



# DoD CHESAPEAKE BAY PROGRAM JOURNAL

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

## 2016—Welcoming in a new year and possible early spring!

By: Sarah Diebel, DoD Chesapeake Bay Program

It is hard to believe that March is already here and spring is right around the corner—well at least according to Punxsutawney Phil. Here in the Hampton Roads area, daffodils and tree blossoms are already starting to bloom.

Spring provides all of us with a great opportunity to integrate a key component of the DoD Chesapeake Bay Program Mission “engage all levels of DoD military, civilians and their families to be environmental stewards of the watershed where they live” by stepping out of our winter dens and getting outside.

I encourage everyone to begin planning and considering ways in which we can all become better stewards with some simple and easy steps such as,

- ◆ Getting involved in clean-up opportunities by stopping pollution in its tracks—Annual Clean the Bay Day, organized by the Chesapeake Bay Foundation, is scheduled for Saturday June 4th from 9:00 – 12:00. The registration link is:  
<http://www.cbf.org/clean-the-bay-day/locations-registration>
- ◆ Promoting Earth Day Activities—Most folks have heard of Earth Day and what it means, but many may not understand how DoD incorporates environmental stewardship into its Mission. These events are a great opportunity to promote our programs and highlight our successes with the public and surrounding community.



- ◆ Submitting articles to the installation newspaper that informs readers of best practices for spring cleaning.

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- ◆ Creating social media content of pictures and videos related to environmental projects.
- ◆ Consider partnering with local environmental practitioners if your facility does not have formal activities arranged.

In this issue we recognize USMC Quantico for their conservation activities and volunteer programs, Naval Station Norfolk for their green marina, and projects from the Marine Mammals Program. Other topics covered include a recap of the Chesapeake Bay Action Team meeting if you missed it, information on climate change and its relationship to natural coastal infrastructure, and updates on the Facility Assessment Scenario Tool (BayFAST) in the Check it Out Section.

We look forward to highlighting more activities related to environmental stewardship and how we are engaging the DoD community in the Spring issue. As always, we are happy to promote events and help spread the word so please send photos and information our way!



# DoD Chesapeake Bay Program: Updates and Highlights

By: Kelly Duckworth, Michael Baker International

## Chesapeake Bay Model 101

Mr. Gary Shenk, an Integrated Analysis Coordinator with USGS, presented the basics of the Chesapeake Bay Model and tools used for planning and assessment. He explained that a series of models (e.g. airshed, land use change) are used and integrated to assess how nutrient sources act in different landscapes and their effect on nutrient and sediment loads delivered to the Bay. The EPA Chesapeake Bay Program Office (CBP) is currently working with other partners to update the current version (Phase 5.3.2) to a newer version called Phase 6. The Phase 6 model will be used to run the 2017 Midpoint Assessment.

The CBP is currently in the review stage of the Phase 6 model, which will take place during 2016. Throughout this year, partners will have the opportunity to comment on the models, provide new or updated data, and incorporate decisions related to climate change/sea level rise. Approximately 365 members of the Chesapeake Bay partnership have direct or indirect input on what goes into the models. With that level of involvement and need, the partnership identified three goals including (1) revisit model calibration methods and assumptions so modeling results better align with monitoring data; (2) incorporate better model input data from local partners; and (3) make CBP models more transparent, easier to understand, and have better decision-support tools.

In January 2017, the Phase 6 model will be run to measure progress in meeting the 2017 requirement of 60% nitrogen, phosphorus and sediment reductions. It will also gauge the level of effort required to meet the 2025 requirement of 100% practices in place.

## Management Strategy Two-Year Work Plan Submission

The 2014 Chesapeake Bay Agreement establishes new high-level goals and outcomes. From these goals and outcomes, the partnership developed management strategies that provide direction to achieve the Agreement's Vision. To further support the management strategies, two-year work plans were developed to specify commitments, performance targets and resources required to reach each outcome by 2025.

EPA requested DoD and Bay partners to review and comment on the two-year workplans. Therefore, DoD provided EPA with new commitments and comments on existing draft workplans. Commitments were developed using the information collected from the projected projects (FY16 and FY17) listed in the FY15 DoD CBP annual datacall.

Public Comments on the draft workplans will be accepted through March 8, 2016. After which, DoD will identify areas where additional participation on workgroups will be needed and the mechanisms to track performance targets for reporting annual progress.

## Maryland Municipal Separate Storm Sewer System (MS4) Permit Forum

In November 2015, Roberta Person with NAVFAC Washington, attended the Maryland MS4 Permit forum, hosted by Maryland Department of Environment (MDE) along with representatives from EPA. The forum topics focused on the existing permit issued in 2004. Since not much progress has been made toward issuing a new permit, EPA is pushing Maryland Department of Environment (MDE) to inspect and enforce compliance based on the 2004 permit.

The forum discussed the progress of the new permit and four of the six minimum control measures (MCMs) that are required for Phase II facilities and municipalities. No date was given on when the new Phase II permit would be released since there are several pending court cases. MDE stated they will be conducting additional inspections in conjunction with EPA. The following provides a general summary of the sessions presented during the two day forum.

### **Maryland Municipal Separate Storm Sewer System (MS4) Permit Forum Session Summary**

- ◆ Session 1B, EPA's MS4 Initiative & Oversight: Key point was EPA has oversight responsibilities even though MDE issues the permits. EPA discussed examples of inspection reports referencing non-compliance, including lack of good housekeeping practices, lack of system awareness, and lack of BMP maintenance.
- ◆ Session IC, MCM for Illicit Discharge Detection and Elimination (IDDE): Discussed the program's elements. MDE explained that IDDE is not just a survey, but a program for investigating, eliminating, and enforcing procedures.
- ◆ Session IE, MCM on Pollution Prevention: Stressed that a stormwater pollution prevention plan (SWPPP) is not a requirement of the Phase II. However, EPA does want the facility to complete self-audits to ensure good housekeeping (i.e. BMPs are being maintained where required).
- ◆ Session IG, Post-Construction BMPs Operations and Maintenance (O&M): In addition to the permit submission process to MDE, it was suggested that facilities and MDE should form a partnership throughout the inspection process and facilities should conduct their own inspections in the interim. EPA reaffirmed that BMPs should not be forgotten once construction is complete. In other words, they have to be maintained. More information can be found on the MDE website and the Urban BMP Database that provides the specific requirements of the current permit and next Phase II permit (with a few additional line items).
- ◆ Session 2B, Industrial Stormwater General Permit Coverage: Discussed this permit as it relates to Phase II MS4 sites. In Maryland, under the General Permit, MDE will require a permit for each type of industrial facility.

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# U.S. Navy Marine Species Monitoring Projects

By: Kelly Duckworth, Michael Baker International; Information provided by Carter Watterson, NAVFAC Atlantic

The Navy is responsible for compliance with Federal environmental laws and regulations that apply to marine mammals and other marine protected species, including the Endangered Species Act (ESA) and the Marine Mammal Protection Act (MMPA). As part of the regulatory compliance process associated with these Acts, the Navy is responsible for meeting specific requirements for monitoring and reporting on military readiness activities involving active sonar and underwater detonations of explosives and explosive munitions<sup>1</sup>. The Navy funds multiple projects to monitor for the presence of endangered and threatened marine species in the Chesapeake Bay. Several examples are provided in the summaries below.

## Atlantic Sturgeon Tagging and in the Lower Chesapeake Bay



The Atlantic Sturgeon research team catches these fish to implant a tracking device to study their movements and spawning locations.

Photo Credit: Jason Kahn, National Marine Fisheries Service

The Navy maintains a large array of over 75 acoustic telemetry receivers in the lower Chesapeake Bay and its tributaries. This array was originally installed in December 2012 to allow for tracking of the endangered Atlantic sturgeon that have been implanted with an acoustic transmitter. Currently, there are around 1,200 Atlantic sturgeon that have been implanted with acoustic transmitters along the Atlantic coast by various researchers and organizations.

In addition to installing the array, the Navy also initiated a project to implant Atlantic sturgeon in the York River System with acoustic transmitters in conjunction with the National Marine Fisheries Service Office of Protected Resources in July 2013. This research led to the identification of a new spawning population of the endangered Atlantic sturgeon. To learn more about this collaborative research, please visit: [https://www.youtube.com/watch?v=Ss\\_YP-76lhs](https://www.youtube.com/watch?v=Ss_YP-76lhs).

As good stewards of the Chesapeake Bay and to allow for the Navy to complete their readiness missions, the Navy continues to maintain the telemetry receiver array in the lower Chesapeake Bay and tracking the movements and presence of the endangered Atlantic sturgeon. The ultimate goal is to see the Atlantic sturgeon spawn and flourish in the tributaries of the Chesapeake Bay watershed.

## Mid-Atlantic Humpback Whale Monitoring in the Mouth of the Chesapeake Bay

In January 2015, the Navy initiated a project to monitor the presence of humpback whales in the mouth of the Chesapeake Bay. The project consists of twenty days of nearshore surveys and five days of offshore surveys performing non-random, non-systematic surveys with three objectives. First, obtain identification photographs of humpback whales (and other high priority species of baleen whales, e.g. North Atlantic right whales [NARWs]) for inclusion in regional and local catalogs. Second, conduct focal follows of humpback whales (and other high priority species of baleen whales) with an emphasis on priority Navy training areas and shipping channels. Lastly, collect biopsy samples of humpback whales for sex determination, mitochondrial control region sequencing, and microsatellite genotyping of the tissue samples.

## Marine Species Monitoring Surveys at Patuxent River

The Navy initiated a project in April 2015 to collect information and quantitative data on the seasonal occurrence, distribution, habitat use, and density of protected marine species (e.g., marine mammals and sea turtles) in the waters surrounding the Naval Air Station Patuxent River in the Chesapeake Bay. The study area covers portions of the Chesapeake Bay as well as the mouth of the Patuxent River. Data collection involves conducting monthly fixed-wing aerial surveys comprised of almost 600 kilometers (km) of trackline effort covering an approximately 2,400 km<sup>2</sup> area. Efforts also include deploying and analyzing data collected by passive acoustic data loggers (C-PODs) to document the seasonality and occurrence of echolocating cetaceans in the area.

## Haul-out Counts and Photo-identification of Pinnipeds in the Lower Chesapeake Bay

In May 2015, the Navy initiated a study to document seal presence at select haul out locations in the lower Chesapeake Bay to acquire a better understanding of the seals' seasonal occurrence, habitat use, and haul-out patterns, which are important to Navy training and testing. Identification and comparison of individual seals using photo identification will provide valuable baseline information for the future assessment of relative abundance, seal movement and site fidelity.

More information on these projects and others can be obtained from the Navy's Marine Species Monitoring website at: [www.navy.marinespeciesmonitoring.us](http://www.navy.marinespeciesmonitoring.us).



Researchers from HDR Inc. conduct a photo identification survey for humpback whales off the coast of Virginia Beach.

Photo Credit: <http://www.navy.marinespeciesmonitoring.us/media/images/>

<sup>1</sup>Source <http://www.navy.marinespeciesmonitoring.us/about/>



# FEATURED INSTALLATION

## Marine Corps Base Quantico Conservation Plantings

By: Kelly Duckworth, Michael Baker International, Information provided by Tim Stamps, MCB Quantico

The Natural Resource Environmental Affairs (NREA) Branch implements and manages the natural resources and environmental programs for Marine Corps Base (MCB) Quantico. In 2015, the NREA Branch conducted numerous conservation plantings, totaling 58 acres of new forage and woodland cover crops. Most often, the installation aims to replace non-native monoculture grasses with more diverse habitat that produces flowering plants for pollinator species, provides wildlife forage and summer brood habitat. As an added benefit, the plantings stabilize soils and prevent erosion, which also promotes water quality improvements within the Chesapeake Bay watershed. Listed below are several projects initiated by the NREA Branch at MCB Quantico.

Stung Field is a managed forest opening for military training. Prior to the conservation plantings, the primary land cover was tall fescue, a grass that overcrowds other flowering plant species and is of little benefit to wildlife. The conservation planting replaced the tall fescue with flowering forage species such as ladino clover (*Trifolium repens*) and plants in the mustard (*Brassicaceae*) family. The conservation plantings provide higher protein value for foraging animals like deer and turkey and provide pollinator habitat during the flowering seasons. The attractiveness to insects is also helpful to wild turkeys that need insect forage for poult.

A newly created multipurpose opening to support military training as well as provide habitat diversity was initiated in 2015. The initial planting of sunflowers provided pollinator habitat and future plans consist of planting nitrogen-fixing legumes, such as clover, to benefit the soil as well as wildlife and pollinator species.

At the Basic School campus, Marines have been cleaning up areas around Montford Point Pond to create a park and running trail system to commemorate the Montford Point Marines. To support the park and trail, erosion control fencing was installed, soil amendments were applied, and an acre of grass cover was established to stabilize the slope and protect water quality in the pond.

MCB Quantico recognizes that volunteers are essential for the management of environmental resources and created a formal program in 1986 called the Conservation Volunteer Program (CVP). Since then, over 200,000 hours of volunteer service have been recognized. Active duty, retired military members and civilians of many ranks and professions are involved in the CVP. In addition to the conservation planting projects, volunteers help maintain agricultural equipment, keep trails open to the forest openings, and operate the soil cultivation and seeding equipment.



Top: Stung Field conservation planting  
Above: Sunflower planting at Training Area 16E  
Left: Montford Point Pond  
Photo Credit: Tim Stamps, MCB Quantico



# Norfolk Naval Sailing Center and Marina

By: Krista Parra, DoD REC Outreach Coordinator



The Norfolk Naval Sailing Center and Marina received recognition on February 8th by the Virginia Department of Environmental Quality (DEQ) as a Virginia Green Attraction. Virginia Green is run through a partnership among the DEQ, the Virginia Tourism Corporation (VTC), and the Virginia Hospitality and Travel Association (VHTA). The program seeks to reduce the environmental impacts of the tourism industry and raise environmental awareness. It started in September 2006 with outreach to hotels, bed-and-breakfasts, and other lodging facilities by the DEQ Office of Pollution Prevention. Virginia Green Lodging became the first established program in the Virginia Green network, but standards are now in place or are being developed for all sectors of the hospitality industry.

Norfolk Naval Sailing Center and Marina, one of three recognized Green Attraction marinas in the state, is also a designated Virginia Clean Marina partner. The facility recognizes their operations have a direct impact on the marine environment of the lower Chesapeake Bay. Having policies in place that not only help prevent pollution but also raise awareness regarding local ecological issues with their staff and patrons, they aim to make the connection of a healthy environment to a healthy business.

Congratulations Norfolk Naval Sailing Center and Marina, your continued dedication to minimize impacts to the environment and increase awareness is an example of Navy's environmental stewardship at its best.

## To be recognized as a Green attraction, Norfolk Naval Sailing Center and Marina pledges they will:

- ◆ Offer the opportunity for guests to recycle.
- ◆ Minimize the use of disposable food service products by using items that are made with recycled content or are recyclable.
- ◆ Reduce overall materials that go to the landfill.
- ◆ Use green cleaning products.
- ◆ Reduce water use through low flow fixtures.
- ◆ Reduce stormwater through minimization of impervious areas, installation of pervious pavement and use of rain barrels.
- ◆ Reduce use of fertilizers to prevent harmful effects to the Bay.
- ◆ Conserve energy with use of high efficiency HVAC system and light bulbs; and use of ENERGY STAR appliances and equipment. Also, occupancy sensors in offices are used to turn on/off lights.
- ◆ Use of alternative fuel, hybrid, or electric vehicles.



Top: View of the Naval Station Norfolk Marina

Left: View of the Naval Station Norfolk Sailing Center

Photo Credit: Patrick Curry, Sailing Center and Marina Manager at Naval Station Norfolk MWR



# Designing Natural Infrastructure for Coastal Virginia

By: Christine Yott, Michael Baker International



The flat land of Hampton Roads is vulnerable to sea level rise and storm surges, natural infrastructure is an important tool that can protect the public while conserving ecosystem values. Photo Credit: Presentation by Clay Bernick on the Green Sea Blueway and Greenway Management Plan.

On February 9-10, 2016, the American Shore and Beach Preservation Association, Association of State Floodplain Managers, Chesapeake Bay Foundation, Environmental Defense Fund, Old Dominion University, Virginia Institute of Marine Science (VIMS), and Wetlands Watch jointly hosted a workshop on designing natural infrastructure for coastal Virginia. The purpose of the workshop was “build local capacity to develop and implement natural coastal infrastructure solutions as part of regional storm hazard and sea level adaptation plans.” Natural infrastructure encompasses an interconnected network of natural lands, working landscapes, and other open spaces to conserve ecosystem values and functions to the benefit of the public, including through water filtration to remove pollutants and water storage for sea level rise and storm surges. There were 27 speakers and panelists from various disciplines who facilitated discussions.

Molly Ward, Virginia Secretary of Natural Resources, provided the keynote address, explaining the need for government to take the lead on climate change issues, especially at the local level, where many of their decisions affect citizens’ everyday lives (e.g., zoning). Further, she identified the main challenges to making these changes as denial that climate change is occurring and lack of representation from all members of the community.

## Protecting our Shorelines: The Evolving State of the Art

Speakers and panelists gave an overview of the Hampton Roads area and the many options available to address sea level rise and storm surges. They noted that the conventional approach has been to use manmade structures but more recently there has been a trend to build natural infrastructure. Molly Mitchell of VIMS explained that the majority of Virginia’s population resides in the coastal plain area, so taking initiative on sea level rise and storm surge is imperative to protect these communities from frequent flooding. She/The panel emphasized the option of using natural infrastructure

as it can adapt over time unlike manmade infrastructure (e.g., levees). The panelists explained fragmentation of land remains an obstacle for the proper function of natural infrastructure. Dr. John Atkinson of Arcadis discussed the importance of building “multiple lines of defense” against coastal flooding. That is, vulnerable areas should employ more than one type of infrastructure to protect shores, including both natural and manmade options.

## Taming Wicked Problems

This panel discussed ideas for addressing climate change as a constantly changing (i.e., “wicked”) issue. Whitney Katchmark of Hampton Roads Planning and Development Commission discussed challenges and strategies for climate change adaptation on the local level. One of these challenges is the need to collaborate regionally across multiple organizations. She noted a good strategy is to collaborate only as needed because of the large time commitment required. Instead, organizations should collaborate to the extent possible within their organizations first and hold discussions with external groups as-needed. Michelle Hamore of the U.S. Army Corps of Engineers, Norfolk District reiterated one of the workshop’s themes of needing “multiple lines of defense” to confront climate change. Further, she discussed the need to inventory an asset’s characteristics in order to accurately evaluate how and where natural infrastructure fits into local resilience planning. Lastly, Dr. Jordan Fischbach of Rand Corporation discussed roadmaps for making better decisions in the face of uncertainty. He noted that roadmaps for conventional decisions typically take a top-down approach, but a bottom-up approach has been shown to have more success when a topic involves a great amount of uncertainty.

## Creating and Implementing Great Projects

Panelists discussed strategies for planning and implementing coastal projects. These included the need to collaborate with stakeholders early in the process. During implementation, it is

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# Designing Natural Infrastructure for Coastal Virginia Continued

By: *Christine Yott, Michael Baker International*

important for professionals across various disciplines (e.g., engineers, ecologists, and landscape architects) to collaborate closely to ensure that the project has all of the right aspects to be successful. Also, the work does not end when construction is complete. Operation and maintenance of natural infrastructure is important for continued success.

## Planning and Design of Natural Coastal Infrastructure

Speakers for this panel discussed engineering considerations for natural coastal infrastructure. In particular, Marcia Verman discussed the VIMS Model, which predicts damage from storm surges. To develop the model, VIMS uses data and videos of shorelines to generate recommendations for infrastructure to protect a specific area from storm surges. VIMS will be making the model interactive so users will be able to update the information and keep existing conditions more current so that the model can provide more accurate information about expected storm damage and types of infrastructure that can protect the shoreline.

## Building Political Understanding and Support

Panelists from around the country discussed their specific strategies for building understanding and support. David Fowler of Milwaukee, Minnesota described the city's strategy of sharing information with people from all disciplines, including developers, real estate agents, and insurance agents, to build stakeholder support. Tim Trautman of Charlotte, North Carolina touched on how they developed future condition floodplain maps so that development occurring today can incorporate the expected condi-

tions of tomorrow. Clay Bernick of Virginia Beach, Virginia discussed a regional, non-governmental effort that moved across state lines to build, conserve, protect, and manage open space lands and waterways in Virginia Beach and Chesapeake, Virginia and Currituck, North Carolina.

## Quantifying Benefits

This panel's speakers discussed methods to quantify the benefits of natural infrastructure. In particular, Dr. Donna Marie Bilkovic of VIMS noted that living shorelines not only provide a layer of protection against sea level rise and storm surge by temporarily storing water to prevent flooding, they have also been shown to remove nutrients by up to 55 percent. Additionally, she noted that while the benefits of oyster reefs are widely known, mussels are another good option for filtration of nutrients.

## Naval Approaches to Sea Level Rise

Captain Pat Rios with Naval Facilities Engineering Command Mid-Atlantic discussed how Navy facilities are assessing and mitigating for sea level rise. He noted that for the Navy, Norfolk is second only to Louisiana as far as the threat of sea level rise is concerned. In particular, the piers at Naval Station Norfolk were not designed for sea level rise or storm surges. As a result, the utilities to some of the piers must be shut off even during a mixture of high tide and typical storm surge. The Navy is planning to conduct a first-of-its-kind Joint Land Use Study with local governments for several installations in the Hampton Roads area that will examine vulnerabilities to sea level rise.

# DoD Chesapeake Bay Program: Updates and Highlights Continued

By: *Kelly Duckworth, Michael Baker International*

## Executive Order 13508 FY15 Progress Report and FY16 Action Plan

As part of the continued EO 13508 reporting structure, the EPA issues a consolidated annual Federal report that includes fiscal year funding and high-level key accomplishments. DoD reporting information is based on the annual DoD CBP datacall. Funding amounts from FY15 projects were categorized and totaled for each EO 13508 strategy goal: Restore Clean Water, Recover Habitat, Sustain Fish and Wildlife, Conserve Land and Increase Public Access, Expand Citizen Stewardship, Implementation and Accountability, and Climate Change. DoD also provided a high-level summary of accomplishments from FY15. The report will be posted on the EO 13508 website after concurrence from the Office of Management and Budget and Council on Environmental Quality.

## FY15 Annual DoD CBP Progress Report

This is the second annual report that will provide an overview of DoD-wide high-level accomplishments; report FY15 funding at DoD installations; share project highlights and successes across all services; and discuss future expectations and plans in the upcoming years. Additionally, a discussion will be provided on the EO 13508 and the 2014 Chesapeake Bay Agreement strategies integration for future reporting efforts. A draft report was

sent to the Services for review and comment and will be released in the spring.

We wish to thank everyone who provided pictures and additional project information to highlight our successes.

## Federal Facilities Workgroup (FFWG) Updates

The FFWG continues to discuss reporting for EPA's Assessment of Two-Year Milestone Progress. The workgroup is creating a tracking spreadsheet of agency submittals of programmatic milestones and planning BMP submissions that will be used as part of EPA's assessment of federal agency progress.

The workgroup also discussed the purpose of the Federal Facility Editor Tool, which is designed to allow Federal agencies/facilities to edit, add, or delete boundaries and land uses.

Phase III Watershed Implementation Plan development is already starting, particularly through stakeholder surveys and development of EPA expectations. The FFWG will be discussing a series of alternatives for federal participation in Phase III. The group agreed that federal agencies will continue to support jurisdictions' WIPs and identify areas where we could enhance our participation. The DoD CBP will continue to update the CBAT on FFWG activities.



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## { CHECK IT OUT }

### Tracking Protected Sea Turtles

<https://www.youtube.com/watch?v=RpKkyOSrsts>

The following YouTube video from U.S. Fleet Forces Command show how sea turtle monitoring helps the Navy maintain environmental compliance for military readiness activities. It highlights a research project that is designed to help the Navy better understand and mitigate the potential effects of nearshore training exercise on sea turtles.

### Updates to BayFAST, CAST, MAST and VAST <https://www.bayfast.org>

*Sharing scenarios, facilities, and cost profiles:* Emails will be sent when another user shares a scenario, facility or cost profile with you. These notifications will minimize the need to login in repeatedly just to see if information has been shared.

*Forgotten password:* Your user name and password can be automatically emailed to you if the information is forgotten. Follow the instructions on the website for having your information sent to a registered email address.

*User profile options:* Newly added to Edit Profile is the option to receive email notifications of updates and scenarios shared with you. Once you log in, you can edit your profile information.

*New feature under development:* Work on the tools is underway to offer scenario results that include the cost per pound of nitrogen, phosphorus or sediment reduced (\$/Lb. reduced) and an estimate of the pound reduced for each BMP (Lb. reduced/BMP).

*New feature under development:* The Chesapeake Bay Program is exploring optimization calculation methods to better develop implementation plans. Instead of inputting BMPs, users will input objectives like minimizing costs, meeting a nitrogen target and/or increasing tree canopy. The results will include a suite of BMPs optimized to meet the objectives. Look for additional announcements about this as work proceeds.

### DoD Chesapeake Bay Action Team Meeting [ 28 April 2016 at 1000 ]

<https://conference.apps.mil/webconf/quarterlyCBAT>

Every quarter, the DoD Chesapeake Bay Program hosts a DoD only forum to discuss Chesapeake Bay watershed topics related to the installations. All environmental managers, water program managers, and natural resource managers are encouraged to attend.

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This newsletter is distributed via email. Contact the DoD Chesapeake Bay Program with any questions, comments, or to be added to the email distribution list (email: [sarah.diebel@navy.mil](mailto:sarah.diebel@navy.mil) or telephone: 757-341-0383).

