Summer 2017

DoD Chesapeake Bay Program Journal

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

A Summer of Stewardship

By Sarah Diebel, DoD Chesapeake Bay Program Coordinator

The arrival of summer means more opportunities to spend time outdoors. This is also the time for Earth Day, Clean the Bay Day—our region's annual effort to pick up trash in and around local waterways—and other volunteer and educational events. Each year, Department of Defense (DoD) installations lead by example by hosting or participating in a variety of stewardship and educational activities that engage service members, veterans, employees, and their families to keep military installations beautiful, clean, and mission-ready. This issue focuses on some of the ways that DoD installations are lending a hand to protect and restore the Chesapeake Bay.

Partners in Protecting our Environment
for Today and Tomorrow

265 outreach events in 2016

Part of the DoD Chesapeake Bay Program's (DoD CBP) mission is to foster and expand environmental stewardship opportunities for installations to help achieve healthy waterways in the Chesapeake Bay. The DoD CBP 2016-2017 Work Plan outlines ways the DoD will increase and promote the number of volunteer-based events. These efforts support the 2014 Chesapeake Bay Agreement, which calls for a greater number of trained and mobilized volunteers who can apply their knowledge and skills to improve their local watershed.

Through our annual data collection, I repeatedly see installations demonstrate their commitment to this goal. In 2016, installations in the Bay watershed hosted a total of 265 stewardship events that attracted nearly 34,000 volunteers. Volunteers picked up debris; planted trees; and learned about important environmental issues such as invasive species and habitat preservation.

Work is currently underway by the CBP Stewardship Goal Implementation Team (GIT) to develop ways to measure change in public attitudes, behavior, and volunteerism. This will provide insight for stakeholders, including DoD installation staff, to craft strategic education and outreach programs tailored to their community. While our outreach events and volunteer numbers continue to increase, there remains a need to identify ways to engage personnel, keeping in mind the transient nature of our military community. The findings of a 2016 pilot study—discussed in this issue—are a snapshot of the results of a larger baseline indicator survey, which was conducted in the spring of 2017. The results of that survey were released by the CBP Stewardship GIT in early June, and the data and results will be explored in greater detail over the next few months.

This issue also highlights some of the great events and stewardship activities hosted by installations around the region. The DoD CBP would like to thank the installations and individuals that contributed information and content in this journal, including:

- Ronald Holcomb, Joint Base Langley-Eustis
- John Allen and Jillian Dunnam, Fort Lee
- Olivia Mills and Jason Applegate, Fort A.P. Hill
- Seth Berry, Naval Support Facility Indian Head
- Mariah Haddenham and Rachel McAnallen, Joint Base Andrews
- John Leader, Ph.D., Aberdeen Proving Ground
- Lindsay Boughton, Camp Peary

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Empowering Our Communities with Environmental Awareness, One Event at a Time

By Ronald Holcomb, Joint Base Langley-Eustis; John Allen and Jillian Dunnam, Fort Lee; and Olivia Mills and Jason Applegate, Fort A.P. Hill

Restoring and protecting the Chesapeake Bay depends upon the participation of citizens throughout the watershed, increasing public knowledge on how to make a difference, and instilling in all area residents a personal investment in the Bay's health. Community events like those held this spring at Fort A.P. Hill, Fort Lee, and Joint Base Langley-Eustis (JBLE) are doing just that, one event at a time.

Fort A.P. Hill welcomed more than 1,700 visitors from 11 local schools to participate in the installation's largest ever Earth Day celebration on April 27th. The Earth Day event was supported by more than 60 public and private entities that volunteered their time to exhibit educational displays and engage local youth on all aspects of natural resources and environmental management.

This popular annual event is the installation's premier means to engage the community on environmental awareness and conservation, while promoting sustainable military land management. Throughout the day, students were exposed to a variety of natural resources and wildlife conservation organizations, outdoor recreation clubs, local sustainable farms, historic societies, and law enforcement and military units. Military tenants provided hands-on perspectives about why environmental stewardship and management is important to maintain the quality lands needed to train the nation's military forces. Exhibitors presented information on oyster restoration and the importance of water quality, as well as pollinator conservation, which is an emerging concern in the Chesapeake Bay watershed and nationwide.

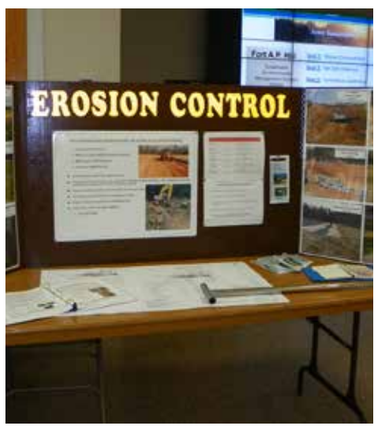
Breaking from traditional Earth Day celebrations, Fort Lee partnered with Friends of the Lower Appomattox River (FOLAR) for an off-post event in Petersburg, Virginia. To reach a greater number of residents who live, work, and play in the communities around the installation, Fort Lee's Environmental Management Division (EMD) co-sponsored FOLAR's third annual Riverfest along the banks of the scenic and historic Appomattox River.

FOLAR, a local non-profit, brings together volunteers and stakeholders from the Tri-Cities area to improve parks, establish multi-use trails, increase river access, and protect special habitats from Lake Chesdin to Hopewell. These special projects are accomplished through public education awareness events, water quality programs, and community involvement meetings.

More than 1,100 citizens of all ages attended Riverfest, and more than twenty exhibitors participated, including conservation organizations, state and federal agencies, and local history experts. EMD specialists volunteered at the event to increase community awareness regarding U.S. Army Garrison Fort Lee's ongoing environmental stewardship and sustainability efforts.

For the event, Fort Lee staff built an obstacle course entirely from repurposed and recycled materials. Children who attempted the course were motivated and cheered on by Army civilians, active-duty soldiers, and citizen volunteers as they navigated low crawls, climbing walls, and balance beams. The final hurdle of the course challenged participants to sort through a pile of refuse and determine which items were recyclable and which were not. The goal was to demonstrate to our nation's future leaders what types of materials should not be purchased, since they have no useful life after their originally intended use and cannot be recycled or repurposed. Upon completion of the obstacle course, individuals were sworn into the "Green Army," pledging to care for the environment and recycle whenever they could.

Students and chaperones engaged with Fort A.P. Hill Army personnel at the Explosives Ordnance Division's bomb exhibit showcasing the need for sustainable training lands.



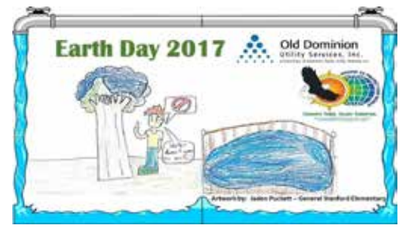
Educational displays helped event attendees understand the importance of stormwater and erosion and sediment control best management practices in protecting and restoring the Bay.

Fort Lee staff built an obstacle course entirely from repurposed and recycled materials for children to enjoy at the third annual Riverfest.

Fort Lee's Regional Archaeological Curation Facility also provided hands-on activities, including interactive artifact mending, pottery decorating, and demonstration of ground-penetrating radar as an example of a technology archaeologists use to gather information about objects buried in the ground. Participants had the opportunity to try reconstructing broken ceramic dishes, similar to how archaeologists piece together broken artifacts found on digs. The pottery decoration table also provided information on prehistoric ceramic decoration by having modern equivalents that allowed visitors to create designs in soft clay.

Fort Lee Family and Morale, Welfare, and Recreation staff brought kayaks, introducing many attendees to paddling for the first time. A shallow pond separated from the river offered the perfect training area.

In April, JBLE held a Command-sponsored, week-long Earth Day celebration to promote environmental stewardship throughout the Fort Eustis community. Activities included a group clean-up at Warwick Pier, shoreline sea grass plantings, and wildlife boat tours on the James River coastline. A stormwater runoff display was constructed to show elementary students how pollutants are carried from industrial operations, farming, and other activities to our waterways. The week culminated with Community Day at Balfour Beatty Residential Communities, which included a cookout and open house for residents and participants.



The winning design of JBLE's Earth Day celebration T-shirt design contest from General Stafford Elementary School in Newport News, Virginia.

JBLE Environmental Program Assistant Donna Haynes shows students at General Stafford Elementary School how pollutants are carried via stormwater runoff.

NSF Indian Head and Joint Base Andrews Lend a Hand for Earth Week

By Seth Berry, NSF Indian Head, and Senior Airman Mariah Haddenham, Joint Base Andrews

Several events in celebration of Earth Week and Arbor Day were held at Joint Base Andrews (JBA) and Naval Support Facility (NSF) Indian Head. The week-long observance, held April 17 through April 22, 2017, included tree-planting ceremonies, base clean-up, seed-planting, and more.

"Earth Week is extremely important and I think we must impress that upon our Airmen," said Tech Sgt. Cordarrell Hammond, 11th Contracting Squadron contracting specialist at JBA. "It is my hope that we extend these efforts beyond the seven days and take it upon ourselves personally to recycle and dispose of things properly, in an effort to take care of the only Earth we have."

Col. E. John Teichert, 11th Wing and JBA commander, received awards from the Maryland Department of Natural Resources for the base's contributions to tree services at JBA. The Tree City USA award was accepted by JBA for the 17th year, and the 'People Loving and Nurturing Trees' award was received for the first time.

To be recognized by Tree City USA each year, JBA must spend at least two dollars per capita on tree planting, maintenance, personnel, and supplies. The base must also have an arbor plan to decide where and what species of trees to plant, have an appointed tree board, conduct an annual tree planting, and have an Arbor Day Proclamation.

These programs encourage, support, and increase public awareness of the many benefits of urban forestry while providing education to improve current practices.

A day was set aside for a base clean-up, where members volunteered to walk the base and pick up any trash they found.

Col. John Teichert, 11th Wing and JBA commander, receives awards from Horace Henry, Maryland Department of Natural Resources representative, for the base's contributions to environmental services.

Lt. Col. Sarah Isbill, 811th Security Forces Squadron commander, volunteers to pick up trash during Earth Week on JBA.

Airmen pick up trash during Earth Week at JBA (left) and volunteer at a tree planting ceremony (right) in celebration of Earth Week and Arbor Day at JBA.

"We are fortunate to work on a military installation that resembles a park, thanks to the efforts of our personnel. Doing the daily things, like picking up trash when you see it, helps us continue to make JBA a wonderful place to work." - Col. E. John Teichert

Earth Week clean-up continued at NSF Indian Head, where dozens of volunteers participated in the 29th Annual Potomac River Watershed Clean-Up on several sites along the eastern shore of the Potomac River. Over three days in April, 36 volunteers from multiple organizations at the installation, including Naval Facilities Engineering Command (NAVFAC) Public Works Department, Marine Corps Chemical Biological Incident Response Force, and Naval Surface Warfare Center Indian Head Explosives Ordnance Disposal Technology Division, came out to remove 48 bags of trash, four tires, and approximately 2,450 pounds of bulk trash. On Earth Day, NSF Indian Head invited 68 children to join Captain Mary Feinberg, NSA South Potomac Commanding Officer, to plant two white oak trees in the front of the Child Development Center.

Cleanup volunteers from the NSF Indian Head community joined forces at the Dashiell Marina to remove more than 2,400 pounds of trash from the shores of the Potomac River.

29th Annual Clean the Bay Day

By Krista Parra, REC Program Coordinator

June 3, 2017

Each year, families, military installations, businesses, and other groups join forces to pick up litter along rivers, streams, and beaches throughout the Chesapeake Bay watershed. This tradition of stewardship continued this June when nearly 1,000 Navy active duty and civilian volunteers removed more than 12,000 pounds of trash in only 3 hours.

10 installations

965 volunteers

12,255 pounds of trash removed

COMMON ITEMS

Plastic bottles, cigarette butts, plastic wrappers, cans, snack bags

UNUSUAL ITEMS

Christmas tree, fish tank, bullet shells, car mats, plastic buckets, wheel, stuffed whale toy, Lucie ball

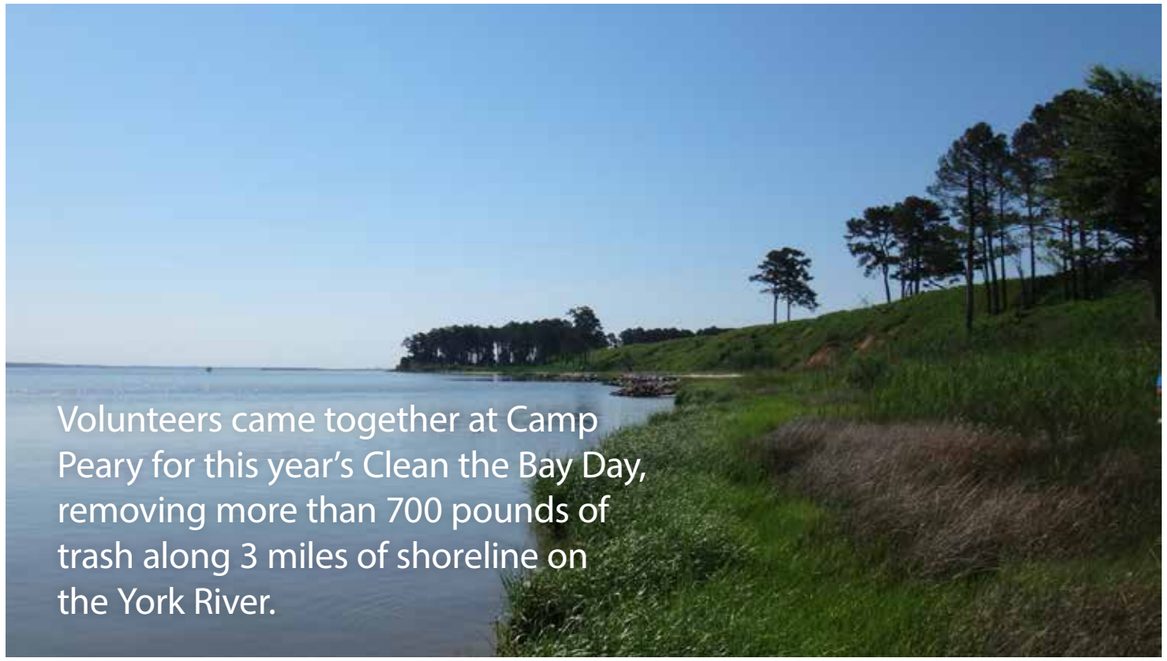
67.2 miles of shoreline cleaned

Cleaner Shoreline, Cleaner Water at Camp Peary

By Lindsay Boughton, Camp Peary

Dozens of volunteers gathered at Armed Forces Experimental Training Activity (AFETA) Camp Peary in Williamsburg, Virginia to lend a hand for this year's Clean the Bay Day. During the event, which was sponsored by the Environmental and Natural Resources Offices in partnership with the AFETA Camp Peary 4-H Club, 40 adults and children collected litter and debris from approximately 3 miles of shoreline along the York River. Together, the group removed about 750 pounds of items that had washed ashore, including drinking bottles, bleach bottles, buoys, cardboard boxes, crab pots, life vests, bushel baskets, and even an old tire. At the conclusion of the day's cleanup, a local historian displayed some of the fossils that have been discovered in exposed geologic formations near the York River shoreline.

A boat was used to haul away trash that volunteers collected on the beach along the York River.



Volunteers came together at Camp Peary for this year's Clean the Bay Day, removing more than 700 pounds of trash along 3 miles of shoreline on the York River.

Measuring Citizen Stewardship in the Chesapeake Bay

By Stephanie Smith, Brown and Caldwell

Protecting and restoring the Chesapeake Bay is a collaborative effort with a long list of partners, including the EPA, other federal agencies —including the Department of Defense (DoD)— state and local governments, watershed organizations and the public. Every individual within each organization plays an important role in this effort.

In 2016, DoD volunteers removed more than 48,000 pounds of trash from waterways and beaches during the region's annual Clean the Bay Day, and more than 33,000 citizens participated in a variety of DoD stewardship events that included Bay restoration outreach elements. These numbers demonstrate that the public's contribution can be significant. The question is: how do you measure the impact of these actions?

A pilot survey conducted across the Chesapeake Bay watershed sought to answer this question and others, and help local entities prioritize the most effective ways to engage the public in watershed restoration efforts.

What They Found

In the winter of 2016, volunteers with the Chesapeake Bay Foundation and OpinionWorks surveyed 2,000 residents across the seven states in the Chesapeake Bay watershed for the prevalence of certain stewardship behaviors, likelihood of future adoption of those behaviors, volunteer experience, keys to individual engagement, and other civic engagement behaviors.

The survey assessed 19 behaviors, such as scheduling routine septic system maintenance and installing at-home rain gardens, which positively impact Bay restoration, and detrimental behaviors like use of pesticides and herbicides and littering. The researchers then selected ten behaviors for further analysis.

Analysis of the distribution of stewardship behaviors across the watershed showed that the number of behaviors an individual can and will perform varies by geography, due to the availability of land, types of residences, and other factors. Across the Chesapeake Bay, an average of 3.73 behaviors are performed out of 7.38 potential behaviors. Therefore, the survey indicates that citizens perform only half of the behaviors that are available to them.

Small actions of individual citizens can add up to significant benefits for their communities and the watershed.

These results suggest that opportunities exist to expand stewardship in the Bay watershed. To analyze this possibility, the survey asked respondents to evaluate what practices they would be most likely to change. The behaviors reported to be most likely to change were: littering, washing grease down the drain, and blowing grass clippings onto hard surfaces. The behaviors least susceptible to change were: planting a tree, replacing areas of grassed lawns with with native plants, and creating a rain garden. Overall, respondents appeared to be more willing to make simple behavioral changes, but less likely to accept greater personal cost of Bay stewardship.

The results of the pilot study have been analyzed at the regional and state levels. However, the sample size is not yet sufficient to provide statistically significant results for local governments. This is a goal of the next phase of the project, which will expand the survey into more communities.

Why it Matters

The survey's data can be applied in many ways: to benchmark local efforts against other communities or the region, to track changes in behavior over time, to inform program development and direct limited resources through strategic behavior selection, and to develop custom outreach to target audiences.

The survey is open to the public and may be accessed from personal devices at www.baysurvey.org.

Picking up litter and pet waste, planting trees, and using rain barrels are desirable behaviors of citizen stewards of the Bay watershed. Survey results indicate that opportunities exist to expand these behaviors among the public in the Chesapeake Bay region.

- **Benchmark stewardship efforts.** Benchmarking local results against statewide or watershed-scale data can assess strengths and weaknesses of local programs and identify potential improvements.
- **Maximize limited resources.** The conceptual value or weight of a behavior is the product of the current level of adoption, the likelihood of future adoption, and the behavior's impact. When only one behavior can be chosen, the option with the highest weight is the best selection. Broader programs may include a range of behaviors including efforts that are currently less impactful but with a higher probability of being adopted in the future, in addition to those with a higher weight.
- **Select a target audience.** The survey included questions to segment the results by individual characteristics, including age, socioeconomic status, ethnicity, religious affiliation, and others. In the future, this information will provide an opportunity to tailor the message to the audience of an outreach campaign.

The survey provides a regional snapshot of how citizens behave and may offer valuable insight for those who would like to make the greatest impact through their stewardship programs, in pursuit of the outcomes identified in the 2014 Chesapeake Bay Agreement. Military installations, too, can find useful information in the survey's data and consider how it might inform public outreach efforts at their installations.

Celebrating a Century of Tree Stewardship in Maryland

By John Leader, Ph.D., Aberdeen Proving Ground

There was much to celebrate at Aberdeen Proving Ground's (APG) 2017 Arbor Day celebration on April 5th. APG's Forestry Program, which preserves APG's existing trees, improves the health of its existing forests with practical forest management, and prepares for the future by planting new trees, has in recent years enhanced 1,200 acres of forest and planted 3,400 trees.

APG was recently recognized with its 10th Tree City USA Growth Award and the prestigious Sterling Award from the National Arbor Day Foundation, an honor shared with only 11 communities in Maryland and no other Army facilities. APG also received the PLANT Green Award from the Maryland Department of Natural Resources Forest Service.

The Arbor Day celebration brought together members of the APG community to celebrate these efforts and APG's 100-year tradition of preserving and protecting its trees. The day included an award ceremony to honor APG's recent recognitions and honored one of the installation's oldest and most cherished trees: the ancient School Street Willow Oak, which was already a mature tree at the time of APG's founding in 1917, by planting a young Willow Oak meant to serve APG for the next 100 years.

APG natural resources managers have a long history of continually coordinating the natural infrastructure stewardship that supports and sustains the Army's testing and training mission every day. Working with partners from APG tenant organizations, U.S. Fish and Wildlife Service, and Maryland Department of Natural Resources, APG Directorate of Public Works personnel developed and coordinated an Integrated Natural Resources Management Plan (INRMP) as a roadmap to the future for APG natural resources management. For more information about natural resources at APG, contact John Wrobel at john.g.wrobel.civ@mail.mil.

A veteran costumed as a WWI-vintage uniformed soldier joins the APG community to celebrate the installation's centennial by planting a young Willow Oak tree meant to serve APG for the next 100 years.

Chesapeake Bay Action Team Updates

By Hee Jea Hall, Brown and Caldwell

Members of the Chesapeake Bay Action Team (CBAT) convened for their quarterly meeting on April 27, 2017, to review progress on restoration and protection efforts around the watershed.

Impacts of Best Management Practices on Chesapeake Bay Program Management Strategies

The impacts of best management practices (BMPs) related to CBP management strategies were recently studied by Tetra Tech, Inc. to better equip jurisdictions, localities, and others to assess how these practices advance non-water quality management strategies or additional goals of the Agreement.

The study assigned each BMP or BMP group an impact score (between -5 to 5) for each CBP management strategy or goal. A matrix was developed to evaluate a wide range of positive and negative impacts to help select the most effective BMPs based on management strategy priorities, overall benefits, and co-benefits to the public or jurisdiction. The study is intended to be a planning tool and will be incorporated in the Chesapeake Assessment Scenario Tool (CAST) (www.casttool.org) and Facilities Assessment and Scenario Tool (BayFAST) (www.bayfast.org). The accompanying technical report will be available through the DoD CBP's DoD Environment, Safety & Occupational Health Network and Information Exchange (DENIX) site after it is released.

DoD CBP Program Improvement Planning

The DoD CBP provided insight on program improvement planning efforts related to measuring installations' progress towards total maximum daily load (TMDL) nutrient and sediment reduction and requested input from CBAT members on data collection, management activities, and ways to improve.

Options for program improvement include datacall refinement, assessment of pollutant reductions by installation through 2017, and assessment of expected or planned pollutant reductions to 2025. Datacall improvements include identifying performance measures, enabling easy data entry, and providing visualization of datacall results. The 2017 and 2025 program assessment would evaluate installation progress toward interim 2017 and final 2025 required reductions of sediment and nutrients by modeling the impact of historic and planned BMPs on pollutant loads. Sources of BMP data would include historic BMPs, planned BMPs through 2025, and facility planning documents. Funding to execute these improvement options is uncertain.

Using the Federal Facilities and Lands Master List

Based on information gathered from coordination with the Services via the DoD CBP, the U.S. Geological Survey developed a master list of installations in Excel format. The spreadsheet will be used to refine installation boundaries, facility management contacts, and more. USGS also provided a demonstration of the federal lands viewer tool, which can be used in conjunction with the spreadsheet to identify errors with installation ownership and boundaries.

The master list will be posted on DENIX. In order to view the master list and make changes, log into DENIX and coordinate with the DoD CBP Coordinators. The DoD CBP will ask installations to review and edit the master spreadsheet, when appropriate. There is currently no specific deadline, and updates will be ongoing.

DoD Chesapeake Bay Program Updates

- DoD CBP overview trifold brochures, FY16 Annual Report, and Commander's Guide Fact Sheet are available on DENIX. Please contact Sarah Diebel or Adam Wright for copies.
- Virginia Institute of Marine Science professor Rom Lipcius, in coordination with Tom Olexa at NWS Yorktown and Adam Wright of the DoD CBP office, submitted an FY18 DoD Legacy Resource Management Program pre-proposal. The project entails design and installation of oyster reefs that enhance oyster and other native species habitat as well as provide force protection barriers in near shore areas of military installations.
- Phase 6 model calibration input data and output data is now available. Detailed information is available on the Chesapeake Assessment Scenario Tool (CAST) website: http://cast.chesapeakebay.net/.
- The EPA Interim Assessment of Federal Progress report is now available.
- EPA announced that a Phase III Watershed Improvement Plan (WIP) guide for federal facilities may be developed this year. The guide will follow on expectations released for the jurisdictions earlier this year.
- Based on decisions made by the Partnership to revise the 2017 Midpoint Assessment due to model release delays, Phase III WIPs will not be finalized until April 2019.

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Check it Out

Creating Scenarios in CAST Webinar. July 7, 2017, 10am to 12pm. Learn how to create scenarios, select the most effective BMPs for a plan, and assess scenario results.

Call in: 1.866.299.3188, passcode 267 5715.
Web connect: https://epawebconferencing.acms.com/cbp meeting.

Advanced Analysis of CAST Results Webinar. July 12, 2017, 10am to 12pm. Learn how to target BMPs to achieve the greatest load reductions at the lowest cost.

Call in: 1.866.299.3188, passcode 267 985 6222.
Web connect: https://epawebconferencing.acms.com/cbp meeting.

CBAT Quarterly Conference Call. July 27, 2017, 10am to 12pm. Agenda topics include the FY2017 BMP Datacall, BMP Template Review, FY2017 Indicators and Projects Datacall, and DoD CBP Updates and Highlights.

Leveraging GIS to Define and Make Progress Toward Your Desired End State Webinar. August 16, 2017. For more information: https://bah16f18.adobeconnect.com/r2nfad6zr8p.

Discovery Lab: Harmful Algal Blooms. August 22, 2017, 6-8 pm. For more information: https://events.wm.edu/event/view/vims/82662.

Updates to the Standard and Tidewater Joint Permit Applications. The Standard Joint Permit Applications (JPA) and Tidewater JPA forms, which are used to permit projects under Virginia Water Protection (VWP) Permit Program, were revised based on new and updated VMRC regulations. For more information: http://www.townhall.virginia.gov/l/ViewGDoc.cfm?GDID 2597.

DoD CBP Website. This Journal, the DoD CBP Annual Report, A Commander's Guide to the Chesapeake Bay, and project fact sheets on urban tree canopy expansion and stream restoration have been posted on the Chesapeake Bay Program page. An additional fact sheet on roadside ditch management will be coming soon. Check it out at http://www.denix.osd.mil/chesapeake.

This newsletter is produced by Brown and Caldwell under NAVFAC Atlantic A E Contract N62470 14 D 9022 for Support of Safe Drinking Water Act and Clean Water Act Environmental Compliance Program. For more information or to be added to the email distribution list, please contact the DoD Chesapeake Bay Program: http://www.denix.osd.mil/chesapeake/home.