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DoD Chesapeake Bay Program Journal

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

Meet the New DoD REC for EPA Regions I & III

***By: Kelly Duckworth,* Michael Baker International**

Please welcome Jeff Laitila to the DoD Chesapeake Bay team. He currently serves as the new DoD REC for EPA Regions I & III at CNRMA/NAVFAC MIDLANT. When asked about what he was looking forward to in his new role, he replied, "What excites me most is having the opportunity to affect positive change while protecting the DoD mission at a strategic level."

After graduating from Michigan Technological University with a bachelors in Environmental Engineering, he served as an installation level environmental engineer at Robbins AFB, in Georgia and Edwards AFB, in California where he learned practical field experience. From there, he served as an installation level environmental media manager at Naval Air Facility Atsugi, Japan.

While in Japan, Jeff served for more than thirteen years, first as Deputy, and then full Regional Environmental Program Director/REC for Commander Navy Region Japan. Nearly eight of those years he was also dual hatted as the NAVFAC Far East Environmental Business Line Coordinator. There he developed policy and implemented an integrated program for environmental management of compliance, natural resources, and cultural resources. He also served as the U.S. Navy representative to the U.S./Japan environmental subcommittee, and the U.S. environmental representative to the British Indian Ocean Territory. His responsibilities encompassed all aspects of environmental planning, regulation and management, across all environmental media. He was the first to successfully engage the host nation of Japan through a comprehensive environmental outreach program that served to protect the continued forward deployed mission of DoD in Japan.

Although Jeff has only been involved with the DoD Chesapeake Bay Program for two months, he has thoroughly educated himself on the challenges we face, "Though the challenges we face are significant, there has been a great deal of progress made to date. The professionals working this program, both within the DoD as well as external stakeholders, are dedicated, extremely knowledgeable, and very hard working. As such, I am confident of our continued success as we progress towards our common goals."

On a more personal level, Jeff states "I am looking forward to strengthening the partnerships between DoD and all stakeholders as we move forward together to address the multitude of challenges presented. Achieving the stated goals is important, but the manner in which we do so is equally important. I am very fortunate to have such a talented and motivated team to work with."

Jeff and his wife are having fun exploring the Hampton Roads area learning about the treasures that the Chesapeake Bay offers.

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DoD Chesapeake Bay Program Updates

***By: Sarah Diebel,* DoD CBP Coordinator**

The DoD Chesapeake Bay Action Team (CBAT) met on April 16, 2016 via Defense Connect Online. Representatives from the Navy, Army, Air Force, Defense Logistics Agency and Marine Corps participated. The next CBAT will be held on July 29, 2015. Topics and updates from the 16 April call included:

BMP Verification

The group discussed urban stormwater best management practice verification including the actions and information the Bay Jurisdictions are requiring in order for DoD to maintain the pollution reduction credits for compliance with the Chesapeake Bay total maximum daily load (TMDL). BMP verification is defined as, "the process through which agency partners ensure that practices, treatments, and technologies resulting in reductions of nitrogen, phosphorus, and sediment pollutant loads are implemented and operating correctly." Tom Schueler, Chesapeake Stormwater Network, explained there are 11 guiding principles for urban BMP verification from the initial inspection of the BMP after construction to performing follow up maintenance in order for the facility to qualify for continued pollutant removal rates/credit; BMP credit duration; record keeping; and routine reporting.

During the next few years, jurisdictions will need to clean their BMP databases so that all the entries are actual BMPs with geographic addresses for inspection verifications. It is currently recommended that installations assess all pre-2000 BMPs in the first permit cycle, and then focus on pre-1990 BMPs in the first two years of that cycle. Additionally, initial efforts should be focused to confirm that estimated BMPs actually exist and their current condition. It is anticipated that the verification process will ultimately enhance new stormwater practices, discover hidden BMPs, and identify cost-effective retrofits.

For more reference materials related to verification, please visit the Chesapeake Bay Program Partnership's website or www.chesapeakestormwater.net

DoD Legacy Resource Management

Every year since 1990, the Office of the Secretary of Defense has provided funding to the DoD Legacy Program to help manage and sustain nearly 25 million acres of land in the United States for DoD stewardship. The DoD Legacy Program ultimately funds natural and cultural resources projects that

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"OspreyCam"

Posted from www.VIMS.edu

Have you seen the *OspreyCam*? Watch real-time images of an osprey family during their annual nesting and breeding season on the waters of Chesapeake Bay. The images—brought to you by the Virginia Institute of Marine Science—come from a nesting platform in the waters of York River immediately in front of VIMS' campus in Gloucester Point, Virginia. The nest site protects the resident ospreys from predators and gives them easy access to nearby York River fishing grounds.

Watch real-time images of the osprey family with USTREAM Live at http://www.vims.edu/bayinfo/ospreycam/index.php. Above is screen shot of the osprey family captured on 13 April 2015.

The video feed from the *OspreyCam* at the Virginia Institute of Marine Science comes from an Axis PTZ-5534 surveillance camera. The camera captures real-time streaming video during daytime hours throughout the breeding season, and its pan-tilt-zoom feature allows VIMS researchers to track the adults and hatchlings as they move about the nest.

Ospreys (*Pandion haliaetus*) are of particular interest to researchers at the Virginia Institute of Marine Science because they are the only birds of prey that subsist almost exclusively on a diet of live fish—hence their common name of "fish hawks."

Ospreys are such a common sight above Chesapeake Bay during the spring and summer that it's easy to forget that our "local" birds spend almost half their year in South America. Indeed, ospreys are one of the most wide-ranging birds in the world. Be sure to check out the *OspreyCam* to see the osprey feeding their chicks, basking in the warm sun, or even taking flight. Enjoy!

Chesapeake Bay TMDL Action Plan for Hampton Roads, Virginia Installations

***By: Dave Cotnoir,* NAVFAC MIDLANT *and Joni Calmbacher,* Michael Baker International**

Eight Naval installations in the Hampton Roads, Virginia area meet the criteria for small municipal separate storm sewer systems (MS4) designation and, as such, currently receive consolidated permit coverage under the Virginia MS4 General Permit. The current MS4 Permit includes requirements for permittees to address the Chesapeake Bay Total Maximum Daily Load (TMDL) by reducing the amount of pollutants of concern (nitrogen, phosphorus, and sediment) from their regulated areas. The Virginia Department of Environmental Quality (DEQ) has outlined a phased approach to addressing the Bay TMDL. The pollutant reductions are to be implemented over three separate five-year permit cycles with 5% of the reductions to be met in the first permit cycle, 35% in the second cycle, and 60% in the final cycle. The MS4 Permit also requires the development of a Chesapeake Bay TMDL Action Plan, which outlines how the permittee will adhere to the requirements in the MS4 Permit regarding the Bay TMDL. The requirements include documenting the legal authorities, documenting the means and methods to address stormwater discharge from new sources, estimating the pollutant loads, calculating the required pollutant load reductions, and documenting the means and methods to meet the required pollutant reductions.

A bioretention area BMP at Naval Station Norfolk.

Michael Baker International (Baker) is currently assisting NAVFAC MIDLANT in the development of their Chesapeake Bay TMDL Action Plan to ensure compliance with the MS4 Permit. Key tasks in the development of the Action Plan are described below.

- Since it is imperative to obtain input from stakeholders, Baker organized a project kick-off meeting to assemble stakeholders to discuss the purpose of the project, identify key personnel, and coordinate logistical requirements.
- Baker calculated the existing source loads for the pollutants of concern and the required pollutant load reductions in accordance with the MS4 Permit and the Chesapeake Bay TMDL Action Plan Guidance issued in August of 2014 by DEQ. Baker is using draft guidance updated in March 2015 to complete the Action Plan. This task included calculating pollutant load reductions for existing stormwater best management practices (BMPs) installed after July 1, 2009, in accordance with the guidance. The July 1, 2009, date represents the baseline conditions for the Chesapeake Bay Model used to compute the pollutant loadings and required reductions found in the MS4 Permit. Design plan sets, provided by NAVFAC MIDLANT, were consulted to determine the corresponding drainage areas of existing BMPs for the calculations.
- Baker calculated the projected pollutant load reductions for the proposed conceptual BMP designs (for all eight installations) developed during previous studies referred to as the Stormwater BMP Opportunity Assessments. Baker also documented and calculated pollutant reductions for BMPs installed prior to July 1, 2009, to be presented to DEQ for consideration.
- Baker will meet with NAVFAC MIDLANT to discuss options for choosing the appropriate number of BMPs to achieve the required reductions for the first permit cycle. These proposed BMPs will be documented in the Action Plan in accordance with the guidance.

Disconnected roof drains at Naval Station Norfolk.

- DD Form "front page" 1391 cost estimate packages will be developed for the proposed conceptual BMP designs prepared as part of the Stormwater BMP Opportunity Assessment project. The 1391 package will be used to secure funding for implementing the proposed BMPs to address the pollutants of concern.
- Baker and NAVFAC MIDLANT will hold a final review meeting to finalize the Action Plan and 1391 cost estimate package.

In addition to the work it is completing for the Virginia installations, Baker recently completed the Chesapeake Bay Pollutant Reduction Plan (CBPRP) for Naval Support Activity Mechanicsburg in Pennsylvania. Only limited guidance for the CBPRP development was provided in the Pennsylvania MS4 Permit, as compared with the guidance provided by Virginia. Similar computations were completed regarding pollutant loadings and pollutant reductions.

Composting for Stormwater Control

***By: Kelly Duckworth,* Michael Baker International**

On 21 April 2015, the Virginia Tech Cooperative Extension hosted a webinar on composting for stormwater control. So what is composting, and why is it so important and how in the world can it assist with stormwater management?

Composting is a controlled process for the stabilization of organic matter and can turn waste into a valuable soil amendment. Creating compost from waste materials provides an opportunity to return nutrients and organic matter to the soil; a proven practice for soil quality enhancement. Compost can improve crop growth and provide environmental benefits by improving soil health and the soil's capacity to absorb and hold water and plant nutrients. A properly managed composting process can destroy weed seeds, plant pathogens, and human pathogens.

Gary Gittere of McGill Environmental Systems reported that soil erosion research in the United States started in the 1920s. Despite more than 90 years of research, soil erosion continues to be a serious problem. Soil loss rates from construction sites are 10 to 20 times that from agricultural lands. Additionally, the cost of yearly damage from soil erosion is estimated to be $400 billion worldwide. Approximately 850 billion gallons of untreated water are discharged into the nation's water bodies and 60 percent of lost soils are deposited into our aquatic systems, polluting them with nutrients, pesticides, and other contaminates. With all of these stormwater challenges, composting has beneficial factors for erosion and sediment control and provides stormwater management opportunities.

Healthy soil is one of nature's key tools in recycling, cleaning, and preserving our environment. Improving soil ecosystems and creating clean stormwater runoff will help the Chesapeake Bay jurisdictions meet the Chesapeake Bay total maximum daily load (i.e. "pollution diet"). The following are the reasons why composting should be considered and may be beneficial during various planning stages of erosion and sediment control and stormwater management projects:

- Compost retains a large volume of water, thereby helping to prevent or reduce erosion, reduce runoff, and establish vegetation;
- Compost improves downstream water quality by retaining pollutants, such as heavy metals, nitrogen, phosphorus, oil and grease, fuels, herbicides, and pesticides;
- Nutrients and hydrocarbons adsorbed or trapped by compost are decomposed by naturally occurring microorganisms;
- Compost improves soil structure and nutrient content, which reduces the need for chemical fertilizers; and,
- Compost-based best management practices (BMP) remove as much or more sediment from stormwater as traditional perimeter BMPs.

Using compost as a stormwater BMP has been shown to provide significant water-holding capacity, with reduced to no runoff from low to moderate events, what are the possible costs associated with composing?

The Milwaukee Metropolitan Sewerage District Regional Green Infrastructure Plan found that composting costs $0.28 per gallon of storage when compared to $1.59 per gallon of storage for rain gardens and $2.24 per gallon of storage for bioretention ponds. Based on this comparison composting is a cheaper alternative.

There is a great deal of scientific knowledge about composting including:

- Organic matter is vital to the soil's quality;
- Amending soil with compost is the best way to increase the organic matter in soil;
- Compost has a high percentage of organic matter, 40 to 60 percent, which allows soil to retain water;
- Compost can hold up to 20 times its weight in water; and,
- Compost can increase the ability of soil to store water by 16,000 gallons per acre for each one percent of organic matter added.

The benefits of promoting soil best practices is directly related to better erosion control; reduced stormwater runoff with improved water quality, as compost acts as a natural filter for pollutants such as heavy metals, nitrogen, phosphorus, fuels, grease, and oil; and healthier landscapes that require less water, fertilizer, and pesticides, which will are more cost effective and can ultimately assist to restore the water quality of the Chesapeake Bay.

Installations interested in incorporating composting into their erosion and sediment control practices can contact the DoD Chesapeake Bay Program for more information and assistance.

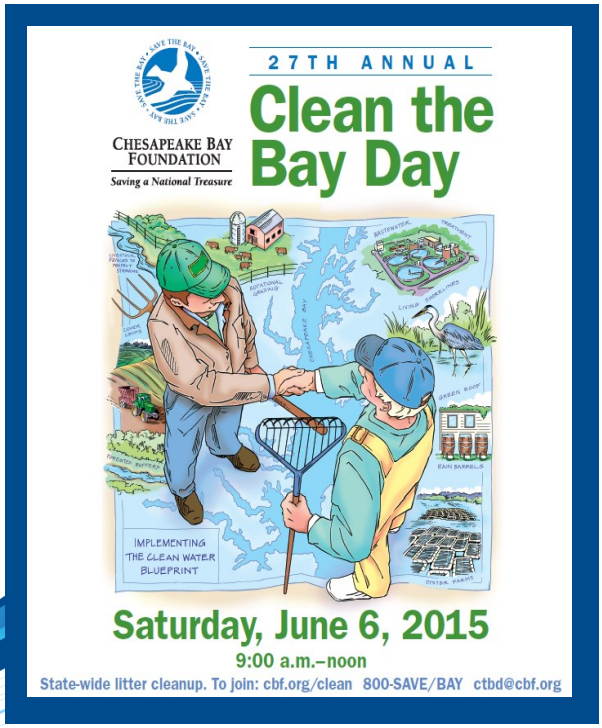
Upcoming Chesapeake Bay Events

Clean the Bay Day

Clean the Bay Day is the Chesapeake Bay Foundation's (CBF) annual stream and shoreline cleanup, during which citizen volunteers come out to remove litter and debris from Virginia creeks, streams, rivers, and the Chesapeake Bay. The event, sponsored by CBF in partnership with local governments and corporate sponsors, is held the first Saturday in June. The event draws thousands of individual volunteers, families, clubs, businesses, non-profits, conservation groups, and military personnel to clean-up shorelines across the Commonwealth, from Hampton Roads to Northern Virginia, the Eastern Shore to the Shenandoah Valley. In 2014, the *Clean the Bay Day* Results were as follows:

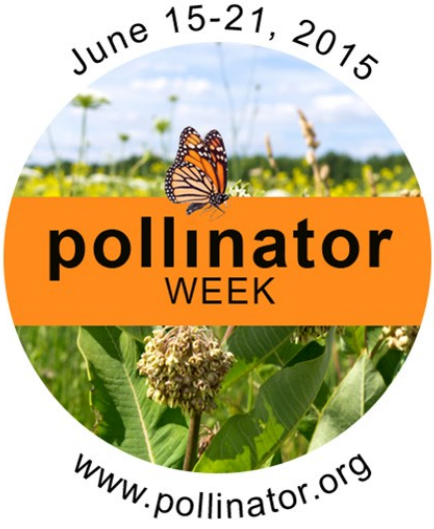
Approximately 6,000 volunteers removed more than 110,000 pounds of harmful debris from approximately 250 sites along more than 450 miles of streams and shoreline… all in just three hours.

Would you like to host a cleanup in your area? Becoming a partner and bringing *Clean the Bay Day* to your area has never been easier! Contact Sarah Diebel for details.



Pollinator week

Posted from *www.pollinator.org*



What is pollination?

Pollination is a vital stage in the life cycle of all flowering plants. When pollen is moved within a flower or carried from one flower to another of the same species it leads to fertilization. This transfer of pollen is necessary for healthy and productive native and agricultural ecosystems.

♦ About 75% of all flowering plant species need the help of animals to move their heavy pollen grains from plant to plant for fertilization.

♦ About 1,000 of all pollinators are vertebrates such as birds, bats, and small mammals.

♦ Most pollinators (about 200,000 species) are beneficial insects such as flies, beetles, wasps, ants, butterflies, moths, and bees.

Why are pollinators important?

Pollinators are often keystone species, meaning that they are critical to an ecosystem. The work of pollinators ensures full harvests of crops and contributes to healthy plants everywhere.

♦ An estimated 1/3 of all foods and beverages is delivered by pollinators.

♦ In the U.S., pollination produces nearly $20 billion worth of products annually.

How you can help.

Reduce your impact. Reduce or eliminate your pesticide use, increase green spaces, and minimize urbanization. Pollution and climate change affect pollinators, too!

Plant for pollinators. Create pollinator-friendly habitat with native flowering plants that supply pollinators with nectar, pollen, and homes. For information on what to plant in your area, download a free ecoregional guide online at www.pollinator.org.

Join the Pollinator Partnership. Go to www.pollinator.org and click on "Get Involved." Be part of a growing community of pollinator supporters.

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***By: Sarah Diebel,* DoD CBP Coordinator**

support military readiness and enhance conservation objectives. This year's areas of emphasis for proposals are Readiness and range sustainment; Planning to address and adapt to new and emerging threats; Efficiencies in cultural resources management; and asset resiliency through historic preservation. For more information on how to apply for Legacy funding or for more information about the program, please visit www.dodlegacy.org.

National Public Lands Day

The National Environmental Education Foundation (NEEF) is a congressionally charted organizational program that focuses on environmental learning. In 1999, NEEF and the DoD Legacy Program started a resource management program partnership for which NEEF applies for award money from the DoD Legacy Program, and then redistributes award funding for National Public Lands Day (NPLD) volunteer-based work projects. Up to $6,500 can be given to an installation for a project. Although the installation can apply for funding for any type of NPLD project, a special focus on improving habitat for pollinator species, such as bees, birds, bats, and insects, is encouraged for a successfully funded project. Additionally, NEEF will fund projects that tie the Chesapeake Bay with stewardship and preservation of natural resources. One of the requirements is that installations can have public and recreational access to the site. If you would like more information, please visit neefusa.org or publiclandsday.org. If you or your installation is interested in applying for any DoD Legacy funds or need help in the proposal writing, please contact the DoD CBP.

Land Use Workgroup Updates

An upcoming high-resolution land cover data project will be used as part of the Phase 6 model schema. EPA is planning to fund much of the project, however jurisdictions will be cost sharing this effort. The Phase 6 modeling tools are being developed to inform the Phase III WIPs.

Federal Facility Target Setting

EPA proposed the establishment of pollutant targets for nitrogen, phosphorous and sediment loads at priority federal facilities and established a joint federal and jurisdiction workgroup to resolve concerns and develop the target setting protocol. The workgroup held an initial conference call in January and continues to meet on a routine basis. Participating agencies include VA, MD, PA, DC, EPA, DHS, NPS, GSA, and USDA. Staff participated on 15 April to continue technical discussions related to timeline and expectations for those deadlines, review and comment on the draft protocol outline, and the federal facilities that will be assigned targets. We also provided direction that for the purposes of reporting DoD progress, information must be reported at the Agency level. The DoD CBP continues to work with our FLC-D representative and region staff to determine impacts and path forward.

Agreement and Management Strategies

The draft management strategies closed for public comment on April 30, 2015. To review them, visit http://www.chesapeakebay.net/managementstrategies.

BMP Reporting

Historical BMP reporting is due to the jurisdictions on 30 June 2015. Refer to the BMP Verification update to determine installation areas of focus.

Bring Your Child to Work Day

***By: Catherine Mulhearn,* Environmental Director, NSA Mechanicsburg**

NAVAL SUPPORT ACTIVITY (NSA) MECHANICSBURG BROUGHT ENVIRONMENTAL AWARENESS TO PARTICIPANTS OF ALL AGES DURING THIS YEAR'S BRING YOUR CHILD TO WORK DAY/EARTH DAY EVENT.

Cathy Mulhearn, Environmental Director assisted by her own teenage children Erin and Spencer, have been creating and conducting various activities like this at the base for the past ten years. Participants enjoy the activities and look forward to the hand on activities as part of their days events.

This year, the Mulhearns along with staff Troy Schoffstall and Heather Hoban, led children in a Monarch frustration game where migrating Monarch Butterflies lose their habitat for a variety of reasons during their long migration from North America to Mexico. To help restore Monarch habitat in their own backyards, children planted milkweed seeds in an ice cream cone filled with soil which they took with them. While the cones were used to plant seeds, children made homemade ice cream in baggies using simple ingredients, rock salt and science!

To promote the importance of reducing pollutants in storm water, experiments were conducted to show the difference in water quality between a straight pipe storm water discharge versus discharge after being filtered through a bio retention facility. Children created a bio -retention facility with perforated pipe, soil, gravel, mulch, sod and plants. After their water was "polluted' with a variety of materials, the water quality coming from the bio retention facility, was visibly cleaner than the straight pipe discharge, thus simply showing the benefit of implementing storm water best management practices such as bio retention.

NSA Mechanicsburg is eager to promote storm water awareness and to share upcoming plans to construct several major bio-retention facilities, rain gardens and other practices on the installation. Construction of the Mid-Atlantic Region's largest bio retention facility will begin at NSA Mechanicsburg this summer. These efforts are all part of NSA Mechanicsburg's MS4 permit compliance and stewardship of the Chesapeake Bay Program and the Clean Water Act.

NSA Mechanicsburg makes Environmental Awareness a family affair.
(Photo by Chris Cleaver, PAO NSA Mechanicsburg)

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{CHECK IT OUT}

Building a Better Wetland: Reference Data and Tools for Enhancing Wetland Projects [Web-based: 20 May 2015 at 1400]
https://www.fedcenter.gov/Events/index.cfm?id=27651
Using data from natural reference wetlands for an appropriate wetland type and region is essential for practitioners who want to enhance project designs and measure performance over time. By designing mitigation or restoration sites with characteristics derived from reference wetlands of relevant hydrogeomorphic subclasses, practitioners are more likely to construct a project that will at least be on a performance trajectory to replace the ecosystem services of natural systems.

6th Annual Choose Clean Water Conference - Harrisburg, PA [19-20 May 2015]
http://choosecleanwater.org/our-conference/may-19-20-2015
Join us to learn new skills, see how clean water goals are being met locally, hear policy updates, and discuss best practices to reduce polluted runoff and increase conservation measures in the Chesapeake region.

Stream Restoration Conference - Baltimore, MD [23-25 September 2015]
http://midatlanticstream.org
The 7th Mid-Atlantic Stream Restoration Conference will provide an opportunity for individuals involved with streams to share ideas and lessons learned in stream restoration planning, assessment, design, construction, and evaluation and other topical stream issues. The conference includes presentations, discussions, exhibits, and pre-conference workshops. Scientists and practitioners are encouraged to share experiences, network with colleagues, and become involved in shaping the future of stream restoration in the Mid-Atlantic.

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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 or telephone: 757-341-0383).