal resources. This annual report highlights success stories from installations within the Chesapeake Bay watershed that include benefits across the Chesapeake Bay Program Partnership (Partnership) management strategy bins: Abundant Life, Conserved Land, Engaged Communities, Clean Water, and Climate Resilience. A list of the co-benefits recognized by the Partnership and applicable to DoD is to the right, and these co-benefits are indicated on the example projects shown on the following pages.

## 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



# Abundant Life

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

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. This is accomplished through the development and implementation of Integrated Natural Resources Management Plans (INRMPs). In FY2020, installations enhanced and restored habitat for wildlife, promoted the preservation of wetlands, provided management of invasive species, and conducted surveys to assess the health of key indicator plant and animal species. Ongoing 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. Abundant Life projects also benefit other components of the local ecosystem, such as water quality and stream health. The four projects highlighted on the next page demonstrate the multi-faceted benefits to both the mission of the DoD and their local environments.

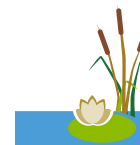
## FY2020 by the Numbers:



**\$10.1M** invested in Abundant Life projects

**43,883**

cumulative acres of protected wetlands across installations through FY2020



**8,636** cumulative acres of SAV at installations

**54,056**

trees planted at DoD installations



**4** oyster projects for reef restoration in waters at and around installations



### Cultivating Oysters for Clean Shorelines

DoD installations support natural marine resources by partnering with public and private sponsors for oyster restoration. The **Naval Research Laboratory (NRL) (MD)** has partnered with the Chesapeake Beach Oyster Cultivation Society since 2010. Each year, the installation receives immature oysters or “spat” to place along the NRL docks until they have matured. In FY2020, 7,000 matured oysters were harvested from these oyster cages and moved to a local reef. The species’ ability to filter excess nutrients and algae make oyster cultivation projects instrumental in the creation of healthy marine ecosystems in the Chesapeake Bay.

PHOTO BY ALISHA SUTTON, NRL CHESAPEAKE BEACH DETACHMENT.



## Restoring Historical Habitats

**Letterkenny Army Depot (LEAD) (PA)** partnered with the Pennsylvania Game Commission (PGC) to re-establish habitat for the native Northern Bobwhite quail. This goal is part of the LEAD INRMP, and since 2017, 800 acres of habitat have been established with funding from the PGC, the Army, and non-governmental partners. While the installation plans for the first reintroduction of quail to occur in 2023 or 2024, the newly created habitat has improved conditions for other species, including pollinators, such as the Monarch butterfly.



Biodiversity & Habitat



Healthy Watersheds



Protected Lands

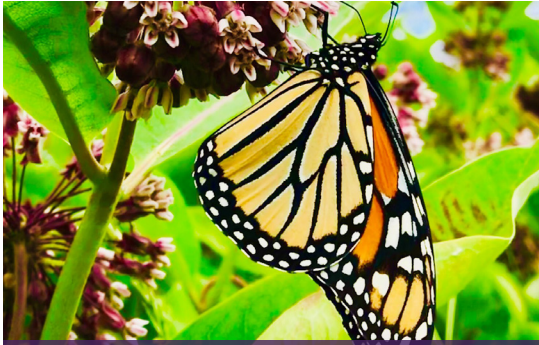


PHOTO BY CRAIG KINDLIN, LEAD.

## Managing Invasive Phragmites along Waterways

In FY2020, **Joint Base Langley-Eustis (JBLE)-Langley (VA)** treated 80 acres of wetlands along the Back River as a part of a multi-year effort to manage the invasive species, *Phragmites australis*. Phragmites can displace natural wetland plants, destroy wildlife habitat, and create fire hazards that can threaten flight operations in upland areas. By treating phragmites, JBLE-Langley has prevented disturbance of flight operations, protected essential habitat for 14 important fish species in the Back River, and helped protect corridors for the landward migration of wetlands in response to changes in tidal inundation.



Multiple



Flood Control/  
Mitigation



Climate Resilience



PHOTO BY ALICIA GARCIA, JBLE-LANGLEY.

## Promoting Shoreline and Oyster Restoration by Leveraging Volunteers

Volunteers installed more than 500 oyster castles near the **NSA Hampton Roads Lafayette River Annex (VA)** in the summer of FY2020. The project will support nearby oyster restoration efforts, prevent erosion of the adjacent shoreline, protect nearby wetlands, and contribute to NSA Hampton Roads' climate resilience. The project is also an example of a successful partnership between DoD, the Elizabeth River Project, and the National Environmental Education Foundation.



Oysters



Water Quality



Citizen Stewardship



Climate Resilience



PHOTO BY KEVIN DU BOIS, DOD CBP.

## Improving Stormwater Infrastructure to Benefit Streams and Wetlands

**Fort A. P. Hill (VA)** replaced 12 drainage culverts at the end of their design life in FY2020. The infrastructure improvements re-established stream flow to the installation's 6,291 acres of wetlands and allowed passage for local fish species. The culvert program also prepares the installation's infrastructure to handle future climate conditions, particularly increased flooding and water flow. These efforts contribute to the objectives of the installation's INRMP and Watershed Management Plan.



Multiple



Multiple



Climate Resilience



PHOTO BY GEF FISHER, FORT A.P. HILL.



# 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.

Thirteen installations across the watershed maintain active REPI programs to prevent incompatible land uses, protect training and testing areas for military readiness, and preserve wildlife habitat and natural environments through land conservation.

Conserved lands also provide space for wetland migration, along with forest and wildlife habitat adaptation in response to climate change, ensuring that natural ecosystem services persist into the future. They can also create recreational opportunities.

Recognizing the shared benefits of conserved land for DoD and surrounding communities, installations frequently partner with municipal and state governments and non-governmental organizations to purchase and conserve parcels of ecological or cultural significance. In FY2020, installations in the Chesapeake Bay watershed leveraged over \$15M in non-DoD funds to conserve over 3,000 acres through the REPI program.

Examples of projects from FY2020 are highlighted on the following page.

## FY2020 by the Numbers:



# \$12.2M

invested in Conserved Land projects

# 3,064

acres protected around DoD installations in FY2020 through the REPI program



# 7

 installations worked to conserve new areas of land

# 42,528

cumulative acres protected through the REPI program

## 2020 REPI Challenge Winners

In addition to the REPI program, the REPI Challenge recognizes innovative projects that promote partnership, prevent encroachment of incompatible land uses, and achieve other mission-related benefits through land conservation. In FY2020, two Chesapeake Bay installations **NAS Patuxent River** and **Naval Weapons Station (NWS) Yorktown** received awards. NAS Patuxent River project partners received a \$3M grant to purchase 4,000 acres of land easements in the Middle Chesapeake Sentinel Landscape, preserving ecologically significant marsh habitat beneath the ATR airspace. NWS Yorktown's project partners were awarded \$1M to restore and stabilize 900 ft of hybrid living shorelines and 3.5 acres of near-shore salt marsh, oyster reef, and shallow water habitats that support wildlife and protect valuable marine resources. Both projects also provide climate resilience co-benefits.



PHOTO BY U.S. NAVY.





## Limiting Encroachment and Conserving Land

In FY2020, **Aberdeen Proving Ground (APG) (MD)** protected 2,146 acres of forest, agricultural land, wetlands, and shorelines through the Army Compatible Use Buffer Program (ACUB). The protection of this land limits development within APG's high operational noise area, supporting mission and Chesapeake Bay restoration goals. Additional benefits of this land conservation include the protection of Bald Eagle habitat, Maryland Critical Areas, forests, and wetlands.



Multiple



Protected Lands



Multiple



PHOTO BY SCOTT MCDANIEL, SUSQUEHANNOCK WILDLIFE SOCIETY.

## Preserving Prime Agricultural and Forest Land

**MCB Quantico (VA)** partnered with Stafford County to purchase 32 acres of land known as the Beach property. The site includes 28 acres of prime agricultural land and Soils of Statewide Importance, as well as a 1.7-acre Critical Resource Protection Area. The property includes a tributary to Aquia Creek, which drains to the Potomac River.



Stream Health



Forest Buffers



Healthy Watersheds



Protected Lands



PHOTO BY KATHY BAKER, STAFFORD COUNTY PLANNING DEPARTMENT.

## Partnering to Protect Virginia's Northern Neck

The Navy partnered with Virginia Outdoors Foundation and the Northern Neck Land Conservancy to obtain easements for land adjacent to the **NSF Dahlgren (VA)** Potomac River Test Range. The land parcels, totaling 1,128 acres, comprise farmland, forest, and surface waters. The purchased easements provide valuable habitat for flora and fauna and eliminate the potential for encroaching development along Virginia's Northern Neck peninsula.



Biodiversity & Habitat



Water Quality



Healthy Watersheds



Protected Lands



PHOTO BY BRITTANY MARSHALL, NSF DAHLGREN.

## Protecting Land on a Large Scale

The ACUB Program at **Fort Indiantown Gap (PA)** protected 483 acres of land through five projects in FY2020, including the final portion of the 8,000-acre DeHart Reservoir project. The DeHart Reservoir project is the largest ACUB project completed at an Army National Guard garrison. These easements maintain unrestricted aviation training north of the installation, preserve riparian areas and wildlife habitat, and protect a drinking water source for the City of Harrisburg.



Biodiversity & Habitat



Forest Buffers



Healthy Watersheds



Protected Lands



PHOTO BY DARYL VALLEY, FORT INDIANTOWN GAP.



# Engaged Communities

Environmental education and outreach activities improve environmental literacy, build awareness of the benefits of a healthy Chesapeake Bay, and inspire a solidarity of purpose and action to restore the Chesapeake Bay watershed. These efforts also support the citizen stewardship goal of EO13508 and municipal separate storm sewer system (MS4) permit requirements, where applicable.

Each year, DoD installations promote outreach, participation in citizen stewardship events, and maintenance of public access sites. In FY2020, the COVID-19 pandemic forced the cancellation of many in-person events. Installations responded by adapting to virtual formats and finding new ways to connect with DoD service members, civilian employees, their families, and the public.

Additionally, in a year when many indoor activities were cancelled or limited in operation, outdoor recreational outlets like hunting, fishing, and hiking provided an alternative venue for outreach. In the Chesapeake Bay watershed, 20 installations have public access sites open to DoD service members, their families, and guests. Of those, nine installations have sites open to the general public. These areas allow visitors to connect with nature and, in some cases, learn about the local environment and DoD's stewardship efforts.

The following page highlights four examples of how DoD promotes environmental stewardship through its installation efforts.

## FY2020 by the Numbers:



**\$491k** invested in Engaged Communities projects

**109**

citizen stewardship events



**1,663**

volunteers at citizen stewardship events

**205**

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





### Stormwater Management and Resilience

As landscapes have become more developed and climate patterns have changed, we have begun to experience increased flooding, erosion, and infrastructure damage. One way to mitigate these impacts is to install stormwater practices like bio-retention areas, tree box filters, and green roofs. These practices help reduce flooding and infrastructure damage by allowing stormwater to soak into the ground where it lands, rather than flow over hard surfaces as runoff.

Stormwater practices have other benefits, too. Vegetation planted in stormwater practices also helps remove pollutants from stormwater, promote soil conservation by preventing erosion, and absorb carbon dioxide from the atmosphere. Additionally, increased vegetation keeps air temperatures cooler by lessening the urban heat island effect. Caused by hard surfaces absorbing and then emitting the sun's energy, this effect typically makes urban areas warmer than rural areas. Other stormwater practices such as vegetated stream buffers offer protection during storm surges by reducing streambank erosion and floodwater velocity.



For more information, email [WHS.Environmental@mail.mil](mailto:WHS.Environmental@mail.mil).

### Ways to Manage Stormwater at Home

- Install stormwater practices, like rain gardens and rain barrels, at your home. A rain garden is a vegetated area that is designed to receive runoff and allow it to pond before soaking into the ground. Rain barrels collect stormwater from your downspouts, which reduces the amount of water sent down storm drains and provides a source of free irrigation.
- Consider installing pervious pavement or pavers for driveways and walkways so that water can soak through them and into the ground.
- Redirect your downspouts to send stormwater to your lawn or other vegetated areas and away from paved surfaces and basement foundations.
- Clean your gutters so that stormwater can easily flow through them and away from your home.
- Participate in local programs, like Arlington County's StormwaterWise Landscapes program, that provide incentives to homeowners for installing stormwater practices.

### Other Ways to Make Your Home More Resilient

- Determine if it is necessary to install flood protection measures (e.g., flood doorway barriers, covers for basement window wells, sump pumps). Keep sand bags on hand to protect areas from flooding.
- Double-check that there are no leaks in your roof, especially around vents, chimneys, and plumbing, or from windows, doors, and foundations.
- Strategically place valuable items on higher floors in your home or on high shelves.
- Create an emergency kit containing essentials such as bottled water, food, clothing, and medications that you can access during a flood event.
- Sign up for severe weather alerts from your local municipality.



For more information, email [WHS.Environmental@mail.mil](mailto:WHS.Environmental@mail.mil).

## Engaging Virtually on World Water Day

Typically, the Pentagon hosts events to celebrate World Water Day and promote awareness of water conservation issues and best practices. As social distancing became a necessity, the Pentagon transformed their annual festivities into a digital outreach campaign.

For World Water Day 2020, the Pentagon sent an e-mail with attractive and engaging infographics and other materials highlighting stormwater management and resilience practices that can be applied at individuals' homes.



## Educating Hikers, Anglers, and Hunters

**NWS Yorktown (VA)** installed educational signage at the installation's fishing lakes and hiking and nature trails to educate visitors about the environment. A total of six signs were placed at the entrances of the installation's 6-mile nature trail and at three lakes: Jones Pond, Cheatham Lake, and Penniman Lake. The signs contain information about the local environment, the area's common flora and fauna, and conservation efforts to provide a more interactive experience for visitors.



Citizen Stewardship



Recreation



PHOTO BY TOM OLEXA, NWS YORKTOWN.

## Promoting Safe and Sustainable Hunting Practices

Approximately 5,000 hunting and fishing visits occur at **Letterkenny Army Depot (LEAD) (PA)** each year. These trips include annual hunts for the Wounded Warriors organization and Hunt of a Lifetime, an event for children with life-threatening illnesses. Each year, LEAD provides a presentation about the hunting program, hunting safety practices, and information on the LEAD natural resource program. Coordination among the directorates at LEAD ensures the hunting program does not impact the installation's mission.



Citizen Stewardship



Recreation



PHOTO BY CRAIG KINDLIN, LEAD.

## Using Volunteers to Make an Impact

Greenbury Point at **NSA Annapolis (MD)** is a training and recreation site for midshipmen from the U.S. Naval Academy and personnel at NSA Annapolis. In FY2020, volunteers from the Midshipmen Action Group's participated in two clean-up events at Greenbury Point where a total of 69 midshipmen removed approximately 110 lbs of garbage and 374 lbs of invasive species/debris. The volunteers also installed an interpretative sign at the nearby Pipsissewa Trail with information about barred owl, loblolly pine, and local invasive species. The two FY2020 events took place before COVID protocols were established.



Citizen Stewardship



Water Quality



PHOTO BY KATHARINE SEGUIN, NSA ANNAPOLIS.

## Educating Communities on Sustainable Practices

**Arlington National Cemetery (ANC) (VA)** is committed to environmental sustainability. Visitors can tour the installation's rain gardens that protect water quality. In FY2020, the installation's outreach was expanded to include a series of YouTube videos highlighting the importance of native plant species, the benefits of rain gardens, tree populations, and ecologically conscious landscaping. The videos can be found on the ANC YouTube page at this link: <https://www.youtube.com/channel/UCdviwqQHHUePZglBHXFvPw/videos>



Citizen Stewardship



Water Quality



Biodiversity & Habitat



PHOTO BY ELIZABETH FRASER, ANC.



# Clean Water

The reduction of nutrient, sediment, and contaminant loads is essential to the health of the Chesapeake Bay and its tributaries. Through implementation of EO13508, DoD is expected to establish milestones that lead to nutrient and sediment pollution reduction. DoD supports this goal to restore clean water by improving the water quality of discharges from stormwater and wastewater sources at DoD installations.

Restoration efforts can reduce pollution from stormwater with the implementation of BMPs that support the Chesapeake Bay jurisdictions and their Phase III Watershed Implementation Plans (WIPs) as part of the Chesapeake Bay Total Maximum Daily Load (TMDL). Implementing projects intended to enhance the quality of natural resources, such as stream restoration and wetland and habitat enhancement, can also provide for cleaner water. By identifying projects with co-benefits, installations with limited land, staff, or fiscal resources can find creative ways to leverage their assets that align with the military mission. DoD also owns and operates eight significant wastewater treatment plants in the Chesapeake Bay watershed. Through implementation of stormwater pollution control practices and enhanced nutrient removal, DoD continues to successfully reduce pollutant loads from these sources.

The projects highlighted on the next page demonstrate some of the many ways DoD has implemented projects to reduce the pollution that reaches local waterways and ultimately, the Chesapeake Bay.

## FY2020 by the Numbers:



**\$105M** invested in Clean Water projects



**9,521** LF of streambank restored

**358**

additional acres of impervious surface treatment



**232**

BMPs constructed in SY2020

### Leveraging Wastewater Projects to Protect Public Health

Wastewater conveyance systems are an often-overlooked source of nutrient and bacteria pollution.

At **Joint Base Andrews (MD)**, the water and wastewater service provider, Terrapin Utility Services, installed four “SmartCovers” to provide remote, real-time data on flow through the wastewater system. The results will be used to identify locations where pipe defects potentially allow wastewater to enter the soil and/or stormwater system. The project’s goal is to dramatically reduce wastewater exfiltration and prevent pipe blockages that would directly contribute to pollution in nearby waterways.



PHOTOS BY WILLIAM COARD, AMERICAN STATES UTILITY SERVICES.



## Achieving Water Quality & Habitat Improvements with Forest Buffer Restoration

In FY2020, **Fort Indiantown Gap (FTIG) (PA)** created 7.5 acres of forest buffers and enhanced nine acres of existing riparian areas. The removal of dead plants and invasive species from the existing buffers created open space for the expansion of trees and associated habitat into an adjacent mowed field. The project contributes to FTIG's goals to maintain natural areas for military training, improve habitat and streams, and enhance the visual landscape.



PHOTO BY DUSTIN KRAUSE, FORT INDIANTOWN GAP.

## Restoring Streams to Improve Water Quality

To reduce pollution and comply with its MS4 permit requirements related to the Chesapeake Bay TMDL, **Fort Detrick (MD)** restored 3,200 feet of Shookstown Creek. The restoration re-aligned the stream channel to accommodate a wider floodplain. The old channel will receive stormwater from two nearby wet ponds, creating a treatment train to increase pollutant reductions and increase storage capacity before it enters the main creek. The project treated an equivalent of 62 impervious acres, making a significant contribution to Fort Detrick's TMDL and MS4 permit goals.



PHOTO BY MARK LEWIS, FORT DETRICK.

## Incorporating BMPs in Parking Lot Project Requirements

In FY2020, **NSA Mechanicsburg (PA)** implemented a new stormwater requirement for parking lot projects completed at the installation. New projects must now include a bioretention facility to treat stormwater from the parking area. When an existing lot is repaved, it must be retrofitted to ensure stormwater from the lot is treated by a nearby stormwater BMP. The new bioretention facilities will reduce nutrient and sediment loads in support of the Chesapeake Bay TMDL.



PHOTO BY THE SENTINEL.

## Breaking Ground for Better Wastewater Treatment

In FY2020, **Norfolk Naval Shipyard (NNSY) (VA)** began construction of a new wastewater treatment plant, which will increase the installation's industrial wastewater treatment capabilities, effectiveness, and resilience. Technological improvements will reduce the plant's use of water from the City of Portsmouth. The addition of a parallel treatment train will more effectively treat the waste streams generated at NNSY, protecting water quality downstream in the Elizabeth River.



PHOTO BY NORFOLK NAVAL SHIPYARD.



# Aligning the Military Mission and the Environment

DoD depends on a variety of realistic testing and training environments to prepare the warfighter, including forests, beaches, grasslands, and coastal waters. This responsibility is formalized in the Sikes Act, which calls for military installations to protect natural resources in a manner consistent with each installation's mission. Land and natural resource management at DoD installations is also driven by the requirements of the Clean Water Act (including the Chesapeake Bay TMDL), DoD's commitment to the Chesapeake Bay Watershed Agreement, and EO13508.

These commitments should be balanced to maximize the benefits for each installation. The best way that DoD can use land and fiscal resources is to identify projects that support military readiness and provide multiple co-benefits, such as water quality improvement, natural resource sustainment, and climate resilience. In FY2020, DoD installations implemented projects that meet multiple goals.



PHOTO BY MCB QUANTICO.

Portion of a land easement in Stafford County, VA.

## Protecting Land to Prevent Encroachment Impacts

Development around military sites can have negative impacts, including noise and light pollution and disruption of training and aviation activities. Land conservation through the purchase of easements prevents the encroachment of these incompatible land uses. It can also create opportunities to protect a range of important environmental resources and services.

Land conservation protects plant and animal species and their habitats. It can also protect wetlands and natural streams, preserving the natural systems that filter pollutants from stormwater and attenuate flooding impacts from large storms.

Therefore, land conservation programs like REPI and ACUB can provide significant benefits for both environmental and military objectives. When combined with CUPs, installations can identify and prioritize projects that provide additional benefits for local climate resilience.



# Aligning the Military Mission and the Environment

PHOTO BY STEPHANIE HANSES, BROWN AND CALDWELL.



*Flooding in Norfolk, VA.*

## Weathering Changes in Climate

Installations and military operations are increasingly threatened by more intense and frequent severe storms, sea level rise, and other consequences of climate change.

Nature-based solutions, such as stream and shoreline restoration, often provide a multi-benefit and cost-effective response to climate vulnerabilities. The connection between natural resources and climate resilience is acknowledged in recent DoD guidance and policies that expand the REPI program authority to include projects that enhance installation resilience and describe how Natural Resource Managers must update INRMPs to address the climate resilience of the natural resources in their care.

For coastal installations in particular, CUPs are also a valuable tool to identify strategies, projects, and funding opportunities to build climate resilience for military installations and the surrounding community. For example,

in Hampton Roads, VA, the Norfolk-Virginia Beach JLUS recommends a suite of projects to provide continued access and operations during flooding events and hurricanes.

## Sharing the Skies

Tenant operations at DoD installations co-exist with local wildlife, but interactions between military operations and local bird populations can create Bird Aircraft Strike Hazards (BASH) near active airfields. Monitoring bird populations can help these installations balance successful population growth of threatened species with the potential hazard reduction to aircraft operations.

DoD partners with the Monitoring Avian Productivity and Survivorship (MAPS) network in its effort to protect bird habitat and migration paths. DoD supports over 20% of the 500 MAPS stations in the United States, including two stations at NSF Indian Head. This program utilizes landscape modeling and analysis techniques to provide accurate data on habitat conditions. This data can also help inform BASH mitigation efforts.

## Protecting Bird Populations through Monitoring Efforts

**NSF Indian Head (MD)** maintains two MAPS stations to monitor habitat conditions of migratory bird species of concern in regions of concentrated high-quality breeding habitat. In FY2020, researchers from the College of William & Mary conducted eight netting events to capture, identify, band, and collect data on listed bird species to assess population trends. The data collected is used to assess population trends and to evaluate the habitat health. It is also used to avoid negative impacts from bird populations to military operations and vice versa.



*Three species monitored under MAPS. Left to right: hooded warbler; scarlet tanager; indigo bunting.*

PHOTOS BY SETH BERRY, NSA SOUTH POTOMAC INDIAN HEAD.



# DoD 2020-2021 Milestone Progress

EO13508 directs federal agencies to define milestones that specify federal efforts to support the jurisdictions in meeting their water quality goals. The federal water quality two-year milestones are developed in coordination with the U.S. Environmental Protection Agency (EPA) and other federal agencies. EPA evaluates DoD progress toward its milestones and provides recommendations for improvements. The status of the FY2020-2021 milestones for DoD are as follows:

DoD Milestone	Status
Report BMP implementation progress to EPA and Chesapeake Bay jurisdictions annually.	<b>On track.</b> DoD reported BMPs implemented through SY2020 to the jurisdictions in October 2020. The DoD CBP continues to coordinate with jurisdictions and installations to improve the accuracy of the reported BMP record.
Develop BMP Crediting Reports in VA, MD, DC, and PA. Conduct DoD CBP TMDL Progress Evaluations in VA, MD, DC, and PA.	<b>On track.</b> In FY2020, the DoD CBP finalized BMP Crediting Reports that assessed how BMPs were credited for 2019 progress. FY2021 Crediting Report development is underway. The DoD CBP also developed DoD-specific Chesapeake Assessment Scenario Tool (CAST) scenarios to assess 2019 progress.
Submit 2020-2021 planned BMP implementation in the CAST for VA, MD, DC, and PA.	<b>Complete.</b> DoD shared 2020-2021 planned BMP implementation scenarios with the jurisdictions and EPA in CAST in early 2020.
Determine the feasibility of and develop four to five installation scale Chesapeake Bay status reports that would track BMP implementation progress toward the 2025 DoD Phase III WIP Fill Gap and 2025 DoD federal planning goals.	<b>On track.</b> In FY2020, the DoD CBP identified five installations to participate in the pilot program and started development of the status reports.
Investigate the DoD agricultural outlease program for opportunities to support jurisdictions' Phase III WIPs and the 2025 WIP Outcome.	<b>On track.</b> DoD owns and leases 5,657 acres of agricultural land at six installations in the Chesapeake Bay watershed. The DoD CBP has collected data from some of these installations to assess opportunities for additional pollution reductions. Additional coordination is underway.
Work with installation staff to pilot the identification and documentation of INRMP projects with a water quality co-benefit.	<b>On track.</b> DoD provided an in-depth review of one installation's INRMP to identify projects with water quality co-benefits and other considerations of co-benefits in the plan's project prioritization. A request for additional volunteers was made to installations in October 2020.

*“DoD has a sustained record of leadership and support to the Partnership in planning and implementing management practices to reduce pollutants from DoD facilities in the Chesapeake watershed. DoD demonstrates a unique level of completeness and diligence through BMP Crediting Reports and by providing information to jurisdictions to identify and resolve data issues, crediting processes, etc. and to maximize credit for both parties. DoD is unique in that it consistently submits planning scenarios to document Numeric Water Quality Milestones. DoD has been a leader in sharing its annual datacalls and progress evaluations with federal agencies and they have been used as a model for other federal agencies to improve tracking and accountability.”*

-Greg Allen, EPA Chesapeake Bay Program Office



# Partnership Coordination to Collaborate and Share Information



Collaboration and information sharing are essential to DoD's success in restoring the Chesapeake Bay. Since DoD installations are located in every corner of the watershed, virtual meetings have been a part of doing business for many years. In FY2020, however, all outreach and collaboration shifted to virtual environments in the following ways:

- ✓ The Chesapeake Bay Action Team (CBAT) continued to meet quarterly to share updates, success stories, and information about Chesapeake Bay watershed restoration and DoD's roles and responsibilities in the Partnership's effort.
- ✓ The DoD CBP maintained its involvement in workgroups, goal implementation teams, and other stakeholder groups within the Partnership and expanded its participation in FY2020 to include the Toxic Contaminants Workgroup, the BMP Verification Ad-hoc Action Team, and the Communications Workgroup.
- ✓ Biannual partnership meetings conducted between the state environmental agency, EPA, and DoD in MD, VA, and PA shifted seamlessly from in-person to virtual meetings.
- ✓ DoD public outreach programs found creative methods to adapt their typical strategies to virtual and socially distanced formats, including e-mails, educational videos, virtual meetings, and drive-by outreach events.

The DoD also expanded its communication and outreach to installation staff and leadership in FY2020 to provide greater awareness, control, and accountability with regard to the DoD CBP. These new tools empower installations in support of their commitment to manage natural resources held in the Public Trust.

- ✓ As of FY2020, each edition of the DoD CBP quarterly Journal includes a "Commanders' Corner" feature, highlighting pertinent information to enhance awareness and engagement by installation senior leadership.
- ✓ The DoD CBP Fill Gap strategy demonstrates how DoD can achieve its federal planning goals for the Chesapeake Bay TMDL in each jurisdiction. In FY2020, the DoD CBP distributed the estimated contribution of individual installations to the Fill Gap strategy, measured by the implementation of strategic BMPs.



Commanders' Corner features in the FY2020 DoD CBP Journals.



PHOTO BY DONNA HAYNES, JBLE-E.

JBLE-Eustis held a socially distanced Trunk or Treat event where educational materials promoting stormwater management and recycling practices were distributed with Halloween candy.



# Looking Ahead

In FY2021, the DoD CBP will build on the work completed in FY2020 to support its two-year milestone commitments with the following actions:

- Coordinate with jurisdiction and installation staff in Virginia and Washington, D.C. to address BMP reporting and crediting issues identified by the BMP Crediting Reports.
- Identify additional volunteer installations to coordinate with during INRMP development and update. The DoD CBP will help the installation identify water quality co-benefits of proposed projects.
- Collect data on the potential for TMDL creditable water quality BMPs on agricultural land leased out by DoD installations.
- Consider expansion of the installation CBP status report initiative to other installations based on feedback received from the pilot program.
- Provide installations with the training and skills to build awareness, manage their installation-level stewardship, and track their contributions to the Chesapeake Bay restoration and DoD's "Fill Gap" strategy.



PHOTO BY CRAIG KINDLIN, LEAD.



PHOTO BY SEAMAN IMANI DANIELS.



PHOTO BY CRAIG KINDLIN, LEAD.



PHOTO BY MCB QUANTICO.



Looking ahead, the DoD CBP and DoD installations in the Chesapeake Bay watershed will continue building upon the tremendous progress and achievements of FY2020. The DoD will continue to advance efforts to support the Chesapeake Bay and the commitments described in EO13508, and will continue to fulfill its regulatory requirements. Specific efforts in pursuit of these goals include:

**Support Funding of Stormwater BMP Maintenance.** The DoD CBP and the CBAT have advocated for a mechanism to request funding for stormwater BMP maintenance through DoD's Facilities Sustainment Model by designating Facility (FAC) codes for stormwater BMPs. This effort will help DoD installations secure funding to ensure stormwater BMPs continue to function as designed and provide credit toward DoD's compliance objectives.

**Promote Collaboration through Existing DoD Land Conservation Programs.** The DoD CBP will promote collaboration between installations with REPI programs as well as those within areas in designated Sentinel Landscapes to protect land, promote natural resources, and build climate resilience. For example, the proposed "Virginia Security Corridor" designation will provide the foundation for enhanced attention, collaboration, and funding to protect and enhance military training and testing capabilities while also protecting wildlife habitat, water quality, working lands and rural landscapes, and providing for climate resilience and enhanced recreation opportunities. Both of these existing programs further the goals and outcomes of the Chesapeake Bay Watershed Agreement and EO13508.

**Strengthen Environmental Partnerships.** The DoD CBP will continue to facilitate biannual partnership meetings with the EPA and state agencies in MD, PA, and VA to build cross-agency understanding and share information and resources to resolve conflicts and find solutions to environmental challenges in those states.

**Build Resilience.** In addition to DoD-led programs and initiatives, the DoD CBP and installations will participate in state and regional initiatives to build climate resilience, including the development of a Virginia Coastal Resilience Master Plan and development of CUPs across the Chesapeake Bay watershed.

In addition to the above efforts, DoD CBP will continue to seek new partnerships and creative strategies to support the goals and outcomes of EO13508, the Chesapeake Bay Watershed Agreement, and the Chesapeake Bay TMDL. Together, with our installation stewards, jurisdictional and federal partners, and citizens, we strive to restore the Chesapeake Bay watershed into a rich, productive landscape that supports a vibrant economy where the military mission coexists with resilient natural resources for generations to come.



PHOTO BY PHOTOGRAPHER'S MATE 1ST CLASS MARTIN MA DDOCK.



# DoD Chesapeake Bay Program

## Fiscal Year 2020 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.