



June/July 2011

The Dredging *Link*

Protecting the Bay with Shipboard Technology

Not all passengers going to and from the Port of Baltimore are human. And not all of them are welcome.

Hundreds of known or possible invasive species live in the Chesapeake Bay watershed and may be causing serious problems in the ecosystem. Some are aquatic organisms that likely arrived in the ballast water of ocean-going ships, or attached to their sides. The rapa whelk, for example, eats oysters and clams. The Chinese mitten crab may compete with the native blue crab. Still others are tiny microscopic organisms with the potential to affect the Chesapeake's food web.

Fortunately, the Port of Baltimore is now served by a state-of-the-art research center to help prevent more non-native species from entering Bay waters.

The Maritime Environmental Research Center (MERC) is a consortium of groups led by the University of Maryland Center for Environmental Science that tests the effectiveness of systems for removing non-native species from ballast water and explores ways to remove unwanted organisms attached to the sides of ships.

"Ultimately, we're trying to facilitate green shipping," said MERC director Dr. Mario Tamburri.

The Maryland Port Administration is the lead funder for the Baltimore-based center, which opened in 2008. Program partners include the Smithsonian Environmental Research Center, University of Maryland at College Park, University of Maryland Wye Research and Education Center, and Old Dominion University.

"Most of the work we do at MERC is not required,



Tamburri said. "The Port Administration is being incredibly proactive and progressive in supporting MERC and in addressing a variety of issues that are important to the environment."

MERC is one of the few organizations in the nation that provides this critical ballast water research.

"You need a whole team of people like chemists, engineers, biologists, toxicologists," Tamburri said. "There are very few places in the United States or in the world have the facilities and expertise to test these systems."

MERC has two Baltimore-based vessels for testing ballast water treatment systems. This fall, MERC will also christen a new mobile barge that will run tests at various locations in the Bay, where salinity and other conditions vary greatly.

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Finding effective treatments systems is critical for the shipping community because a new suite of regulations is limiting the number of organisms allowed in ballast water. Shipping companies are anxious to sort through the requirements and find methods that work.

“A lot of venders have ideas of how to achieve those levels, but they need facilities like ours to successfully get those ideas into operation,” Tamburri said.

MERC also provides agencies like the EPA and U.S. Coast Guard with independent performance data and provides full shipboard testing as the final step of system validation. “We meet the vessel in port and test how well it’s doing under real-world operation,” Tamburri said.

During the last four years, MERC has tested eight different treatment systems and conducted eight shipboard studies. The new mobile barge will test another two to three systems each year.

MERC also manages an on-line database that helps the maritime community sort through regulations for ballast water, air emissions, and other environmental regulations, which vary by location.

“Environmental regulations can be so complicated that vessels owners and operators often don’t even know they are breaking the rules,” Tamburri said. “We want to make it as easy as possible for people to know what the rules are.”

The creation of the Maritime Environmental Resource Center is partly due to the leadership of Maryland Representative Elijah Cummings in the U.S. Congress. Along with funding from the Maryland Port Administration, MERC is supported by the U.S. Maritime Administration, the U.S. National Oceanic and Atmospheric Administration, and the American Bureau of Shipping.

On May 24, 2011, the Maryland Port Administration (MPA) released a new environmental study of the offshore area surrounding a portion of the Sparrows Point steelmaking property known as Coke Point that will help the State evaluate the possible development of a portion of the Sparrows Point property as a dredged material placement site, and, at the same time, will provide data that can help guide the ongoing environmental clean-up efforts at the property.

The environmental study, known as a Risk Assessment, focused on the waters and sediment immediately surrounding Coke Point to determine the potential risks to human health and to the aquatic ecosystem from legacy contaminants related to steel-making activities. The Risk Assessment suggests that the long-term (30 years) exposure to contaminated sediments and surface waters adjacent to Coke Point may result in elevated risks to human health and ecological resources, and supports the need for remedial measures to address offshore contamination in these areas.

The 2,300-acre Sparrows Point property is subject to a 1997 Judicial Consent Decree, overseen by the Maryland Department of the Environment and the U.S. Environmental Protection Agency. The Consent Decree requires a comprehensive site investigation and cleanup to address contamination at the site.

Community activists who have been briefed on the Risk Assessment expressed appreciation to the MPA for this important contribution to the public’s understanding of contamination issues near Coke Point.

The executive summary of the Risk Assessment, as well as the full report, can be found on the MPA’s webpage at www.marylandports.com.

Follow-up: Native Bay Grasses

From June 8 thru June 11, 35,000 plugs of native Bay grasses were planted in a two acre area of a cell on Poplar Island. June 10th was designated as Port of Baltimore Day and 13 volunteers from the maritime industry participated. This event was sponsored by the U. S. Army Corps of Engineers, Maryland Port Administration, Maryland Environmental Service, National Aquarium in Baltimore, and Ports America Chesapeake. The purpose of the newest planting was to help stabilize the island, prevent erosion and provide a greater habitat for wildlife.



Left: Teresa Womer of Wallenius Wilhelmsen and David Stambaugh of Baltimore Maritime Exchange help plant grasses on Poplar Island