



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

Naval Support Facility Indian Head Beach Clean-up

By William Fabey, Naval Support Facility Indian Head



Volunteers participate in trash cleanup at NSF Indian Head during Earth Day 2024.

Naval Support Facility (NSF) Indian Head, MD held three events, on April 4th, 5th, and 6th in support of Earth Day and the Potomac River Watershed clean-up sponsored by the Alice Ferguson Foundation. Each of the events focused on a different area of the installation's shoreline. By spreading the events across separate areas and on separate days, NSF Indian Head was able to increase participation and accomplish a good deed for the environment. These events also assist in meeting requirements for the installation's National Pollutant Discharge Elimination System General Permit for discharges from State and Federal Small Municipal Separate Storm Sewer System (MS4) Permit. In the Saturday morning event (April 6th), friends and family joined military and civilian base employees to help with the effort. For 2024, a total of 54 volunteers collected ~1080 lbs. of trash. Trash items included tires, metal debris, Styrofoam, and, of course, an abundance of plastic bottles. Particular items of interest this year included numerous tennis balls.



Volunteers participate in trash cleanup at NSF Indian Head during Earth Day 2024.

IN THIS ISSUE

Success Story: Earth Day and Arbor Day Events around the Watershed.....	2-4
Using Ecosystem Services to Increase Progress and Quantify Benefits: Enhancing Chesapeake Bay Program Partnership Outcomes.....	5-6
Success Story: Engaging in Citizen Stewardship, Fort Walker, Virginia.....	7
Earth Day and Clean Up Events Photo Collage.....	8



Success Stories: Earth Day and Arbor Day Events around the Watershed!

By Angela S. Jones, DoD CBP

Check out some of the installations within the watershed engaging the Chesapeake Bay community during various Earth Day and Arbor Day events!

IMAGE PROVIDED BY JEB LITTLE CREEK
- FORT STORY PAO



Joint Expeditionary Base (JEB) Little Creek – Fort Story, Virginia

On April 24, 2024, Earth Day celebrations were held at the Little Creek and Fort Story Child Development Centers (CDCs). The Public Works Department (PWD) Environmental (EV) staff gave a presentation on sea turtles and keeping our waterways clean. Along with PWD EV and CDC staff the event was also attended by U.S. Fleet Forces Command, the Installation Environmental Program Director and the Installation Command Master Chief. There were 25 students in attendance at the Little Creek CDC and 19 students were in attendance at the Fort Story CDC.

NSF Dahlgren Beach Clean-Up and Tree Planting

On April 22, 2024, Environmental staff at NSF Dahlgren teamed up with Dahlgren School teacher Beth Hankins and her fourth and fifth grade students to collect trash and plant trees in celebration of Earth Day. Together, they collected over seven bags of trash from areas around the school, library, gym, and the wastewater treatment plant, preventing approximately 220 pounds of trash from entering Upper Machodoc Creek and the Potomac River. The group planted two trees behind the school, one black oak and one sweet bay magnolia, with Command Master Chief, Phillip Croshaw and Naval Support Activity South Potomac (NSASP) Environmental Program Director, Ken Robitaille in attendance.



IMAGE PROVIDED BY ASHLEIGH BENSON, NSF
DAHLGREN

Dahlgren School students planting one of the trees with assistance from Master Chief Phillip Croshaw.

IMAGES PROVIDED BY ABIGAIL ROSS, NSA
HAMPTON ROADS



NSA Hampton Roads, Virginia – Earth Day Clean-Up

On April 22, 2024, NSA Hampton Roads PWD and volunteers helped to clean up the Elizabeth River shoreline at Naval Medical Center Portsmouth. Efforts were focused on the northern shore of the medical campus and volunteers managed to collect 14 trash bags full of litter to equal over 350 pounds.





Norfolk Naval Shipyard (NNSY), Virginia – Earth Day Event

On April 25, 2024, NNSY hosted their annual Earth Day celebration. The event promoted the importance of being good stewards to our environment through recycling, energy and natural resource conservation, and water quality improvement activities. The event was a success with 300+ attendees including shipyard employees, senior NAVFAC and Naval Sea Systems Command (NAVSEA) leadership and the Deputy Assistant Secretary of the Navy, Environment and Mission Readiness. External partners such as Dominion Energy, HRSD, and the Norfolk Beekeepers Association had booths available along with the 18 other organizations and DoD commands.

Naval Air Station Oceana (NASO), Virginia – Arbor Day and Month of the Military Child Celebration

On April 30, 2024, NASO celebrated Arbor Day and Month of the Military Child. Children from the Navy Child & Youth Program and the CDC helped the Commanding Officer, Command Master Chief, US Navy Fleet Forces' Stewie the Sea Turtle, a Virginia Department of Forestry Forester and Navy Natural Resources staff plant a ceremonial native Eastern red bud (*Cercis canadensis*) tree. The NASO celebration had 47 children and 22 adults in attendance. NASO received a Tree City USA award for the 30th consecutive year due to tree stewardship initiatives on the installation. Dam Neck Annex (DNA) also held a similar event the same day with the Executive Officer where the installation also received a Tree City Award for the 24th consecutive year. Nine children and 14 adults were in attendance of DNA's celebration.



IMAGE PROVIDED BY ANDREA ARREDONDO, NAS OCEANA

Fort Gregg-Adams, Virginia - Earth Day Clean-Up 2024

The Fort Gregg-Adams community celebrated Earth Day on April 22, 2024, with a very successful clean-up of an environmentally sensitive area. Over 70 Soldiers, Marines, and local community members volunteered to assist Fort Gregg-Adams Directorate of Public Work's Environmental Management Division in a clean-up project to restore valuable wetland habitat on the Range Complex.

A wetland area was chosen for the cleanup because it is the primary habitat of the Spotted Turtle, a sensitive and protected turtle species found on the installation. Spotted Turtle surveys conducted in the area since 2019 have shown declining turtle health which is believed to be attributed to the significant pollution that flows into the wetland from an adjacent rail line. After a brief introduction to the project and a meet and greet with a Spotted Turtle Ambassador named Spot, volunteers spread out across 38 acres of wetlands and collected 2,254 pounds of trash. This included over 100 water bottles, 29 tires, 35 steel paint cans, 1 tricycle, 1 kitchen sink, and various other debris. Local businesses contributed to the success of this event through their generous donation of lunch for volunteers and acceptance of certain trash items that could not be recycled on base such as tires.

Upon evaluation of the wetland after the cleanup occurred, significant improvements were observed in the turtle population and the wetland habitat. The increase in turtle movement, both Spotted Turtles and other turtle species, was one of the most notable improvements. Areas that were once filled with trash, were now cleared, and allowed turtles to move in and swim freely. An increase in the presence of other aquatic species, such as frogs and salamanders, was also observed. This event was a true success in that it allowed community members to form a deeper connection to nature and aided in the protection of multiple amphibian and reptile species and their habitat.



IMAGES PROVIDED BY ERIKA GILLESPIE, GARRISON PAO





Naval Weapon Station Yorktown, Virginia – Earth Day Collaboration with Morale Welfare and Recreation’s (MWR) Sexual Assault Prevention and Response (SAPR) Run

The PWD EV staff collaborated with MWR by providing three booths to educate the participants and spectators of the MWR SAPR 5k Run on April 26, 2024. EV also partnered with Hampton Roads Sanitation District (HRSD) staff who provided water conservation materials at a booth in support of the Earth Day/5k Run event. Military Natural Resources and Cultural Resources information materials, including trivia, were also available.

Arlington National Cemetery (ANC), Virginia- Earth Day Tour



On April 19, 2024, ANC Environmental Specialist Scott Lonesome and Horticulturalist Kelly Wilson led a tour of the cemetery’s Memorial Arboretum for Earth Day. Lonesome spoke about the Municipal Separate Storm Sewer System (MS4) permit and its importance for operations at ANC. He also discussed how best management practices (BMPs) play an important role throughout the cemetery. Lonesome emphasized how some best management practices can be beneficial at the neighborhood or home level, including rain gardens, bioretention ponds, rain barrels and permeable pavers. The tour showcased one of ANC’s well-established rain gardens as an example of how ANC operates and manages BMPs.

Naval Support Activity (NSA) – Bethesda, Maryland



The environmental team hosted an Earth Day Environmental Information Fair on April 23, 2024. The event provided information regarding local environmental resources including facility environmental activities for base personnel and patients. Participating groups included: Naval Facilities Engineering Systems Command (NAVFAC) EV, Montgomery County Recycling, Montgomery County Master Gardeners, the National Parks Service, and the Washington Headquarters Services Transportation Management Program Office.

Naval Station Norfolk, Virginia – Navy Exchange Earth Day Display

On April 20, 2024, the PWD EV Water Program Manager Mark Sauer and Natural Resources Manager and Pest Management Coordinator James Micalizzi set up an Earth Day display at the Naval Station Norfolk Navy Exchange. Staff engaged with Exchange customers and had stormwater, DoD Chesapeake Bay Program (CBP), and cultural and natural resources handouts available.



Using Ecosystem Services to Increase Progress and Quantify Benefits: Enhancing Chesapeake Bay Program Partnership Outcomes

By Aditi Kumar, Brown and Caldwell

Ecosystem services (ES) refer to the benefits that ecosystems provide for human well-being. Natural resources provide food, support clean air to breathe and clean water to drink; they provide for recreational opportunities, and support mental health. Typically, investments in Chesapeake Bay restoration are designed to improve water quality, given the legal requirements of the Clean Water Act. Similarly, the Department of Defense (DoD) invests approximately 50-75% of its Chesapeake Bay Program-related funding to comply with Executive Order (EO) 13508 in clean water projects. However, a narrow focus on water quality can result in the implementation of practices and policies that maximize nutrient and sediment reductions at the expense of feasible alternatives that offer greater ES or multiple benefits to living resources and people. To address this concern, the Chesapeake Bay Program Partnership's (Partnership) Scientific and Technical Advisory Committee (STAC) held a workshop in three sessions between March 2023 and June 2023, to gather input and develop a framework to identify ways to embed ES considerations in holistic project selection decision-making¹. As DoD installations commit significant resources to meet their 2025 Total Maximum Daily Load (TMDL) targets, they have an opportunity to strategically pursue projects that meet multiple installation objectives that also provide valuable ecosystem service to military personnel, civilian employees, their families and the people in surrounding defense communities.

Background and Urgency

The Bay Agreement outlines a total of 10 goals and 31 outcomes, but only two of these directly address water quality. Despite this, the regulatory requirements of the Chesapeake Bay TMDL places significant emphasis on reducing nitrogen, phosphorus, and sediment. Stakeholders responsible for implementing state Watershed Implementation Plans (WIPs) and local decision-makers often rely on the Chesapeake Assessment Scenario Tool (CAST) to select cost-effective Best Management Practices (BMPs) that align with their water quality regulatory obligations. However, cost is only one factor to consider; it is in the best interest of DoD water quality, natural resource, and climate adaptation managers to consider meeting multiple installation objectives with each project. The Partnership has a variety of tools to support the selection of water quality projects. Integrating ES benefits into these tools can encourage stakeholders to consider and compare the multiple benefits of projects as part of their decision-making process.

While such initiatives have already begun, more work is needed to allow for credible site-specific accounting of co-benefits generated by nutrient and sediment reduction projects or the total benefits of restoration actions. Adding urgency to this task is the Biden Administration's February 2024 guidance to "advance and strengthen" accounting for ES in government decision-making². The guidance directs agencies to be thorough in accounting for the ES benefits and harms of proposed actions but also asks agencies to develop their own specific methods to monetize, quantify, or describe benefits.

Quantification of Ecosystem Services Benefits

One way to accelerate progress towards the full suite of Bay Agreement goals is by showing how Bay restoration and conservation actions can align with the local headwater communities' priorities. Based on research conducted by the Environmental Protection Agency (EPA) Regional Sustainability and Environmental Sciences Program, specific BMPs were identified that relate to 1) habitat restoration or creation, 2) Watershed Agreement goals lagging in implementation, and 3) issues in upstream or headwater communities. Selected BMPs included impervious surface reduction, urban forest buffers, urban forest planting, urban tree planting, wetland creation, and wetland restoration. The study also identified the ecosystem services provided by these BMPs as illustrated in **Figure 1**.

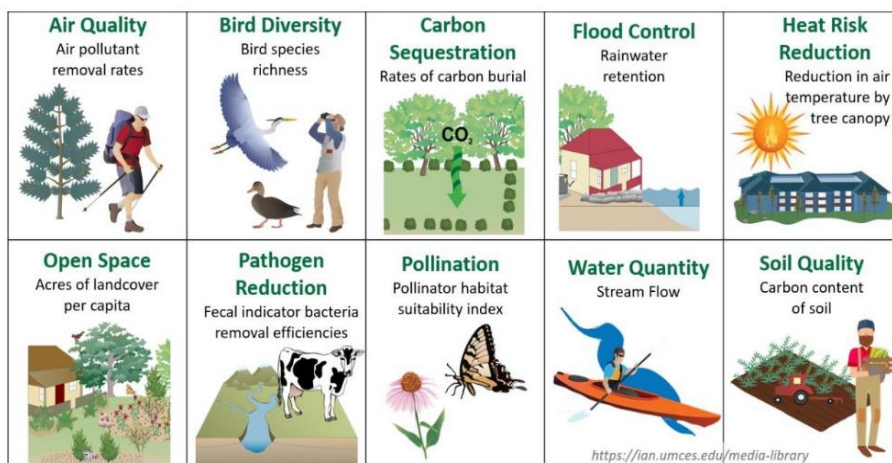


Figure 1: Ecosystem services (ES) considered in analysis of restoration related BMPs¹



Ultimately, it was established in the study that each of the selected BMPs would result in new acres of landcover based on the Bay Conservancy 2013-2014 landcover types assigned in CAST. **Figure 2** shows the connections between BMPs and benefits through ES with the Watershed Agreement outcomes. This quantification can help DoD installations understand co-benefits of different BMPs to participate in restoration efforts that address their local priorities and work towards the overall goals of the Bay Agreement at the same time.

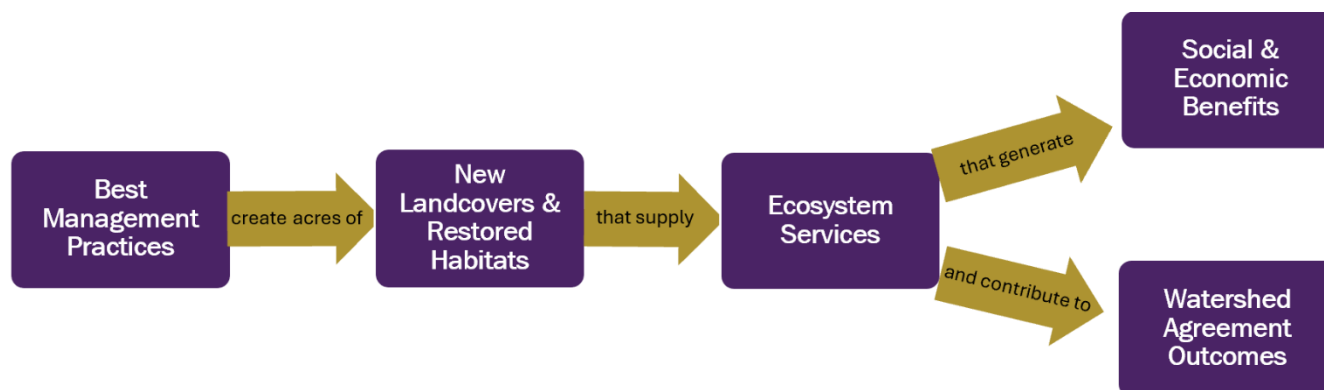


Figure 2: Connections between selected BMPs and benefits through ES with the Watershed Agreement outcomes¹

Model-based Tracking and Integrated Valuation of Ecosystem Services (MoTIVES) Research

There is ongoing MoTIVES research being conducted at Fort Belvoir, VA that aims to assess, enhance, and communicate the monetary value of ES delivered to neighboring communities. This research was piloted at the Eglin Air Force Base, FL, where it demonstrated proof of concept that current installation management provides approximately \$110 million in ES to surrounding defense communities per year, \$40 million more than a scenario where no base was present, and \$90 million more than a scenario where no base management was occurring. The MoTIVES model is being designed to provide similar data on installation, management-driven ecosystem services provided to the public.

Several of DoD's ongoing watershed protection and restoration initiatives achieve multiple goals, while enhancing ES and military readiness. Implementation of on-base Integrated Natural Resource Management Plans safeguard the abundant natural resources under the DoD's care and these activities provide a plethora of ES that have been documented to benefit adjacent defense communities. DoD land conservation efforts, such as the Readiness and Environmental Protection Integration (REPI) program and Sentinel Landscapes Partnership programs, aim to strengthen military readiness while conserving defense community natural resources, supporting agricultural and forestry economies, enhancing outdoor recreation, and increasing resilience to climate change.

By integrating ES into selection of BMPs to meet TMDL goals, installations can achieve greater and more lasting progress toward Chesapeake Bay Agreement goals and outcomes (especially those whose progress is lagging). These efforts create an environment supporting mission readiness while effectively meeting multiple DoD goals despite funding and resource constraints.

2024 STAC Report Recommendations and DoD CBP and Installation Applications

- Water Quality, Natural Resources, and Climate Resilience Subject Matter Experts can work more closely to choose projects that meet multiple objectives to support the integration of ES throughout the Chesapeake Bay Program.
- Develop a framework for quantifying the ecosystem service impacts of BMPs.
- Identify and follow pathways to improve institutional structures and supporting policies to better integrate ecosystem services into the next phase of the Chesapeake Bay Program beyond 2025.

References

¹Using Ecosystem Services to Increase Progress Toward and Quantify the Benefits of Multiple CBP Outcomes. STAC Workshop Report 2024. https://www.chesapeake.org/stac/wp-content/uploads/2024/02/FINAL_Report_Ecosystem-Services_24_003.pdf

²GUIDANCE FOR ASSESSING CHANGES IN ENVIRONMENTAL AND ECOSYSTEM SERVICES IN BENEFIT-COST ANALYSIS. Office of Information and Regulatory Affairs. Office of Management and Budget. <https://www.whitehouse.gov/wp-content/uploads/2024/02/ESGuidance.pdf>



Success Story: Engaging in Citizen Stewardship, Fort Walker, Virginia

By Amanda Thompson, Fort Walker

The Fort Walker Environmental Team and Natural Resources Division celebrated Earth Day the entire month of April with three outreach events for environmental stewardship. These events served as part of Fort Walker's continued community engagement mission with the public and highlighted the importance of natural resource management on and off the installation.

For the first event, Fort Walker Environmental joined the Bowling Green Elementary's Community Day, featuring small business owners, community organizations, and local families. Environmental staff taught the kids and their families about the installation's Environmental Department and local plant and animal species.

The second event, "Earth Day on the Rappahannock", held by Fredericksburg Parks and Recreation saw thousands of visitors gather at Old Mill Park. Since 2003, the mission of the Earth Day Festival has been to provide an enjoyable and engaging family-friendly event devoted to environmental awareness and stewardship.

This "Certified Green" event was filled with interactive activities, live music and shows, food vendors, and much more. The Fort Walker Environmental Team set up an interactive booth of furs, antlers, preserved insects, turtle shells, and many more educational items, creating the display to educate visitors about species found on the base, spread awareness on the environmental work at the installation, and inform the public on environmental stewardship activities conducted by the Army. At the event, Fredericksburg Parks and Recreation presented three awards; of the 74 organizations with displays, Fort Walker took home the award for "Best Hands-On Display".

The final event, a two-day event held by Fort Walker in honor of Earth Day, hosted 200+ students from Caroline High School, local environmental exhibitors, military unit displays, and several teaching stations. At these stations, Fort Walker Environmental staff taught the students about protecting the installation's environmental resources and staff's everyday environmental work. Students were immersed in the world of this Army environmental work with first-hand experience - tree coring and identifying trees with the Forestry Department, holding native fish species, and learning about endangered Virginia wildlife with the Fisheries & Wildlife

Department, digging with soil augers and identifying wetland plants with the Water Quality Program, and excavating at an archaeological site with the Cultural Resources Department.

The students also engaged with the local environmental exhibitors with whom Fort Walker partnered - Rappahannock Sierra Club, Friends of the Rappahannock, Rappahannock Electric Cooperative, and American Water. These organizations provided students with resources to get involved and contribute to the preservation and protection of their community and local environment. Regarding the events, Fort Walker Environmental Division Chief Gef Fisher said, "I am very proud to see the Environmental Division team representing the Army and Fort Walker. Events like these emphasize the importance of integrating hands-on learning for the future of not just Army Environmental, but environmental management overall".



Fort Walker Environmental Team behind their Earth Day Booth

IMAGE PROVIDED BY FORT WALKER, ENVIRONMENTAL STAFF



Claire Wilmore and Robin Didlake with Friends of the Rappahannock describe how oysters naturally filter water.

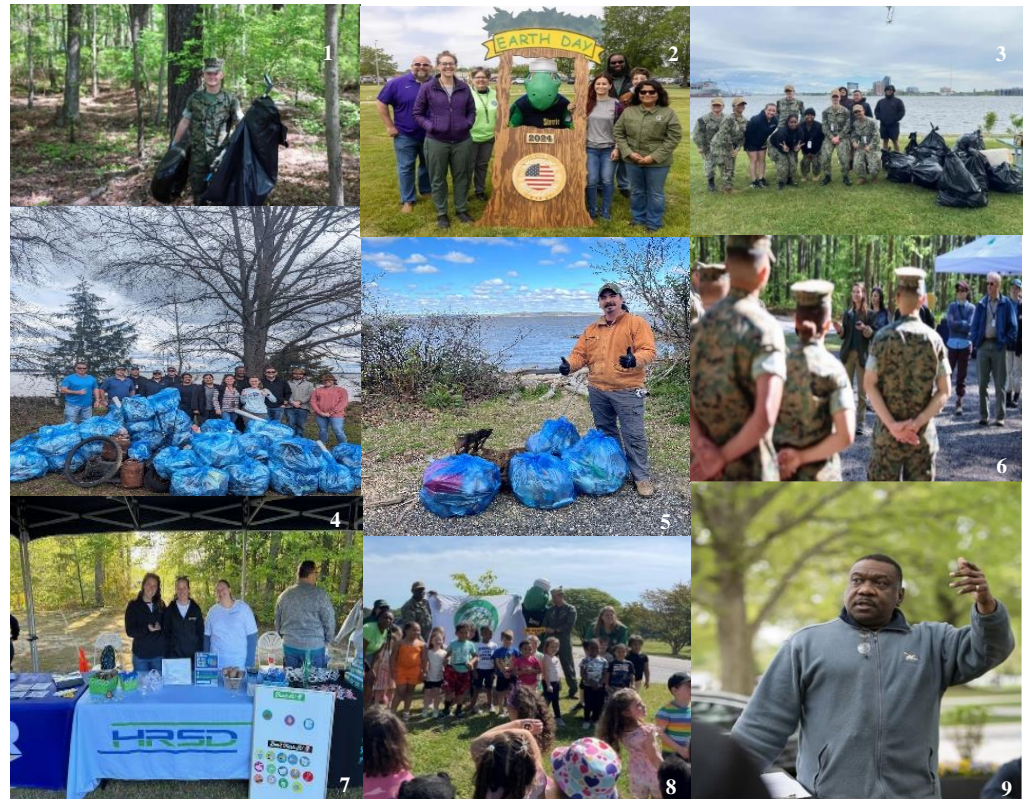
IMAGE PROVIDED BY CHRISTOPHER HALL, FORT WALKER



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Images Provided by:

1. Shannon Scully, Fort Gregg-Adams
2. Norfolk Naval Shipyard PAO
3. Abigail Ross, NSA Hampton Roads
4. William Fabey, NSA South Potomac, NSF Indian Head
5. William Fabey, NSA South Potomac, NSF Indian Head
6. Shannon Scully, Fort Gregg-Adams
7. Jeff Kissler, NWS Yorktown
8. Andrea Arredondo, NAS Oceana
9. Elizabeth Fraser, Arlington National Cemetery



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