



DoD CHESAPEAKE BAY PROGRAM JOURNAL

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

Chesapeake Bay Coordinator News

by Chris Porter, NAVFAC Mid-Atlantic

As the Director of the Regional Environmental Coordination (REC) Office, I am pleased to announce the selection of Sarah Diebel, Eddie DuRant, and Melanie Frisch as three of the Department of Defense/Department of the Navy Chesapeake Bay Program representatives.

For the last several months, Sarah has been detailed to the DoD Bay Program Coordinator position, previously held by Jennifer Guerrero, and doing an excellent job. Prior to this assignment she managed the Naval Station Norfolk storm water, wastewater and drinking water programs and supported an environmental consulting firm before joining the Navy in 2006. Eddie brings vast experience in the environmental planning, natural resources, environmental due diligence and Brownfield redevelopment areas. Since coming to the Navy, Eddie has worked in the environmental planning and conservation group serving as the natural resources subject matter expert for the REC in the review of state legislation and regulation with potential impacts to the Department of Defense (DoD) in EPA Regions 1, 2 and 3. Melanie, will join the team on June 6th. She previously worked for the U.S. Army Garrison Fort Belvoir as a Natural Resource Specialist and administered Fort Belvoir’s municipal separate storm sewer system (MS4) program. Prior to working for the Army, Melanie worked as a Vegetation Control Specialist and Water Quality Engineer for the Virginia Department of Transportation Hampton Roads district. She is also a certified Arborist and Professional Wetland Delineator.

I am looking forward to getting all three on the REC staff to represent DOD/Navy in the Chesapeake Bay program and firmly believe they will make a strong team!

Please welcome these three outstanding performers and strive to support the DoD Bay Program by providing routine good news stories occurring on your installation - big or small, participating in group discussions, attending meetings, continuing in stewardship, reaching out to your communities and providing timely responses for data requests. **YOUR INPUT COUNTS AND IS DEPENDENT ON THIS PROGRAM’S SUCCESS!**

Sarah, Eddie, and Melanie will begin initiating State partnerships to engage both State and Local governments and installations as the jurisdictions, including D.C., kick-off their Phase II Watershed Implementation Plans development. I have already heard that many of you have been participating on county level meetings and any information you can relay back, in order for this information to be shared and ensure we are treated FAIRLY and EQUITABLY, would be of great benefit.

State and Federal Agency Guides on Phase II Watershed Implementation Plan (WIP) Development

by Sarah Diebel, NAVFAC Mid-Atlantic

On March 31, 2011, EPA released its Guide for Chesapeake Bay Jurisdictions for the Development of Phase II watershed implementation Plans (WIPs) and a revised Phase II WIP schedule. The Guide makes it clear that the states and D.C. have the lead for Phase II. During Phase II, the jurisdictions will work with key federal, state and local partners on strategies to protect and restore the region’s waterways. The guide further explains how the States’ nitrogen, phosphorus and sediment allocations will be divided further, calling them “local area targets.” EPA’s role is to provide support, help coordinate with federal agencies, review whether WIP strategies provide assurance that Total Daily Maximum Load (TMDL) allocations will be achieved and maintained, make any necessary refinements to TMDL allocations, and take appropriate federal actions as necessary.

On April 29, 2011, EPA released the Guide for Federal Lands and Facilities’ Role in Chesapeake Bay Jurisdictions’ Phase 2 Watershed Implementation Plans. The Federal Guide summarizes information previously set forth in the Executive Order 13508 Strategy and the Chesapeake Bay TMDL specific to federal lands and facilities. It also provides additional clarification to federal and state agencies on approaches that can be used to ensure that federal lands and facilities are integrated into the jurisdictions’ Phase 2 WIPs. The Guide was prepared by EPA in response to requests from both federal and state agencies. DoD participated in the workgroup that drafted the document.

Both guides can be found at:
<http://www.epa.gov/chesapeakebaytmdl/>

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Earth Day Events at NSF Indian Head

by Seth Berry, National Resources Program Manager

The following events were held at Naval Support Facility (NSF) Indian Head in celebration of Earth Day 2011.

Tree Planting

Saucer magnolias (2) and a flowering cherry tree were planted at two buildings on April 22 as part of Earth Day. The NSASP executive officer planted a saucer magnolia at the NSASP Command Building as part of a tree planting ceremony open to base employees and military personnel. The NSF Indian Head Natural Resources Office provided the trees and materials.

Battery and Cell Phone Recycling

A drive-through collection area was set up to collect rechargeable batteries and cell phones. The collection area was open from 11 a.m. to 12 noon and again from 3 to 5 p.m. on both Thursday, April 21, and Friday, April 22. Displays and energy conservation brochures were also available.

The following types of rechargeable batteries and phones were accepted:

- Nickel Cadmium (Ni-Cd)
- Nickel Metal Hydride (Ni-MH)
- Lithium Ion (Li-Ion)
- Nickel Zinc (Ni-Zn)
- Small Sealed Lead (SSLA/PB)
- All cell phone makes and models

23rd Annual Potomac River Watershed Cleanup

In addition to the events planned for Earth Day on April 22, Chemical and Biological Incident Response Force (CBIRF) Marines participated in the 23rd annual Potomac River Watershed Cleanup event on Friday, April 8th. CBIRF personnel worked for four hours to remove 50 bags of trash and approximately 150 pounds of loose debris from approximately 1 mile of the Potomac River shoreline.



Naval Support Activity South Potomac (NSASP) executive officer CDR Elvis Mikel planting a saucer magnolia as part of NSF Indian Head Earth Day 2011. (photo credit: U.S. Navy photo by Gary Wagner)

Fort A.P. Hill Earth Day 2011 = Fun, Talks, and Trees

by Jason Applegate, Natural Resources Specialist, Environmental Division, Fort A.P. Hill

Fort A.P. Hill celebrated Earth Day this year with its largest public outreach educational event to date. More than 900 students, teachers, and chaperones from 10 local public and private schools attended the installation's annual celebration to learn about environmental management and natural resources conservation. This year's event set another record by featuring 37 exhibitors from various public, private, and non-profit entities, three tree planting sites where students learned firsthand about the importance of riparian forest buffers and improving wildlife habitat, static tactical vehicle and land management displays, and guided ecology walks for attendees to learn about the management of habitats and the conservation of biological diversity. Attendees reforested just over one acre by the end of the day with most of that area constituting a riparian forest buffer around Beaver Dam pond.

The feedback from the schools and exhibitors on this event has been overwhelmingly positive and the installation plans to replicate this success next year.



A local student plants a tree to improve wildlife habitat as part of Fort A.P. Hill's Earth Day celebration.

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Earth Day was celebrated a week early this year due to a conflict with local schools' Spring Break. However, moving up the celebration greatly increased the potential attendance from local schools which resulted in the large draw (more than double the previous attendance record set in 2005). Earth Day has become the primary venue for Fort A.P. Hill to conduct community outreach on environmental management and conservation practices.

The participation with the exhibitors truly made the event an "across the board" educational outreach opportunity. Students were able to directly interact with biologists, geologists, conservationists, scientists, and environmental managers to learn about the particular areas of expertise. Two of the most popular exhibitors were the Casting Competition (Virginia Department of Game & Inland Fisheries), where students were able to learn the basic techniques of casting, and the Segways, where students were able to experience the alternative mode of transportation first hand. Tactical vehicles and land management equipment were staged in the vent area to showcase the military's use of the land and why sustainable land management is important to supporting the installation's dual missions of military training and biodiversity conservation.

Green in the Military³

by Katie Perkins, P.E., Michael Baker Jr., Inc.

The Hampton Roads Green Building Council (HRGBC) presented the third installment of "Green in the Military" on February 2, 2011 at the Virginia Beach Convention Center. The location of the conference provided the perfect example of "green", as the Virginia Beach Convention Center was the first convention center in the country to achieve the Leadership in Energy and Environmental Design (LEED) Gold certification for Existing Buildings. Ms. Rebekah Burke, the Chair of HRGBC, said that this was a great way for all to collaborate and bring new ideas to innovate and build smarter buildings. This will ultimately lead to more secure bases and help the sustainability mission of the military. CAPT Libonate, the keynote speaker, stated that the LEED concept is the forefront of the Navy's environmental reform. To help with mission readiness, a dollar not spent on energy, is a dollar spent somewhere else. CAPT Libonate finished by saying that the Navy will continue to be a good steward of the environment and lead by example.

The conference showcased sustainable design programs and practices in the Military's Mid-Atlantic region; bringing together contractors, design professionals, government employees and officials at the local, state, and federal levels. The common theme throughout all the technical sessions was the government and military branches need to continue leading by example and more so become the leader in green practices nationwide. The military now is using an integrated design process to keep the focus on energy and sustainability goals from the first step in plans for a new building or renovations to an existing building. In addition for 2011, all military facilities over \$750k and renovations exceeding 50% of the present value must meet LEED Silver standards by the USGBC. This ambitious goal is already being put to the test, as described by Stephen Ericson, P.E. with NAVFAC Midlant during his presentation "Design Strategies for Energy Use Reduction." Mr. Ericson provided historical data and project energy reduction strategies, such as optimizing the building envelopes, optimizing window requirements, creating radiant barriers in the walls, using demand control ventilation and heat recovery from shower drains, that have shown to be successfully implemented to achieve this goal.



Colonel John "Swift fox" Fortune (U.S. Army, Retired) of The Rappahannock Tribe discusses traditional Native American culture with local students attending Fort A.P. Hill's Earth Day celebration.

Matt Hinson, with the USACE, presented "Energy Efficient Strategies – Strategies to achieve the Federal Energy Mandates." During his presentation, Mr. Hinson discussed current energy policy and mandates, future energy policy, LEED recommendations for design, and looking ahead to new energy strategies and renewable energy. Mr. Hinson stressed the importance of pulling from lessons we have already learned from previous design/build processes and not getting wrapped up in the policy. He describes the primary driver being the 40% energy reduction per the Environmental Policy Act (EPACT) of 2005 and LEED certification. Strategies described during his presentation to reach these achievable goals included cooler roofs, Energy Star appliances, tighter construction with less infiltration, E-coating on windows, triple pane windows, use of day light, optimizing HVAC usage, dual flush toilets, and waterless urinals. He then took his presentation to the next level and looked ahead to the energy strategies we are aiming for, which is a goal of net-zero for all facilities. Ambitious? Yes. But when asked how Mr. Hinson was going to "stay with the energy goals," his response to the audience was we need to continue being creative and just work hard to meet the current goals.

The net-zero energy topic was further discussed by Anne Crawley, a technical manager with the Department of Energy during her presentation of "Federal Renewable Energy". Ms. Crawley began by stating the goal is achievable, but of course, achieving targets will always come with a challenge. Ms. Crawley identified an integral role within the goals as being renewable resources, such as biomass, geothermal, wind, solar, landfill gas, municipal solid waste, ocean, incremental hydropower, and hydrokinetic power. Remaining on the topic of "Green in the Military", Ms. Crawley presented numerous military facility projects which are already aimed to achieve the net-zero goal, such as the Colorado Research Support Facility, which is already net-zero.

For additional information, to sign up for future Green Building Council event, or to see the presentations from this "Green in the Military³" conference please visit www.hrgbc.org.



ANNOUNCEMENTS

Fort Monroe Brings Home the Gold

During the 22nd Annual Environment Virginia Symposium that took place at the Virginia Military Institute in Lexington, Virginia on April 6, 2011, a Governor's Environmental Excellence Awards ceremony took place. For the Government sector awards, the U.S. Army Fort Monroe Public Works Environmental Program took gold for their overall achievements. The following was posted in the awards ceremony program showcasing their accomplishments:

"Fort Monroe, home to the Army's Training and Doctrine Command, is a 565-acre installation located along the Chesapeake Bay in Hampton. The Fort was built between 1818 and 1834, designated a National Historic Landmark in 1960, and put on the National Register of Historic Places in 1966. It has been an E2 member of the Virginia Environmental Excellence Program since 2004. The installation is scheduled to transfer out of Army control in September 2011, as part of the Base Realignment and Closure Act. To help preserve Fort Monroe and the Chesapeake Bay for future generations, an extensive natural resources program has been implemented, including environmentally beneficial projects such as Bayscape landscaping, low impact development, rain gardens, and flora and fauna surveys. The Fort is home to the northernmost, largest native collection of southern live oaks, the oldest of which is estimated to be 467 years old. The Fort's comprehensive pollution prevention program achieved a solid waste diversion rate of 41% in 2010, resulting in a cost avoidance of just over \$63,000, as well as a 97% reduction in the use of pesticides based on a 2002 baseline. The installation has also made a significant commitment to public outreach, hosting annual Arbor Day and Earth Day celebrations as well as several community-wide tree planting and exchange events."

Secretary of the Interior appoints Kim Nielsen to National Historic Trail Advisory Council

Kim Nielsen, Naval History and Heritage Command, and member of the DoD Chesapeake Bay Working Group and Chesapeake Bay Quality Management Board was recently appointed to the 24 member Star-Spangled Banner National Historic Trail Advisory Council. Members of the Council, appointed by U.S. Secretary of the Interior Ken Salazar, will consult with the Secretary and the National Park Service on matters related to the trail, including trail management, public access, recreation opportunities, and interpretive programs along the trail route. The Advisory Council is authorized through 2021. The Star-Spangled Banner National Historic Trail and Star-Spangled Banner Scenic Byway connect the places, people, and events that led to the birth of our National Anthem during the War of 1812.

Secretary Salazar also announced the re-appointment of Mr. Nielsen to the 25 member Captain John Smith Chesapeake National Historic Trail Advisory Council. The Advisory Council was established in 2008 and is authorized through 2018. "The people appointed to serve on the Advisory Council contribute in many ways to the development of a rich educational and recreational trail experience for the public," said John Reynolds, Advisory Council chair. "Now that the trail's management plan is in place, we are anxious to help further trail developments segment by segment." The Captain John Smith Chesapeake National Historic Trail, extending approximately 3,000 miles on the Bay and tributaries, follows the routes of John Smith's exploratory voyages in 1607-1609 and offers trail visitors recreational and educational experiences on land portions as well as on the water. Primary interpretive themes center on 17th century American Indian societies and cultures and the natural and cultural resources of the Bay.

RainScaping by Kelly Duckworth, Michael Baker Jr., Inc.

Homeowners and communities throughout Anne Arundel County are taking action to reduce polluted runoff and prevent it from reaching our waterways. RainScaping practices improve water quality, restore habitat, and add beauty to the landscape. Additional significant benefits are increased property values and a reduction in a community's carbon footprint. Furthermore, fifty plus partners are implementing a RainScaping Campaign to improve the health of Anne Arundel County's tributaries and the Chesapeake Bay.

The campaign highlights pollutants carried to our waterways in stormwater runoff such as sediment, excess nutrients from overuse of fertilizers, pesticides, oils, metals, and other contaminants; as well as the lack of natural filtering processes and infiltration.



The RainScaping Campaign promotes a comprehensive approach to easy-to-use solutions to clean up our streams, creeks, rivers, and the Chesapeake Bay. RainScaping techniques such as installing rain gardens, native trees and shrubs, rain barrels, and permeable pavers are proven and widely-accepted attractive landscaping techniques that effectively manage stormwater runoff at the source, while protecting natural resources and providing wildlife habitat. The RainScaping Campaign is sponsored by the Chesapeake Bay Small Watershed Grants Program,

which is administered by the National Fish and Wildlife Foundation (NFWF).

Check out <http://www.youtube.com/watch?v=cYE6De8wSZA> on how to build a RainGarden or visit www.RainScaping.org for more information.



Green landscaping puts a LID on Runoff

by Terri Kaltenbacher, DPW Environmental Division at Aberdeen Proving Ground

The next time someone asks you to put a LID on it, don't take offense. They may simply be asking whether you've considered putting a green roof on that new building you are designing.

Low Impact Development, known as LID, is essentially a management approach using special landscaping techniques and small-scale green technologies to slow, filter and absorb stormwater. The overarching objective is to keep a construction site as close to natural, predevelopment conditions as possible. Protecting the natural water balance or hydrology of a site protects the overall watershed.

Congress has required federal agencies to provide national leadership to reduce water quality problems from stormwater runoff under the "Energy Independence and Security Act of 2007." By 2013, all military projects must incorporate LID technologies "to make water go up or down, instead of horizontally," according to Todd Beser of the Chesapeake Bay Team, USAG Aberdeen Proving Ground Department of Public Works.

Stormwater runoff in urban areas is one of the leading sources of water pollution in the United States. Impervious surfaces like paved parking lots and concrete walk ways do not allow stormwater to slowly soak into the ground, becoming cleaner in the process. Instead, this runoff picks up sediment and pollutants like nitrogen and phosphorus and flows into storm drains that dump directly into the Bay, disrupting the sensitive ecosystem.

Examples of LID techniques include establishing rain gardens, installing bioretention cells and infiltration planters, planting grassed swales, trees, and pocket wetlands up to a half-acre in size, and other revegetation efforts that use native plants and grasses when possible. Porous pavements also serve to slow the rate of runoff and increase water infiltration into the ground. Rain cisterns can capture rainwater to reuse for other purposes.

The Chesapeake Bay Team has recently partnered with Army Research Laboratory (ARL) and the Army Test Center (ATC) to take the lead on LID. Two projects have been chosen and centrally funded by the Office of the Assistant Chief of Staff for Installation Management as demonstration/pilot areas and are at 30 percent design phase, according to Chesapeake Bay Team Leader Steve Wampler.

The first test site is the ARL design and construction of a 475' x 75' unmanned aerial vehicle airfield on Spesutie Island. The second pilot project is retrofitting the entryway for ATC Building 400 by removing curbs and asphalt and replacing them with bioretention cells and permeable parking pavers.

"APG is getting rid of large stormwater management ponds and looking more at localized techniques such as grassed swales and rain gardens [in construction projects]," said Wampler. The driving force behind LID is to show new natural ways to manage stormwater at costs comparable to traditional engineering, while saving space and utilizing water more efficiently. Another added benefit of LID is that these changes are pleasing to the senses; they look attractive and often provide shade, breaking up vast expanses of pavement.

APG is home to two of the three healthiest and cleanest tributaries in the entire Bay region. In order to maintain this high water quality and keep moving forward, Wampler stressed that early, smart master planning is critical to LID success at APG and military installations nationwide.

"In the past, planning has not always considered the cumulative ecological impacts resulting from impervious surfaces in urban development that is an inevitable component of a changing and expanding military mission," Wampler emphasized.

Another member of the team, Rosemary Queen, thinks that it is time for a paradigm shift in our way of thinking-- that "LID should be an everyday practice in our construction projects in order to sustain our lands and help restore the Bay". "If Army installations are truly to be sustainable, a systemic change must occur in stormwater management—a commitment to LID principles in the installation-wide visioning and planning processes integrated into the design of specific site planning actions," said Queen.

For more detailed information on these projects, LID techniques, and regulations governing the LID requirement, visit the APG Blog at <http://apg.armylive.dodlive.mil/>.



Porous pavers installed in the office parking area near the Canal Creek Water Treatment Plant at Aberdeen Proving Ground South (Edgewood).



Chesapeake Bay Program Launches “Plant More Plants” Campaign Encouraging Homeowners to Grow Some Good in their Own Backyards

Personal Stewardship Campaign Rooted in a Healthier Chesapeake Bay

Taken from www.plantmoreplants.com

(Virginia Beach, Va., March 1, 2011) – From their backyards to the Bay, homeowners are hearing about an environmental awareness campaign taking root in the Richmond, Baltimore, the D.C. Metro area and Hampton Roads regions that aims to “grow some good.” The “Plant More Plants” campaign, led by the Virginia Department of Conservation and Recreation (DCR), with a number of other Chesapeake Bay Program partners in Virginia, Maryland and Washington, D.C., aims to encourage homeowners to “plant more plants” as a way to mitigate stormwater runoff and erosion and ultimately help improve the health of the Chesapeake Bay.

The message to homeowners is simple and encourages behavior they are already predisposed to do; by planting more plants, they not only improve their lawns and landscapes, they also help protect one of our most important resources – the Chesapeake Bay. The largest estuary in the United States, the Bay is a complex ecosystem that, along with its connecting waterways, provides habitat, food and protection for diverse groups of animals and plants. However, water quality in the Bay is poor, and the delicate ecosystems that exist within it are at risk.

“The real message behind this campaign is that we all take actions that impact the health of our local streams and the Chesapeake Bay. We can choose actions that are fun, improve our yards and homes and help local streams and the Bay. ‘Plant More Plants’ helps show you how,” said Gary Waugh, coordinator of the “Plant More Plants” campaign and public relations manager at the Virginia DCR.

Stormwater runoff is one of the fastest-growing sources of pollution and water quality degradation within the Chesapeake Bay; yet, many homeowners don’t realize the connection between their lawns, stormwater and impacts on water quality within the Bay. As spring approaches, rains threaten to wash the chemicals and fertilizers designed to make our lawns green and beautiful into our streams, rivers and, ultimately, the Chesapeake Bay. Once in our waterways, these pollutants fuel the growth of excess algae, which threatens the health of the Bay’s entire ecosystem. To improve water quality, the flow of pollution must be reduced.

By planting native trees, shrubs and perennials, homeowners can help filter stormwater and prevent runoff. “Plant More Plants” aims to put a spotlight on this issue, partner with industry organizations and advocates, educate consumers on ways they can help and provide Bay-friendly solutions and resources for homeowners as they seek to enhance their curb appeal.

Several of the organizations and advocates presently involved in the campaign include Virginia, Maryland and D.C. master gardeners, the Virginia Green Industry Council, the Chesapeake Conservation Landscaping Council, and the Marylanders Plant Trees Program. Each are finding ties to the campaign through mutual goals.

“Plant More Plants” was funded through a grant from the National Fish and Wildlife Foundation as part of their efforts to improve the Chesapeake Bay’s watershed. Through engaging in this campaign, “Plant More Plants” seeks to help homeowners make their yards more beautiful – and Bay-friendly – by adopting conservation gardening and lawn care practices that ultimately mitigate stormwater runoff and improve the overall health of the Bay.

“Plant More Plants,” a personal stewardship campaign implemented by the Chesapeake Bay Program, aims to encourage residential homeowners in the DC, Baltimore, Richmond and the Hampton Roads regions to plant more plants and adopt conservation landscaping behaviors that mitigate the harmful effects of stormwater runoff and ultimately improve the health of the Chesapeake Bay. Visit www.plantmoreplants.com or www.facebook.com/plantmoreplants for program information, seasonal lawn care tips, and native landscaping guides.

The Chesapeake Bay Program is a unique regional partnership that has coordinated the restoration of the Chesapeake Bay and its watershed since 1983. “Plant More Plants” is the second personal stewardship campaign created by Bay Program partners under the umbrella of The Chesapeake Club. This campaign, along with the earlier “Save the Crabs then Eat ‘Em” campaign, strives to share with residential homeowners practices that are beneficial to their lifestyle and to the Chesapeake Bay. The Chesapeake Club campaigns are brought to you by the individuals from the following organizations and localities: Virginia Department of Conservation and Recreation, Virginia Turfgrass Council, Chesapeake Bay Program, Chesterfield County, Henrico County, Hanover County, the City of Richmond, HR STORM, District of Columbia Department of the Environment, University of Maryland Center for Environmental Science, Maryland Department of Natural Resources and Maryland Department of the Environment.

For More Information:

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**PLANT
MORE
PLANTS**



On the Road to Recovery of the Chesapeake Bay Blue Crabs

by Sam Harris, Michael Baker Jr., Inc.

The Virginia Institute of Marine Sciences (VIMS) After Hours Lecture, welcomed Dr. Rom Lipcius for the presentation titled “On the Road to Recovery of the Chesapeake Bay Ecosystem: Blue Crabs and Native Oysters” on May 12, 2011 at the VIMS campus in Gloucester, Virginia. The lecture was open to the public and attendees included members of the consulting community, Gloucester locals, VIMS professors and students.

Dr. Rom Lipcius, a marine conservation ecologist, opened his presentation by telling the audience that it is the management actions of science that allow the recovery of blue crabs to be possible.

First, he told the audience of various ways crabs can be fished from the Chesapeake Bay: 1. Trot Lines, which are long lines held off boats that collect crabs as the boat is driven forward; 2. Crab Scrapes, which are claw-like devices that are dragged across sea grasses to collect crabs; 3. Crab Pots, the traditional method where crabs become trapped in a cage after entering through a funnel on the side; 4. Shredding, which is collecting and sorting a group of crabs based on the stage in which the crab is molting to prevent the crab’s cannibalistic behavior; and finally, 5. Dredging, which scoops massive amounts of crabs out of sediment where crabs bury themselves during winter months.

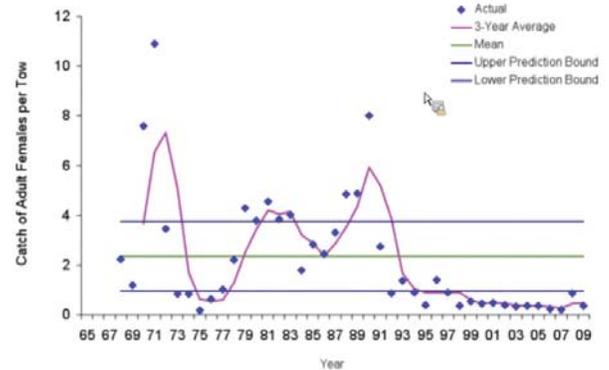
After going through details of the complexity of the blue crab fisheries, he spoke of the economical importance of the industry stating an estimated 300 million blue crabs are being removed from the Chesapeake Bay each year. The industry creates approximately \$80 million in revenue and is putting up to \$350 million dollars back into the national economy. The blue crab fishery is the most lucrative form of fishery in the Bay along with sea scallops. Even with the economical benefits and healthy nutrition, in 2008 the Chesapeake Bay blue crab fishery was declared a federal disaster.

Dr. Lipcius then showed the audience data from a blue crab population study from 1952 (Trawl Survey), though not as accurate as his own historic population study from 1990. On the graph below, there are two lines depicted; the higher one being the target percentage of the number of crabs that should be removed from the Bay for optimum benefits, both economically and ecologically. The lower line on the graph represents the predicted minimum number of crabs the population is able to withstand and still rebound. In summary, the Trawl Survey showed strong populations increasing through 1990 with the exception of a large drop in 1972 due to Hurricane Angles. However, after 1990, the population continued to decline and finally leveled out around the threshold percentage in 2008.

To allow the audience to further understand the complexities of managing the blue crab populations and fisheries, Dr. Lipcius gave his expert summary of the blue crab life cycle. In short, the female crab carries approximately 200 eggs from the low saline waters in the upper portions of the Bay to the more saline portions at the mouth of the Bay. Once hatched, during the March through September months, the microscopic larvae require a high salinity environment, due to their evolutionary routes as a tropical species. As with most marine species, there are numerous unknowns about the specifics during the post larvae stage and scientists question the effect of small changes in water currents on the sensitive younglings. As the juveniles

mature, molting 17 to 20 times until maturity, they move to less saline waters and migrate using evening tides, while foraging in tributary sea grasses. As a result of human activity and the fisheries industry, most crabs live one to two years; however, it is believed that in uninterrupted ideal conditions the blue crab has a lifespan of up to six years.

Trawl Survey



Next, Dr. Lipcius continued with a brief to the audience on historical and current blue crab management activities and results from those actions. Key collaborative management activities began with the implementation of protecting approximately 75% of the spawning grounds. The most effective management decision came after the announcement of the Federal Disaster, in 2008; the decision to abolish commercial winter dredging. Dr. Lipcius’ blue crab geospatial population data of the final 2008 winter dredging season and years prior to its abolishment showed unhealthy population levels. Years following, population data for 2009 and 2010 indicated an increase in the abundance of blue crabs throughout the lower portions of the Bay. This increase showed that without winter dredging the crab populations continued to flourish and the species’ recruitment, or new members due to reproduction, increased as well. As, Dr. Lipcius began to show graphs of the most recent data, the evidence revealed that the blue crab population rebounded without winter dredging. As a result, during 2009 and 2010, the population was above the target population line, which is the suggested abundance for optimum economic benefits and stability in population (see graph below).

Abundance of Spawning-Age Crabs



As the presentation came to a conclusion, Dr. Lipcius briefly explained that his current interests encompass overall Bay management for the protection of blue crabs emphasizing in eco-system based restoration, natural catastrophes and historical abundance patterns.



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Norfolk, VA 23501
DOD/DON Chesapeake Bay Program Office

Check it Out:

Maryland's \$25 Tree Credit

Obtain a coupon worth \$25 off the purchase of one tree with a retail value of \$50 or more at all participating retail nurseries and garden centers at www.trees.maryland.gov. The discount is taken at the register at the time of the sale. This is not a mail-in reimbursement. One coupon must be filled in for each tree purchased. Coupons must be filled in completely and signed by the customer to be valid. Coupon reimbursement is for retail sales only. Wholesale tree sales do not qualify. The coupon is valid for trees listed on the Marylanders Plant Trees Recommended Tree List, online at: <http://www.trees.maryland.gov>.

DoD Sustaining Military Readiness Conference 25-29 July 11, Nashville, TN

DoD personnel and stakeholders interested in military training and testing, natural and cultural resources management, and sustainable and compatible land, air, sea, and frequency use topics are invited to

explore the interdisciplinary nature of sustaining military readiness, share lessons learned and best practices among colleagues and stakeholders, and participate in a broad spectrum of informative training workshops. Detailed agenda, lodging and travel information can be found at www.smrconference.com.

NPDES Permit Writers Training on the Web

EPA has created a web-based training series based on its popular National Pollutant Discharge Elimination System (NPDES) Permit Writer's Course. This will allow students, staff, stakeholders, and the public to access NPDES permit program training content online. The Course is a five-day training session covering the key elements of NPDES permit development and is taught by experienced instructors. These recorded presentations enable one to review the material on demand in a self-paced environment to become familiar and comfortable with the concepts of the NPDES permit program. The NPDES web-based training series can be found at <http://www.epa.gov/npdes/training> under "Self-Paced Web Training."

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