

AMERICA'S MARINE HIGHWAYS

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America's Marine Highways And the Environment

- Positive Benefits
 - Energy Efficiency
 - Reduced Landside Congestion and Emissions
 - Existing Lanes – No Loss of Green Space
- Biggest Challenges
 - Discharges to Water
 - Air Emissions
 - Invasive Species

America's Marine Highways Environmental Challenges

- Vessel Discharges to Water
 - Being Regulated by USEPA Under New Authority -- Clean Water Act
 - Cooling water, gray water, scrubber, oily water separator discharges, deck runoff, in-water hull cleaning, BALLAST WATER
 - States can have different standards!

Ballast Water and Hull Fouling

- The Challenge
 - How Clean is Clean?
 - What Can Technology Achieve?
 - What Can Science Measure?
 - Does the Technology Work Reliably?
- Maritime Administration Program
 - Three facilities to test the technology and improve the science

CAPE WASHINGTON - Baltimore



Hookup Between Ship and Technology – Bulkhead between Cargo Space and E.R.



The Work Area



Mesocosm Tanks



Chesapeake Bay - Based Barge



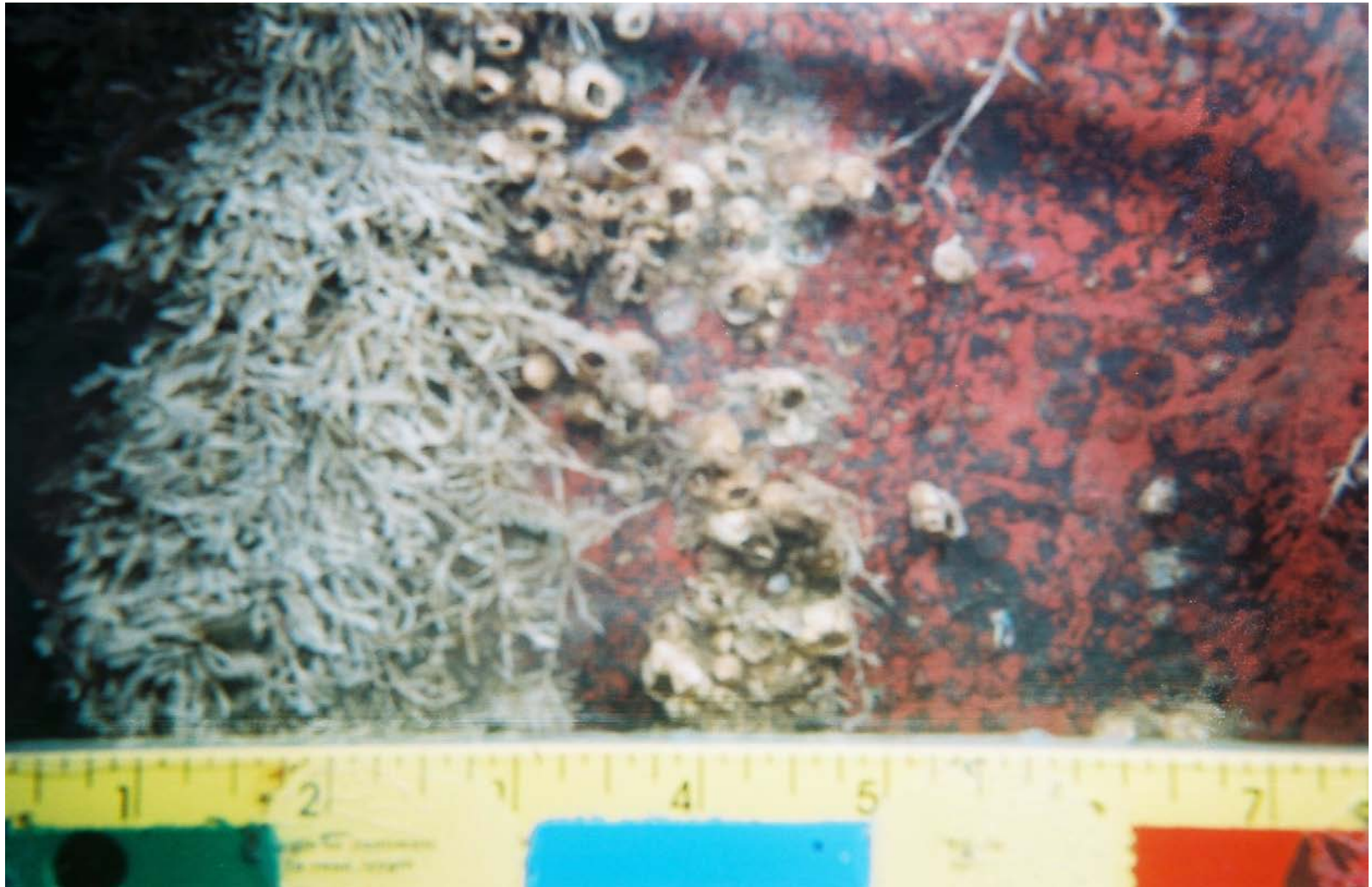
Great Lakes Land-Based Facility



**GOLDEN BEAR – Vallejo, CA
can accommodate the volume of water needed to
adequately test technologies. Added in 2010.**



New Venture – Hull Bio-Fouling





Typical Hull Cleaning Equipment



Testing of a Capture System



Air Emissions

- Emissions Control Area
 - Ultra Low Sulfur Fuel or Scrubbers or Other Technology
 - 200 Miles Captures Entire Marine Highway
- Challenge
 - Fuel Availability?
 - Alternative Fuels?
 - Technologies? – Limited Availability of Time Tested Marine Applications

Air Emission

- Maritime Administration Activities
 - Alternative Fuels
 - Investigating LNG Use – Including Feasibility Study for use in the Great Lakes and Other Marine Highway Applications
 - Testing of Renewable Fuels Based on Algae
 - 50/50 blend with ultra low sulfur aboard Maritime Academy School Ship – 2011
 - Follow-on study of modified blend – 2012
 - Future Cooperative Testing with Industry of Scrubbers and Other Technologies

America's Marine Highway

- Upcoming Activities
 - Maritime Administration will Hold 8-10 Environmental Outreach Meetings Through Spring 2012
 - The purpose of the meetings is to gather information from the public to inform the Agency of environmental concerns and issues along the major Marine Highway corridors.

THE END

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