REDUCING REGULATORY BURDENS, ENSURING THE FLOW OF COMMERCE, AND PROTECTING JOBS: A COMMONSENSE APPROACH TO BALLAST WATER REGULATION

(112–45)

JOINT HEARING

BEFORE THE

SUBCOMMITTEE ON
COAST GUARD AND MARITIME TRANSPORTATION

AND THE

SUBCOMMITTEE ON
WATER RESOURCES AND ENVIRONMENT

OF THE

COMMITTEE ON
TRANSPORTATION AND
INFRASTRUCTURE
HOUSE OF REPRESENTATIVES

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U.S. House of Representatives
Committee on Transportation and Infrastructure
Washington, DC 20515

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James H. Zoia, Democrat Chief of Staff

July 8, 2011

MEMORANDUM

TO: Members, Subcommittee on Coast Guard and Maritime Transportation and Subcommittee Water Resources and Environment

FROM: Staff, Subcommittee on Coast Guard and Maritime Transportation and Subcommittee Water Resources and Environment

RE: Hearing on "Reducing Regulatory Burdens, Ensuring the Flow of Commerce, and Protecting Jobs: A Common Sense Approach to Ballast Water Regulation"

PURPOSE

On July 13, 2011, at 10:00 a.m., in room 2167 of the Rayburn House Office Building, the Subcommittee on Coast Guard and Maritime Transportation and the Subcommittee on Water Resources and Environment will meet to receive testimony from two scientific bodies regarding the feasibility of regulating ballast water discharges, as well as to review current regulations governing the ballast water and other incidental discharges, and to explore options to improve these regulations to ensure the free flow of commerce, grow maritime jobs, and protect the environment.

BACKGROUND

Current Regulations

In order to maintain stability during transit, most ocean going vessels fill internal tanks with ballast water during the loading of cargo and then release it during unloading. Ballast water has long been recognized as one of several pathways by which invasive species are transported globally and introduced into coastal waters where they did not live before. Many aquatic nuisance species have been introduced into U.S. waters via ballast water discharges. One of the most well known is the zebra mussel in the Great Lakes.

Coast Guard Regulations:

Under the Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 and the National Invasive Species Act of 1996, the Coast Guard has implemented regulations to minimize the introduction of these organisms into U.S. waters. Under current regulations promulgated by the Coast Guard in July 2004 (69 *Fed. Reg.* 44952-44961), all vessels that are engaged on an international voyage and bound for a U.S. port are required to conduct ballast water exchange before the vessel enters the U.S. Exclusive Economic Zone (EEZ) which extends roughly 200 miles from the U.S. coast. The intent of ballast water exchange is to discharge or kill any near coastal organisms that inhabit ballast water, and prevent the discharge of those alien organisms into U.S. waters. It is not clear how effective ballast water exchange is in preventing introductions of invasive species because it does not remove all organisms from ballast tanks or sediments that settle to the bottom of the ballast tanks. In addition, no significant monitoring program currently exists to establish a pre- or post-exchange baseline for the introduction of aquatic invasive species in U.S. waters.

EPA Regulations:

The Federal Water Pollution Control Act of 1972, popularly known as the Clean Water Act (CWA), regulates the discharge of pollutants into U.S. waters. Unless the discharge is otherwise exempt from permitting, individuals, companies, municipalities, and others who discharge pollutants from point sources must do so in compliance with a permit issued by the Environmental Protection Agency (EPA) under the National Pollution Discharge Elimination System (NPDES) permit program (established under section 402 of the CWA, 33 USC 1342) or by one of the 45 states that issue permits in lieu of the EPA.

On May 22, 1973, EPA first promulgated a regulation excluding, from the requirement to obtain an NPDES permit, certain discharges from vessels, including the discharge of sewage from vessels; effluent from properly functioning marine engines; laundry, shower, and galley sink wastes (collectively known as graywater); as well as "any other discharge incidental to the normal operation of a vessel," which includes ballast water (40 C.F.R 122.3(a)).

In December 2003, the long-standing exclusion of discharges incidental to the normal operation of vessels from the NPDES program became the subject of a lawsuit in the U.S. District Court for the Northern District of California. The lawsuit arose from a January 13, 1999, rulemaking petition submitted to EPA by a number of parties concerned about the environmental effects of ballast water discharges. The petition asked EPA to repeal its regulation that excludes certain discharges incidental to the normal operation of vessels from the requirement to obtain an NPDES permit. The petition asserted that vessels are "point sources" requiring NPDES permits for discharges to U.S. waters; that EPA lacks authority to exclude point source discharges from vessels from the NPDES program; and that ballast water must be regulated under the NPDES program because it contains invasive plant and animal species, as well as other materials of concern. In March 2005, the Court ruled the

regulatory exemption for discharges incidental to the normal operation of vessels exceeded the EPA's authority under the CWA (*Northwest Envtl. Advocates et al. v. United States EPA*, 2005 U.S. Dist. (N.D. Cal., 2005). EPA appealed the ruling, but the Ninth Circuit Court of Appeals upheld the District Court decision in July 2008.

Pursuant to the Court order, in December 2008, EPA promulgated final regulations establishing a Vessel General Permit (VGP) under the NPDES program to govern ballast water and other discharges incidental to the normal operation of vessels. The VGP requires vessel operators to be in compliance with best management practices covering 26 types of discharges incidental to normal vessel operations, including deck runoff, air conditioner condensate, bilge water, graywater, and cooling system discharge. With respect to ballast water, the VGP incorporates the Coast Guard's mandatory ballast water management and exchange standards. Vessel operators must maintain records with EPA indicating they are in compliance with training, inspection, monitoring, and reporting protocols, as well as implement any corrective actions upon identification of violations. Vessel operators are required to file a notice of intent (NOI) indicating they intend to be covered by the VGP. Approximately 45,000 vessels currently operate under an NOI with the EPA.

Vessel operators that do not file an NOI, or are not in compliance with the VGP or an individual permit governing these discharges can be found to be in violation of the CWA. In addition to criminal penalties, violations of the CWA can carry civil penalties totaling up to $32,500 per day per violation. Under a memorandum of understanding with EPA, the Coast Guard began a VGP enforcement and compliance monitoring program in March 2011. Under 14 U.S.C. 2, the Coast Guard has the authority to enforce all federal laws on, under, or over the high seas and in U.S. waters.

To supplement federal and state enforcement of the CWA, section 505 of the law (33 U.S.C. 1365) empowers private citizens to bring suit against alleged violators. A citizen, after notifying the alleged violator of their intent to file suit, may sue for injunctive relief (court orders prohibiting the pollution from continuing), civil penalties, and the prevailing party may be reimbursed for legal costs and attorneys' fees. However, since the 1987 Supreme Court decision in *Gwaltney vs. Chesapeake Bay Foundation*, citizens have been prohibited from suing for wholly past violations and must be able to demonstrate that future violations are likely to occur. Also a citizen suit may be stayed by EPA or state action.

State, Territory, and Tribal Regulations:

Under section 401 of the CWA (33 U.S.C. 1341), those seeking federal license or permit to conduct activities that may result in a discharge into U.S. waters must first receive a water quality certification from the state, territory, or Indian tribe in which the activity may occur that the permitted discharge will comply with state water quality requirements. These 401 certifications may require those seeking a federal permit to comply with additional water quality regulatory requirements when conducting activities.

With respect to the VGP, 26 states, 2 Indian tribes, and 1 territory have filed 401 certifications requiring vessel operators to be in compliance with local water quality regulatory requirements. As a result, to transit U.S. waters, vessel operators must ensure they are in compliance with Coast Guard and EPA regulations, as well as over two dozen state, territory, or tribal regulations governing 26 discharges.

Ensuring a vessel is in compliance with federal as augmented by state 401 certifications under the VGP can be difficult, as some of the state certifications are contradictory in nature. For instance, New York will be requiring vessels to install ballast water treatment systems to eliminate organisms at a rate 100 times greater than the international standard proposed by the International Maritime Organization (IMO) (see discussion below). Meanwhile, Great Lakes states such as Ohio are only requiring vessels to install treatment systems that meet IMO standards. In addition, some states permit ballast water treatment systems which use chlorine as a biocide, while other prohibit them. Finally, standards governing the discharge of bilge water, graywater, and other incidental discharges also can vary from state to state.

Under current law, any recreational vessel that are not subject to Coast Guard inspection and carrying paying passengers or engaged in commercial use are permanently exempt from the VGP and related permits regulating discharges incidental to the normal operation of a vessel (33 U.S.C. 1342(r)). Congress has also enacted a temporary moratorium of the VGP for commercial fishing vessels regardless of size, as well as commercial vessels less than 79 feet in length (Public Law 111-215). The moratorium expires on December 18, 2013. The EPA estimates there are approximately 140,000 vessels currently subject to the moratorium.

Future Regulations

International:

On February 13, 2004, the IMO agreed to the International Convention for the Control and Management of Ships' Ballast Water & Sediments (Convention). The Convention, if ratified by a sufficient number of nations and entered into force, will be the first time international law has attempted to minimize the spread of nonindigenous aquatic organisms by requiring vessels to manage their ballast water using ballast water treatment systems and procedures. The Convention also would establish performance standards applicable to ballast water treatment which would prohibit the release of ballast water containing more than 10 organisms that are greater than 10 micrometers in size per cubic meter of ballast water or certain concentrations of smaller size classes of organisms (the IMO D-2 standard).

The Convention will enter into force only after it has been ratified by at least 30 IMO member nations representing more than 35 percent of global merchant shipping tonnage. As of October 2010, 28 nations have ratified the Convention, representing

25.43% of world merchant shipping tonnage. The United States currently is not a party to the Convention.

Coast Guard:

The Coast Guard released a Notice of Proposed Rulemaking (NPRM) in 2009 to amend its regulations on ballast water management (74 FR 44632). The NPRM, which is currently at Department of Homeland Security for final review and approval, establishes a standard for the allowable concentration of living organisms in vessel ballast water discharged in U.S. waters and creates a two-phase implementation plan. It would require all vessels operating in U.S. waters or bound for ports in the U.S. to install and operate a Coast Guard approved ballast water management system (BWMS) before discharging ballast water into U.S. waters.

The proposed rule includes a phase-in schedule for complying with both the phase 1 and phase 2 proposed ballast water discharge standard based on the vessel's ballast capacity and build date. All vessels would be required to manage their ballast water through a Coast Guard approved BWMS and meet either the proposed phase 1 or phase 2 discharge standard, as applicable, or retain their ballast water onboard. The phase 1 standard is the same as the standard adopted by the IMO. The proposed phase 2 standard is 1,000 times more stringent than the phase 1 standard. The Coast Guard notes that reliable technology to achieve the phase 2 standard and a testing protocol to ensure compliance with the standard does not yet exist. As a result, the Coast Guard proposes a practicability review to ensure a verifiable system is available to meet the phase 2 standard before mandating the installation of such system.

EPA:

In December 2013, EPA's current VGP expires. EPA is planning to propose a new draft VGP by November 30, 2011, and take final action on the new VGP by November 30, 2012. The new VGP would become effective when the current VGP expires. Pursuant to a March 2011 Court settlement with several environmental groups and the State of Michigan (*Natural Resources Defense Council v. EPA*, Case No. 09-1089), EPA agreed to replace the current requirement for ballast water exchange with new numeric concentration-based limits on the discharge of organisms in ballast water in the draft VGP. The draft VGP will also include monitoring standards for ballast water treatment systems.

Scientific Studies

EPA and the Coast Guard jointly tasked the National Research Council (NRC) of the National Academies of Sciences and the EPA Office of Water tasked the EPA Science Advisory Board's Ecological Processes and Effects Committee (SAB) to report back on several aspects of regulating the discharge of ballast water.

National Research Council:

EPA and the Coast Guard asked the NRC to:

1. Evaluate the state of the science of various approaches that assess the risk of establishment of aquatic nonindigenous species given certain concentrations of living organisms in ballast water discharges.
2. Recommend how these approaches can be used by regulatory agencies to best inform risk management decisions on the allowable concentrations of living organisms in discharged ballast water in order to safeguard against the establishment of new aquatic invasive species, and protect indigenous populations and other beneficial uses.
3. Evaluate the risk of successful establishment of new aquatic nonindigenous species associated with a variety of ballast water discharge limits that have been used or suggested by the international community and/or domestic regulatory agencies.

The NRC completed its report (*Assessing the Relationship Between Propagule Pressure and Invasion Risk in Ballast Water*) in June 2011 and recently released its findings. The NRC found the following:

- An assumption in the development of a numeric standard for live organisms per unit volume ballast water discharged is that there is a direct and quantifiable relationship between the density of individuals released in a ballast discharge and the probability of their eventual establishment. While a relationship between density and establishment probability may exist, many other factors also affect establishment success in aquatic systems. Additionally, ballast water is just one of several pathways for the introduction of nonindigenous species or pathogens. It is abundantly clear that reducing populations will reduce the probability of invasions when controlling for other variables. Thus, any method that attempts to predict invasion outcomes based upon only one factor without controlling for the others is likely to suffer a high level of uncertainty.
- Available methods for determining a numeric standard for ballast water discharge are limited by a profound lack of data to develop and validate models determining risk of invasion.
- However, a discharge standard, for example the Coast Guard phase 1 or IMO D-2 standard, should be established. This will reduce the likelihood of invasion in coastal ecosystems beyond what we presently experience and will serve as a benchmark to use in future studies.
- Steps should be taken to develop sampling protocols, standardize methods and analytical processes, and create the framework necessary to produce high-quality data specifically needed to populate risk-release models. Once data can be collected, experiments and studies can commence to determine the efficacy of numeric limits on reducing the risk of invasion from nonindigenous species or pathogens.

The NRC's complete report is available on EPA's NPDES Website: http://cfpub.epa.gov/npdes/vessels/programdevelopment.cfm

Science Advisory Board Report:

The EPA Office of Water requested the SAB to review and provide advice regarding whether existing shipboard treatment technologies can reach specified concentrations of organisms in vessel ballast water, how these technologies might be improved in the future, and how to overcome limitations in existing data. On June 16, 2011, the SAB voted on the final changes to their report (*Efficacy of Ballast Water Treatment Systems*), which is expected to be released soon.

The SAB found the following:

- Five categories of existing BWMS are currently able to comply with the least stringent standard proposed by the USCG (i.e., the Coast Guard phase 1 standard, which is equivalent to the IMO D-2 standard). However, no current BWMS can meet a 100x or 1000x standard (i.e., the Coast Guard phase 2 standard) or the complete removal of all living organisms.
- The IMO D-2/Coast Guard phase 1 performance standards for discharge quality are currently measurable. However, currently available methods prevent testing of BWMS to any standard more stringent than the IMO D-2/Coast Guard phase 1 standard and make it impracticable for verifying a standard 1000x more stringent. Verification of standards that set very low organism concentrations (those more stringent than the Coast Guard phase 1/IMO D-2 standard) may require water samples that are too large to be logistically feasible. Furthermore, a zero detectable discharge standard is not statistically verifiable.
- The primary impediments to the ability of shipboard systems to meet stringent discharge standards beyond exiting technologies is that treatment processing plants will likely need to be large, heavy, and energy intensive. Many existing vessels may be unable to overcome these barriers through retrofitting. More stringent standards may require a fundamental shift in how ballast water is managed. The SAB recommends that one or more pilot projects be commissioned to explore new approaches to ballast water treatment, including tests of ballast water transfer and treatment at a reception facility.
- Any ballast water management strategy to decrease the rate of successful invasions by nonindigenous species or introduction of pathogens should be part of an overall risk-based management plan that includes methods to reduce invasion events, process and environmental monitoring, containment, and eradication. Emphasis only on one aspect, the initial introduction of organisms, is not likely to reduce the risk of invasions as efficiently or as cost effectively as a risk assessment approach that considers all the stages of the invasion process including survival after introduction.

The SAB's draft report is available on EPA's NPDES Website:
http://cfpub.epa.gov/npdes/vessels/programdevelopment.cfm

WITNESSES

Panel 1

Vice Admiral Brian Salerno
Deputy Commandant for Operations
United States Coast Guard

Mr. James Hanlon
Director
Office of Wastewater Management
Environmental Protection Agency

Dr. Deborah Swackhamer
Chair
EPA Science Advisory Board

Dr. James Carlton
Chair
Committee on Numeric Limits for Living Organisms in Ballast Water
National Research Council

Panel 2

Mr. Thomas Allegretti
President
The American Waterways Operators
On behalf of
Shipping Industry Ballast Water Coalition

Mr. Michael Jewell
President
Marine Engineers' Beneficial Association

REDUCING REGULATORY BURDENS, ENSURING THE FLOW OF COMMERCE, AND PROTECTING JOBS: A COMMONSENSE APPROACH TO BALLAST WATER REGULATION

WEDNESDAY, JULY 13, 2011

HOUSE OF REPRESENTATIVES, SUBCOMMITTEE ON COAST GUARD AND MARITIME TRANSPORTATION, JOINT WITH THE SUBCOMMITTEE ON WATER RESOURCES AND ENVIRONMENT, COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE,

Washington, DC.

The subcommittees met, pursuant to call, at 10:00 a.m., in Room 2167, Rayburn House Office Building, Hon. Frank LoBiondo (chairman of the Subcommittee on Coast Guard and Maritime Transportation) presiding.

Mr. LOBIONDO. Good morning. Subcommittee hearing will come to order.

The joint subcommittees are meeting today to review the confusing, contradictory, and unsustainable approach to the regulation of ballast water and other incidental discharges from vessels that currently exist and explore options to simplify and improve it.

I think we can all agree on the importance of reflectively regulating ballast water discharges. Invasive species have threatened ecosystems and the industries that rely on those ecosystems across the country.

However, the current system of regulation is killing jobs and impeding the flow of commerce, which is vital at any time but especially now for our economic recovery.

Currently the Coast Guard and the EPA have developed separate regulations under two different Federal laws to govern the discharge of ballast water. The EPA's ballast water program under the Clean Water Act is especially burdensome and troublesome as it allows each individual State to add requirements on top of the Federal regulations; 29 States and tribes have done just that.

And as you can see in the chart on the screens, which we do have up, the result is differing ballast water or incidental discharge standards for the vast majority of these States and tribal areas.

[The information follows:]

Ballast Water & Incidental Discharge Regulation under the Clean Water Act

State	Ballast Water Discharge Standard	Bilge Water Discharge	Graywater Discharge	Other Incidental Discharges
Coast Guard	Flushing			
EPA Vessel General Permit (VGP)	Flushing	May need to be treated. Should be discharged outside 1 nm from shore	Only certain detergents are acceptable. Should be discharged outside 1nm from shore	VGP requires the use of several best management practices to reduce the impact of 23 other discharges
California	No detectable living organisms > 50 µm; 1000X IMO for all other org size classes. (applies to new vessels in 2010 or 2012 & existing vessels in 2014 or 2016)	Prohibited	VGP	VGP
Connecticut	IMO or VGP	VGP	Prohibited	No in-water hull cleaning
Florida	VGP	VGP	Must be treated to at least [illegible]	Dissolved oils discharged may not exceed 5 mg per liter
Georgia	VGP	VGP	Must be treated by marine sanitation device first	VGP
Guam	VGP	VGP	VGP	Discharges in coral spawning areas prohibited
Hawaii	Treatment by use of biocides or discharges at high or low temperatures prohibited	VGP	VGP	Discharges may not be harmful to or interfere with the use of the water
Idaho	VGP	VGP	Prohibited in certain areas	VGP
Illinois	IMO. No more than 5 ug of chlorine per liter may be discharged after processing	Must be treated	VGP	None shall not violate Illinois Water Quality Standards
Indiana	IMO. No more than 2 ug chlorine per liter may be discharged after processing	VGP	VGP	None shall violate Indiana Water Quality Standards
Iowa	Requires Open Sea Exchange	VGP	VGP	VGP
Kansas	VGP	VGP	VGP	No discharge may alter the taste/odor/color of the water
Maine	VGP	VGP	Prohibited from passenger vessels without authorization	No in-water hull cleaning
Massachusetts	VGP	VGP	VGP	
Michigan	Prohibited without certificate. No more than 38 ug chlorine per liter may be discharged after processing	VGP	Prohibited	Cannot lower the water quality of certain state waters
[illegible]	[illegible]	VGP	VGP	VGP
Missouri	VGP	VGP	VGP	VGP
Nebraska	VGP	Prohibited	Prohibited	VGP
Nevada	VGP	VGP	VGP	VGP
New Hampshire	VGP	VGP	VGP	VGP
New Jersey	VGP	VGP	VGP	VGP
New York	100 X IMO (applies to existing vessels in 2013) 1,000 X IMO (applies to new vessels in 2013)	Prohibited	Prohibited	No discharge may alter the taste/odor/color of the water
Ohio	IMO. No more than 38 ug chlorine per liter may be discharged after processing	VGP	VGP	VGP
Pennsylvania	IMO	VGP	VGP	No discharge may alter the taste/odor/color of the water
Rhode Island	VGP	VGP	VGP	VGP
[illegible]	[illegible]	[illegible]	VGP	VGP
Vermont	VGP	VGP	VGP	VGP
Wisconsin	100 X IMO if technically feasible	VGP	VGP	VGP
Wyoming	State review required for certain waters	State review required for certain waters	State review required for certain waters	State review required for certain waters

Mr. LOBIONDO. While this provision of the Clean Water Act functions well for factories that are fixed in one location, it simply does not work for vessels engaged in interstate commerce or international commerce. It is unreasonable to ask a vessel operator to comply with two Federal standards and as many as 29 different State and tribal standards, several of which are not even achievable.

Let's take an example: The State of New York, what are they doing? New York is in the process of implementing standards for ballast water discharge that are 1,000 times stricter than the upcoming IMO requirements. As the Science Advisory Board will point out today, a standard 1,000 times IMO is simply not achievable and not verifiable. So what are we look—so what we are looking at is New York State dictating to the whole industry what they have to meet, and that is an impossible standard. And if they fail to meet that standard, they then face a daily fine of over $32,000. That is $32,000 a day to meet something that is impossible to meet.

For entering the Saint Lawrence Seaway or the Port of New York and New Jersey. And this is absurd and ridiculous and cannot be allowed to stand.

The problem is not just limited to ballast water. Other discharges, such as bilge water, gray water, deck wash, and even the condensation from air conditioners, is now being regulated by the EPA and the States in a confusing and contradictory manner. The current system threatens our international maritime trade. It is driving industry away from coastwise trade. It is undermining our attempts to revitalize the U.S.-flagged fleet, and simply it is killing jobs. It is hurting our economy.

I hope our witnesses will address these concerns and offer ideas on how they can more efficiently and uniformly regulate these discharges.

Additionally, I look forward to hearing from our witnesses representing the scientific community, specifically I am interested in their views on what the standards should be and the availability of technology to meet that standard. In other words, is it workable in the real world?

My understanding is that both the Science Advisory Board and the National Research Council reports indicate that moving forward with the IMO standard is appropriate at this time. If this is the case, I think we will finally have a clear nonpartisan reason to endorse that standard as a baseline. I hope to hear more on your research so that we can use the specific finding to inform much needed and much delayed legislative action.

We have to overcome this mind set that mandating a dozen different unachievable standards, each more stringent than the next, somehow protects our environment. It does not. The time has finally come to enact a clear, effective and uniform national standard that utilizes available and cost-effective technology to reduce the risk of future aquatic invasions. We cannot afford to delay any longer, as ballast water continues to threaten our environment and our economy.

I would like to thank Chairman Gibbs of the Water Resources Subcommittee for agreeing to co-chair this hearing today.

And I want to thank the witnesses for taking your time to appear here today.

At this part of the hearing, we will have a large number of witnesses that we want to hear from. We will ask that opening statements be limited to the chairs and ranking members. Other Members are welcome to submit their statements for the record or use their time during questions to make their statements.

With that, I would like to yield to Mr. Larsen for his opening statement.

Mr. LARSEN. Thank you, Mr. Chairman.

Today, we review current information and new recommendations related to the discharge of ballast water and other pollutants from ships. I hope that following today's hearing, we can develop bipartisan legislation to address these discharges.

Mr. Chairman, the title of today's hearing encompasses three concepts: reducing regulatory burdens, ensuring the flow of commerce, and protecting jobs. While I support all three, I believe we can do more.

Reducing regulatory burdens, while advisable in many instances, cannot be a goal in and of itself. As we have learned from previous experience in the Deepwater Horizon disaster, the Wall Street meltdown, and the sub-prime mortgage crisis, when we have regulations in place that can actually protect lives, property, and the environment, we can actually get a better result.

We should focus on smart regulations that accomplish national goals, grow the economy, and protect the public health and the environment.

I also want to do more than just ensure the flow of commerce and protect jobs. I want to be sure that we are expanding the flow of commerce and increasing the number of jobs. At our subcommittee hearing on June 14, we heard of opportunities to grow our economy by enhancing our marine transportation system.

Mr. Chairman, I look forward to working with you and all interested members of the committee to implement the investments in people and property presented to the subcommittee on that day.

When the district court in California made its decision in March of 2005 that discharge from vessels could not be exempt from regulation from the Clean Water Act permitting requirements, both EPA and this committee began the process of determining how to comply with that court's decision and whether changes to the law were necessary. Congress responded with two bipartisan pieces of legislation, and the EPA responded with a general permit.

For small recreational vehicles, Congress developed and enacted the bipartisan Clean Boating Act of 2008. The law exempted recreational boats from permitting requirements, but in return for that exemption, the law tasked EPA and the Coast Guard with developing best management practices to protect water quality. The result will be improvements in water quality without the need for permitting individual boats, an example of a smarter bipartisan legislative response.

A second bipartisan response that we have had in the past to clean water issues, Mr. Chairman, is that Congress developed legislation that provides a moratorium from permitting requirements for nonballast water discharges from fishing vessels and smaller

nonrecreational vessels until December 2013. This moratorium is to allow EPA, Congress and the boating community more time to analyze the impacts of discharges from vessels and develop the appropriate legislative or regulatory response.

EPA's response to the court's decision is a vessel general permit for those vessels and discharges not covered by the legislation. That permit expires December 2013, and the general permit contains a requirement that apply to large commercial vessels, including discharges of ballast water.

At this point, EPA has done about as much as it can with the law and the court's decision, and any additional action concerning the Clean Water Act will be up to this committee and Congress.

I bring these up, Mr. Chairman, because this committee should continue its bipartisan approach and develop legislation that resolves the uncertainty surrounding discharges of ballast water and other discharges from vessels. The goals of the legislation should be to help the EPA and the Coast Guard, ensure that water quality is protected and to allow vessels to operate safely and cost effectively.

For example, on issues of safety and cost effectiveness, I have heard from representatives of the tug and barge industry in my district raising issues about what we should consider. They asked that we carefully consider the impacts of differing State laws or requirements on navigation as we consider a legislative approach to ballast or other discharges.

The issues we need to consider are well-known and include: Will discharges from vessels be addressed under the Clean Water Act, some other law, or some combination of laws? What standards will be set for pollutants and species and discharges? Will the discharge standards be uniform across the country? What will the role of the States be in addressing vessel discharges? How might we address different types of vessels?

While there is not yet a consensus on the resolution of these issues, I believe that one is available. Given the opportunity, the Coast Guard Subcommittee and the Water Resources Subcommittee can work together in a bipartisan way to develop legislation that effectively addresses discharges from ships and boats.

So I look forward to today's witnesses, Mr. Chairman, and to hear how they seek to help us address this critical water quality issue.

Mr. LOBIONDO. Thank you, Mr. Larsen.

We will now turn to Chairman Gibbs of the Water Resources Subcommittee.

Mr. GIBBS. It is my pleasure to join Chairman LoBiondo and the Coast Guard Committee to hear testimony on the ballast water discharge regulations today. A necessity to maintain stability during water board transit, ballast water has also will been recognized as one of the ways invasive species are transported globally.

Lawsuits filed by environmental groups and the subsequent March 2006 court decision require the Environmental Protection Agency to regulate and issue point-source discharge permits under the National Pollution Discharge Elimination System, NPDES.

Pursuant to a court order, the EPA established a vessel general permit. Vessel operators that did not file a notice of intent to com-

ply with a vessel general permit can be found in violation of the Clean Water Act, a criminal and civil offense. In addition to the Coast Guard and EPA standards, the discharge of ballast water is managed by an assortment of international, State, territorial, and tribal regulations. As a result, our Nation's vessel owners and operators must ensure that they are in compliance with a burdensome patchwork of regulations. Changes in ballast water regulation loom on the horizon.

An international standard has been ratified in 28 nations and could become the first international method for controlling invasive species in ballast water. Current EPA regulation is set to expire December 2013. Both the Coast Guard and the EPA have proposed new methodologies of regulation. States have also proposed new and, in some cases, unrealistically stringent standards.

As new regulations are considered the Coast Guard and EPA have asked for scientific studies that would provide them with a better understanding of ballast water management. The studies found that inflexible regulation has not necessarily provided more effective control of invasive species. Also, technology hasn't caught up with the regulations. We simply do not have the technology to uphold some of the proposed standards.

As we consider ballast water standards, we should not burden our shippers with unattainable, unrealistic, expensive regulations that have not demonstrated a significant environmental benefit. Instead, we need a commonsense approach that can be enacted quickly, protects the environment, reduces red tape, grows maritime jobs and opens the flow of maritime commerce.

Thank you, Mr. Chairman, and I look forward to the hearing and look forward to the witnesses.

Mr. LOBIONDO. Thank you, Mr. Gibbs.

Now we will turn to Ranking Member Mr. Bishop for a statement. Thank you.

Mr. BISHOP. Thank you, Mr. Chairman.

Thank you to both of the chairmen for holding this hearing.

The spread of invasive species as a result of ballast water discharges has significant impacts. While the Long Island sound, which borders my district on its northern edge, has fortunately not had significant problems, there are many areas of the country where invasive species introduced through ballast water are wreaking havoc on ecosystems and economies.

Consider the Great Lakes. Zebra mussels clog water intake pipes, impede recreational activities by accumulating on boats, docks, and buoys and have a wide range of impacts on the Great Lakes' native species. The States and Federal Government have spent two decades trying to control zebra mussels at an estimated cost of $500 million per year.

The San Francisco Bay Area, where oceangoing ships from around the globe come into port, has the dubious distinction of being the most invaded aquatic ecosystem on earth. The economic and environmental costs associated with invasive species are mind boggling, as green crabs originally from the Black Sea feast on native shellfish and Chinese mutant crabs weaken the levee system when it burrows into the banks. Thousands of other species also

cost the State hundreds of millions of dollars a year in lost revenues and mitigation expenses.

In short, controlling invasive species after they have been introduced through ballast water discharges is often difficult, if not impossible, and extremely costly. So while it is easy to categorize ballast water discharge rules as yet another regulatory burden, as the title of this hearing implies, the facts are much more complex.

It is true that there are costs associated with ballast water controls, but the costs of doing nothing are much greater. It makes sense that we should implement discharge standards that are technologically feasible, but we should not become complacent with existing technology. We should encourage and support the development of new technologies that will reduce costs while providing greater benefits in terms of ballast water treatment. That is good for business. It is good for jobs, and it is good for the environment. It is a win-win-win.

Finally, while I certainly understand the argument for a consistent national discharge standard for ballast water given the interstate nature of maritime commerce, I hope we will all find it ironic that some would be arguing over the need to preempt States at the very time when this committee just reported H.R. 2018, the Clean Water Cooperative federalism Act, that would turn implementation of virtually the entire Clean Water Act over to the States. One has to wonder how divergent the discharge standards for ballast water would become if that bill were to ever take on the force of law.

In closing, I thank the chairman again for holding this hearing. I look forward to hearing from our witnesses on this important subject. Before I yield back, Mr. Chairman, I ask unanimous consent to enter into the record a letter from 25 environmental organizations in which they state their views on this issue.

Mr. LOBIONDO. Without objection, so ordered.

[The information follows:]

****Alliance for the Great Lakes**Beyond Nuclear**Citizens Natural Resources Association of Wisconsin**Coalition for a Nuclear-Free Great Lakes**Don't Waste Michigan**Freshwater Future**Friends of Wetlands**Great Lakes Sport Fishing Council**Great Lakes United**Great Lakes Environmental Law Center**Izaak Walton League of America- Great Lakes Committee**Izaak Walton League of America- Ohio Division**Lake Erie Region Conservancy Michigan Charter Boat Association**Michigan Wildlife Conservancy**Milwaukee Riverkeeper**National Wildlife Federation**Nature Abounds**Nukewatch**River Alliance of Wisconsin**Save the Dunes**Save the River and Upper St. Lawrence Riverkeeper**Vera Cruz Yacht Club**Winnebago Lakes Council**Wisconsin Wildlife Federation**

February 28, 2011

Dear Honorable Representatives and Senators:

The undersigned 25 organizations from across the eight Great Lakes states are writing to members of the Great Lakes delegation to express our opinions and concerns with introducing ballast water legislation in the 112th Congress.

Our organizations have been engaged in abating the threat that invasive species pose to our environment, health and economy. Throughout the years, many of the undersigned organizations have supported a legislative approach to improving protection from dirty ballast water discharges, including the National Aquatic Invasive Species Act, and Title V of the Coast Guard Reauthorization Act in 2008.

Since 2008, we have shifted our focus from a legislative approach and have invested heavily in strengthening regulations under existing Coast Guard and Environmental Protection Agency authority, and believe both agencies should retain authority, and improve regulations, over invasive species transported by commercial vessels. Our submissions to public comment opportunities articulate clear support for, and recommendations to, improve regulations under existing authority of both agencies. Until federal regulations adequately protect the environment, we have supported and urged the strengthening and coordination of state-level requirements in the Great Lakes and St. Lawrence River pertinent to ballast water.

Some of the recommendations that we have consistently conveyed to both the federal agencies and the states include: setting a zero discharge water-quality-based effluent limitation as a goal; accelerating timelines for implementation of best available technology; preventing the introduction of diseases and pathogens; ensuring invasive species are not spread throughout the Great Lakes by regulating lakers; and, encouraging transparency and collaboration for type-approval, monitoring, reporting, and enforcement. Copies of our detailed submissions to the Coast Guard and Environmental Protection Agency are available upon request.

We are encouraged by the progress that the Coast Guard and Environmental Protection Agency have made in recent years to improve regulations under existing authorities, and are pleased to see that the two agencies recently signed a Memorandum of Understanding on February 11 to better coordinate efforts to prevent invasions and enforce ballast water regulations. We are also pleased to see the role state requirements are playing to accelerate ballast water technology development and timelines for implementation. We believe that a strong, coordinated Coast Guard--Environmental Protection Agency ballast water program that fulfills our above recommendations, and thus preventing invasive species introductions into the waters of the U.S., is highly desirable and could eventually make individual state requirements unnecessary.

We understand that there is discussion in the Transportation and Infrastructure Committee of the House of Representatives regarding introducing ballast water legislation. If ballast legislation is considered in the 112th Congress, we encourage Congress to only pursue an agenda that supports ongoing efforts and accelerates adoption of our recommendations to the Coast Guard and Environmental Protection Agency.

Our organizations appreciate your interest in stopping invasive species introductions into the Great Lakes, St. Lawrence River and U.S. waters, and your consideration of our opinion as you move forward with legislation development in the 112th Congress. Please do not hesitate to contact Jennifer Nalbone, Great Lakes United at (716) 213-0408 or jen@glu.org if you have any questions.

Sincerely,

Joel Brammeier, President and CEO
Alliance for the Great Lakes
Chicago, IL

Kevin Kamps
Beyond Nuclear
Takoma Park, Maryland

Lisa Pearson, President
Citizens Natural Resources Association of Wisconsin
Albany, WI

Michael J. Keegan
Coalition for a Nuclear-Free Great Lakes
Monroe, MI

Alice Hirt
Don't Waste Michigan
Holland, MI

Jill Ryan, Director
Freshwater Future
Spring Lake, MI

Ray Stewart, President and Director of Communications
Friends of Wetlands
Amherst, OH

Thomas Marks, NY Director
Great Lakes Sport Fishing Council
Derby, NY

Jennifer Nalbone, Director, Invasive Species
Great Lakes United
Buffalo, NY

Nick Schroeck, Executive Director
Great Lakes Environmental Law Center
Detroit, MI

Jill Crafton, Chair
Izaak Walton League of America- Great Lakes Committee
Bloomington, MN

Jim Storer, President
Izaak Walton League of America- Ohio Division
Hamilton, OH

Tom Fuhrman
Lake Erie Region Conservancy
Erie, PA

Captain Denny Grinold, State and Federal Governmental Affairs
Michigan Charter Boat Association
Lansing, MI

Dennis Fijalkowski
Michigan Wildlife Conservancy
Bath, MI

Cheryl Nenn, Riverkeeper
Milwaukee Riverkeeper
Milwaukee, WI

Andy Buchsbaum, Regional Executive Director Great Lakes Office
National Wildlife Federation
Ann Arbor, MI

Melinda Hughes-Wert, President
Nature Abounds
Clearfied, PA

John LaForge
Nukewatch
Luck, WI

Denny Caneff, Executive Director
River Alliance of Wisconsin
Madison, WI

Nicole Kamins
Save the Dunes
Michigan City, IN

Jennifer Caddick, Executive Director
Save the River and Upper St. Lawrence Riverkeeper
Clayton, NY

Amy Hueber
Vera Cruz Yacht Club
Mexico, NY

Jan Scalpone, Secretary
Winnebago Lakes Council
Oshkosh, WI

George Meyer, Director
Wisconsin Wildlife Federation
Madison WI

Mr. BISHOP. Thank you, Mr. Chairman. I yield back.

Mr. LOBIONDO. Thank you, Mr. Bishop.

We have two distinguished panels today. For Members who may have come in a little bit past the opening gavel, we are going to ask you to withhold your opening statements. If you choose to make an opening statement, you will be able to do it during your time for questioning as we try to move forward.

Our first distinguished panel includes Coast Guard Vice Admiral Brian Salerno, Deputy Commandant for Operations; Mr. James Hanlon, director of the EPA's Office of Wastewater Management; Dr. Deborah Swackhamer, chair of the EPA Science Advisory Board; and Dr. James Carlton, chair of the Committee on Numeric Limits for Living Organisms in Ballast Water of the National Research Council.

We won't try to say that three times fast, but I thank our witnesses for being here today.

Admiral, you are up.

TESTIMONY OF VICE ADMIRAL BRIAN SALERNO, DEPUTY COMMANDANT FOR OPERATIONS, UNITED STATES COAST GUARD; JAMES A. HANLON, DIRECTOR, OFFICE OF WASTEWATER MANAGEMENT, ENVIRONMENTAL PROTECTION AGENCY; DEBORAH L. SWACKHAMER, PH.D., CHAIR, EPA SCIENCE ADVISORY BOARD; AND JAMES T. CARLTON, PH.D., CHAIR, COMMITTEE ON ASSESSING NUMERIC LIMITS FOR LIVING ORGANISMS IN BALLAST WATER, NATIONAL RESEARCH COUNCIL

Admiral SALERNO. Good morning, Mr. Chairman.

Chairman LoBiondo, Chairman Gibbs, Ranking Member Larsen, Ranking Member Bishop, and distinguished members of the subcommittees, I am very happy to be here this morning to have this opportunity toinform both committees about the Coast Guard's actions to strengthen ballast water management regulations.

Coast Guard has been involved in reducing the risk of invasive species from ballast water since the early 1990s, and since that time, we have worked in close collaboration with other Federal agencies, the States, the affected industry and the international community to develop standards which are rigorous enough to protect our environment and which can be practically adhered to by those who must operate within these standards.

The Coast Guard has established its existing ballast water regulations and its proposed new regulations under the authority of the National Invasive Species Act, NISA. In so doing, we have worked very closely with the Environmental Protection Agency, which has a similar mandate under the Clean Water Act.

NISA and Clean Water Act represent two different legal frameworks, each focussed on achieving similar outcomes related to invasive species. The Coast Guard and EPA are committed to harmonizing, to the degree possible, the requirements of both legal regimes in the proposed ballast water rulemaking and to further expand the excellent level of cooperation and field enforcement already established under EPA's vessel general permit.

The proposed ballast water discharge standards, which we published in 2009, represent a significant improvement in the level of

protection from invasive species. Currently, the risk of invasion is reduced through mandatory exchange of ballast water in mid ocean. However, this practice varies in effectiveness based upon ship design and route.

In contrast, the proposed rule will shift to a standard whereby the concentration of organisms in a known quantity of ballast water will be specifically limited. In determining the concentration limits, we relied heavily on inputs from the scientific community, from industry and equipment manufacturers, and from policymakers at the Federal and State levels.

We also led the U.S. Delegation to the International Maritime Organization, IMO, joining the negotiations and the ultimate adoption of the International Convention on the Management of Ships' Ballast Water and Sediment. Although this convention has not yet entered into force internationally and has yet to undergo ratification by Congress, it has nevertheless provided a useful benchmark in our proposed rulemaking.

Our proposed rule follows a two-phased approach. Phase one would establish a standard similar to that adopted by IMO. This is consistent with the level of technology currently available, and it represents a significant improvement over the current practice of mid ocean exchange. To put the IMO or phase one standard into some context, the standard of ten 50-micron-sized organisms in a cubic meter of ballast water is on the order of 1 part per trillion. This is analogous to 1 second in 31,700 years.

As these ratios suggest, we are talking for the most part about relatively small numbers of microscopic organisms. This phase one standard is the most protective standard that can be practicably implemented at that time.

Phase two is based on the most stringent quantitative discharge limits proposed in U.S. State regulations and essentially provides a target to encourage the development of significantly more effective ballast water management systems. Since neither NISA nor the Clean Water Act preempt State requirements, it remains very important in this process to develop a standard that will satisfy the States and thereby provide a consistent target for industry compliance.

The rulemaking will also contain provisions for Coast Guard type approval of systems used to treat ballast water for discharge. The Coast Guard has relied heavily on scientific input, and in that regard, we would like to thank the EPA's Science Advisory Board and the National Research Council's Water Science and Technology Board for their essential efforts to inform the way ahead on this issue.

We believe that the proposed two-phased approach will significantly reduce the risk of invasive species and will ensure the environmental protection is increased as science and technology allow.

Thank you, Mr. Chairman, and I look forward to answering any questions you may have.

Mr. LOBIONDO. Admiral, thank you very much.

Mr. Hanlon, you are now recognized.

Mr. HANLON. Good morning, Chairman Gibbs, Chairman LoBiondo, Ranking Members Bishop and Larsen, and members of the subcommittee.

Thank you for the opportunity to discuss EPA's regulation of ballast water discharges from vessels under the Clean Water Act. My testimony will provide an update.

Mr. LOBIONDO. Mr. Hanlon, excuse me, could you just pull the microphone a little closer to you?

Mr. HANLON. My testimony will provide an update on our current activities with respect to regulating ballast water under the vessel general permit, including the role of the recent National Academy of Sciences and EPA's Science Advisory Board reports will play in the development of the ballast water provisions for the next iteration of the permit.

Aquatic nuisance species introductions contribute to the loss of aquatic biodiversity and have associated significant social, economic, and biological impacts. Economic loss from invasions of aquatic nuisance species are estimated to be over $1 billion annually. In particular, the Coast Guard and EPA, operating under different statutory authorities, have worked to develop a strong Federal ballast water management program, which will reduce the risk of new introductions.

In administering our respective authorities, the Coast Guard and EPA have worked closely to harmonize as appropriate the proposed Coast Guard ballast water discharge standard regulations and EPA's vessel general permit. I want to recognize at this time that the Coast Guard has been a trusted and valuable partner in our ballast water activities, and we would not have accomplished this significant progress to date without their expertise and cooperation.

The vessel general permit issued by EPA in December of 2008 regulates approximately 69,000 domestic and foreign vessels while in U.S. waters. In the development of the vessel permit, EPA found that it was infeasible to calculate numeric limits for ballast water discharges. Therefore, the current permit contains best management practices that permittees must employ, such as all of the Coast Guard's ballast water and saltwater flushing standards and offers increased environmental protection with several additional management practices, such as requiring U.S.-bound vessels with empty ballast water tanks to conduct saltwater flushing, and mandating ballast water exchange for vessels engaged in certain Pacific near-shore voyages.

The current vessel permit expires in December of 2013. EPA plans on proposing for public comment a draft of the next permit in November of this year and expects to finalize the permit in November of 2012 so that vessel owners and operators will have time to plan for and implement any new permit conditions.

In order to further our scientific understanding of the state of ballast water science and technology, EPA and the Coast Guard commissioned a report from the National Academy of Sciences to inform our understanding of the relationship between the concentration of living organisms in ballast water and the likelihood of nonindigenous organisms successfully establishing populations in U.S. waters.

EPA and the Coast Guard also sought advice from EPA's Science Advisory Board on the performance and availability of ballast water treatment technologies. EPA's primary purpose in requesting the National Academy and the Science Advisory Board reports was

to receive expert input and advice regarding the derivation of numeric limits for ballast water and the status and availability of ballast water treatment technologies.

The National Academy report identified the strengths and weaknesses of existing approaches in evaluating the risks from ballast water discharges and made recommendations on how to improve our future scientific understanding of this risk. The report also recommended that a benchmark discharge standard should be established that reduces concentrations of organisms below current levels resulting from ballast water exchange.

EPA will use the results of this study to inform development of the next vessel permit. Furthermore, EPA will also work with our Federal partners to implement the recommendations of the report for improving our understanding of the risk posed by ballast water in the future.

The Science Advisory Board in their draft report found that treatment systems currently exist to meet the International Maritime Organization standard. EPA will also use the results of the SAB study to inform our next vessel permit. EPA and the Coast Guard will continue to work closely to minimize the risk of the introduction and spread of aquatic nuisance species. This cooperative EPA–Coast Guard effort, augmented with other Federal expertise provides substantial opportunities for moving forward with enhanced communication, coordination of Federal activities, and engagement with external stakeholders to develop and implement an effective national ballast water management program.

Once again, Chairman Gibbs and LoBiondo and members of both subcommittees, thank you for the opportunity to discuss EPA's ballast water-related activities, and I look forward to answering any questions.

Mr. LOBIONDO. Well, thank you very much.

Now Dr. Swackhamer, you are now recognized.

Ms. SWACKHAMER. Thank you.

Good morning, Chairman LoBiondo and Chairman Gibbs, Ranking Members Mr. Larsen and Mr. Bishop, and members of the subcommittee.

My name is Deborah Swackhamer, and I serve as chair of EPA's Science Advisory Board. I am a professor at the University of Minnesota and codirector of the university's Water Resources Center.

I am here today on behalf of the Science Advisory Board to present testimony on our review of the background and issue paper prepared by the U.S. EPA and U.S. Coast Guard staff. This review was conducted by the SAB Ballast Water Advisory Panel, whose members had expertise across a wide array of relevant disciplines. The SAB reviewed and accepted the advisory panel report.

EPA's Office of Water asked the SAB for advice on the effectiveness of existing technologies for shipboard treatment of vessel ballast water. The SAB reviewed data on 51 existing ballast water management systems provided by EPA. Detailed data were available, however, for only 15 ballast water management systems. These data were mostly from the time period of 2008 to 2010, and it should be kept in mind that this dynamic industry continues to evolve. EPA asked the SAB to address four charge questions, and I will summarize our responses.

The first question asked about the ability of existing shipboard ballast water management systems to meet proposed discharge standards. Only 9 of the 15 systems had reliable data, and they consisted of 5 different treatment types. The SAB concluded that these five treatment types of existing ballast water management systems could meet what is known as the phase one standard proposed by the U.S. Coast Guard. Also, the SAB concluded that none of the existing ballast water management systems can meet a standard that is 100 or 1,000 times more stringent than the phase one standard. It may be possible in the near future for the five system types identified to meet a standard that is 10 times more stringent than phase one if both treatment performance and testing approaches improve. The SAB also found that the available data indicate that none of these systems will meet a no-living-organism standard.

The second question asked what types of systems, based on their engineering design, would be likely to meet different discharge standards? The SAB concluded that all of the current ballast water management systems are based on reasonable engineering designs and use adaptations of standard water treatment processes. However, significant difficulties are encountered in adapting standard water treatment technologies to shipboard operation, and there were insufficient data to determine whether particular types of systems could meet standards more stringent than phase one. The SAB noted that factors beyond biological efficacy need to be considered as these technologies improve and mature.

The third question asked about ways in which ballast water management system performance could be improved. The SAB concluded that reasonable changes in existing systems are likely to result in incremental improvements but are not likely to lead to 100 or 1,000 times further reduction in organism concentration. It is likely that entirely new systems will need to be developed.

The fourth question asked about limitations of existing studies and how the limitations could be overcome in future ballast water management system assessments. The SAB recommends using improved and consistent testing protocols for verifying discharge concentrations and exploring the use of surrogate test organisms and performance measures. The SAB suggests using a practical stepwise approach to compliance, reporting, inspections, and monitoring. Also, developing standards to limit organisms that are less than 10 microns in diameter is essential to protect against certain harmful algae.

Finally, the SAB's overall recommendation is that EPA adopt a systems- and risk-based approach to minimize the impacts of invasive species, rather than relying solely on numeric standards in ballast water discharge. The SAB found that insufficient attention has been given to integrative sets of practices that could used to systemically advance ballast water management. These practices include, one, managing ballast uptake to reduce the presence of invasive species; two, reducing invasive risk through changes in ship operation and design to reduce or eliminate the need for ballast water; three, development of voyager-based risk or hazard assessment; and four, consider treatment of ballast water in onshore reception facilities.

The SAB refers to an example used in the food industry, known as Hazard Analysis and Critical Control Points, or HACCP. HACCP identifies specific steps in the process where hazards can be addressed, rather than focusing only on the end result. In the context of ballast water management, this would mean identifying critical points throughout the process where invasive species could be controlled in developing monitoring and control systems for these critical points.

You will find much more detail in our report to the EPA Administrator and my written testimony. Thank you for your interest and attention, and I will be happy to provide answers to any questions you may have. Thank you.

Mr. LOBIONDO. Thank you, Doctor.

Now, Dr. Carlton, you are now recognized.

Mr. CARLTON. Good morning, Chairman LoBiondo, Chairman Gibbs, Ranking Members Mr. Bishop and Mr. Larsen, and members of the subcommittees.

My name is James T. Carlton. I am a professor of marine sciences at Williams College, and I served as chair of the Committee on Assessing Numeric Limits for Living Organisms in Ballast Water of the National Research Council, the arm of the National Academy of Sciences that operates to advise the Government on matters of science and technology.

Our study, requested by the EPA and the U.S. Coast Guard, was to advise these agencies as they develop plans to regulate the concentration of living organisms discharged from ballast water. These plans assume that there is a quantitative relationship between invasive species concentrations in the released ballast and the probability of their successful establishment.

Here are our five key conclusions: First, the methods for determining an exact numeric standard for ballast water discharge are limited by profound lack of data by which to develop and validate the necessary models that relate organism release to the probability of invasion.

Second, while the number of released organisms is important, it is only one of many variables that determine when, why, and where species will invade. Any method that attempts to predict invasions based on only one factor is likely to suffer from a high level of uncertainty.

Third, that said, there is evidence that significantly reducing the number of released organisms reduces invasion probability. Therefore, a benchmark discharge standard that reduces the concentration of organisms below the levels achieved by open sea ballast water exchange is an important first step.

Fourth, we urge the development of robust statistical models, experimental studies, and field investigations that are focused on the relationship between the quantity, quality and frequency of released organisms and invasion risk. This research could be focused on the types of species that have the highest probability of being good invaders and are likely to pose the greatest threats to our economy and health.

This focus on the best case for invasion scenarios sets the regulatory bar high, noting that by best case for invasions, we mean of course the worst case for our society.

And fifth, our databases on what invasive species are now becoming established in American waters and our knowledge of the details of many vectors that bring these species to the United States, including ballast water, vessel fouling, the aquarium industry, and the live seafood and bait trades are patchy and substantially mismatched. For example, we have anecdotal accounts that there are now fewer invasions since extensive open ocean ballast water exchange has been in place for ships arriving from foreign shores. On the other hand, there is no—no—national survey program to determine if in fact invasions have decreased.

Let me conclude on a personal note, as a marine biologist and as a scientist who has worked on invasive species for 49 years. I have had the privilege to testify before Congress nine times since 1990 and my message is the same as it was 20 years ago. Our oceans are under great pressure. Our natural resources and our economic health derived from our rich maritime assets and heritage are under great pressure. Our fundamental goal has been and remains to limit invasions of exotic species in order to protect and preserve our existing populations of fish, wildlife, shell fish and the many other beneficial uses of our Nation's waters.

Given the sobering reality of the uncertainty of our knowledge about what regulates and promotes nonnative species, our ability to make accurate predictions is severely limited,underscoring more than ever that only the strongest science behind the policy will ensure the outcomes we seek.

Thank you for the opportunity to testify. I welcome any questions.

Mr. LOBIONDO. Thank you, Doctor, very much.

I want to start, Admiral Salerno, with you. What will the Coast Guard do if the practicality review you plan to conduct to ensure a verifiable system is available to meet phase two standard comes back negative? Will you implement the best available technology, even if such technology is only marginally more effective than phase one? And my concern is if there is mandated technology that only gives us a little bit better edge, are we going to force vessel owners and operators to buy that technology and put it on board if there is only a minimal ability to increase their effectiveness?

Admiral SALERNO. Sir, we did include in our rulemaking a provision to have an interim standard, in other words, if it appears that technology has advanced to such a degree that you can have a significant improvement in protection but still not fully meet the phase two requirement, that there is a provision for an interim standard. So that is part of the framework of the regulation, yes, sir.

Mr. LOBIONDO. Where would be the definition of significant improvement? Is it in the eye of the beholder or something that can be tangibly measured?

Admiral SALERNO. It would need to be tangibly measured. That is the framework for this, is that we need to have the technology in place to measure the number of organisms in a specific quantity of ballast water. So, without the ability to measure, there is not that tangible proof of an improvement. So only in the case of technology that that can achieve a significant improvement would we seek to impose an additional rule.

Mr. LOBIONDO. Also, for you, Admiral, the EPA and the Coast Guard signed a memorandum of understanding in March of this year to outline Coast Guard enforcement of EPA vessel general permits. Is the Coast Guard checking to see if vessel operators are following these vessel general permits best management practices for incidental discharges, other than ballast water, such as gray water? For instance, if you board, are you checking to ensure that vessels are carrying only phosphate-free soap? Is that something you are doing?

Admiral SALERNO. Typically, sir, we are boarding vessels in the course of our normal duties, and we are including verification of compliance as part of our routine boardings. Essentially it is checking records, making sure that they have the proper procedures laid out to be followed by the crew and look for apparent compliance. I don't believe we are checking soap.

Mr. LOBIONDO. OK. And Mr. Hanlon, will the draft VGP include regulation of commercial fishing vessels and other commercial vessels less than 79 feet, which are currently subject to a moratorium?

Mr. HANLON. Mr. Chairman, our current plans are, given the earlier conversation this morning and the recognition that the moratorium expires in December of 2013 is to prepare a permit that would be available to the moratorium vessels, those under 79 feet and all fishing vessels, so that if the moratorium does expire in December of 2013, there would be a permit available for that class of vessels to be able to apply for the permit.

In the alternative, if we did not include them in the permit and the moratorium were to expire, then that whole class of vessels would be vulnerable under the Clean Water Act for discharging without a permit.

Mr. LOBIONDO. Do you have any idea how many vessels would come under that?

Mr. HANLON. Approximately 120,000 to 140,000.

Mr. LOBIONDO. And does the EPA have the resources to administer to these additions.

Mr. HANLON. Yes, sir.

Mr. LOBIONDO. OK.

Also, Mr. Hanlon, the science to establish a foundation for regulation and incidental discharges other than ballast water is seriously lacking. Does the EPA fully understand that the impact of these discharges, that they have on water quality—so, I mean, do you know what it is doing to water quality? Can you measure that?

Mr. HANLON. As we have discussed this morning, the 2008 vessel general permit was EPA's first permit dealing with this class of dischargers. Clean water permits under the Clean Water Act had a term of 5 years. It is an iterative process, and so as I outlined in my statement, we are in the process, and we gathered information. That is why we, along with the Coast Guard, commissioned the National Academy report, why we commissioned the work done by the Science Advisory Board, to better inform us in terms of where the science is at, where the release risk paradigm is at, as Dr. Carlton spoke to; where the technologies are at, as Dr. Swackhamer spoke to; to inform the EPA decisionmaking process as we work to propose the next vessel general permit in December—in November of this year. And so that understanding is being

developed with—across this category of dischargers and will be reflected in the proposed permit.

Mr. LOBIONDO. Well, correct me if I am wrong, is that not just for ballast water?

Mr. HANLON. No, basically EPA's vessel general permit that we issued in December of 2008 includes the consideration of 26 different waste streams from vessels, including ballast water, and that scope will be continued in the proposed permit in November.

Mr. LOBIONDO. But have you studied these other discharges, such as air conditioner condensation or deck wash-off, the way you have studied ballast water to determine the impact?

Mr. HANLON. As part of the bill or law that included the moratorium, the Congress directed EPA to do a study of vessel discharges. We did that study and delivered it to Congress. Again, it was based on a limited study, not a comprehensive study of all vessel classes and all dischargers, and that report identified across a number of waste streams where there are potential concerns, not globally, not nationally, but in specific locations where there are discharges from vessels that could have adverse water quality impacts.

Mr. LOBIONDO. OK. Well, I will end with that for you, but I just have to say that I have a very, very serious concern that air conditioner condensation or deck wash-off that could result in serious fines, that we don't fully know the impact that these are having and that it is a little bit different than ballast water. And I hope, as we move along, that we can get a better handle on that.

Dr. Swackhamer, what are the major challenges in adopting standards more stringent than the IMO standard?

Ms. SWACKHAMER. I would say the major challenges, Mr. Chair, are with the technologies themselves. We can probably, by improving detection limits of the verification methods and by tweaking some of the technologies that are currently being developed, we could meet the standard, those systems could meet a standard that is 10 times more stringent than the phase one. However, it is unlikely that the current systems, even with tweaking, would get to 100 or 1,000 times more restrictive than the phase one standard.

Mr. LOBIONDO. OK thank you.

Dr. Carlton, and this is my last question in this round, in your report you find that available methods for determining a numeric standard for ballast water discharge are limited by a profound lack of data to develop and validate models determining risks of invasion. Why, given your finding that available methods of determining a numeric standard for ballast water discharge are limited by a profound lack of data, do you feel the IMO standards should be implemented?

Mr. CARLTON. Thank you, Mr. Chairman.

What we suggest in the report is that we now seek a benchmark discharge standard that is lower than what can be achieved by current ballast water exchange, which is limited and often very patchy. What we identify in the report was that was a different kind of discharge standard and what we suggested was that something like the IMO D–2 standard—such as the IMO D–2 standard—would be a direction to go in, but we did demure from specifically saying that that particular standard should be implemented because of our concern with being able to identify a specific num-

ber, based upon all the models we discussed in the report, but we did go in that direction of saying that a standard that would achieve concentrations lower than that—than what is achieved by ballast water exchange, such as the IMO D–2 as an example, would be a direction to go in.

Mr. LOBIONDO. OK. Thank you.

Mr. Larsen.

Mr. LARSEN. Thank you.

Dr. Carlton, continuing on that point, again, while your report doesn't endorse a specific standard, it sure seems to point in a direction, the IMO D–2 or Coast Guard phase one standard, at least in the direction of it. If that standard is put in place, did you—in regulation or legislation—does the NRC consider at all whether that should be a uniform standard or a baseline for States to build on, and if it didn't, do you have your own personal opinion?

Mr. CARLTON. We did not go in that direction. We did not address the question as to whether it should be a national or how it would work at State or international levels. It was more of a broad approach to where we should go to get beyond ballast water exchange. And my personal opinion is that a uniform standard would certainly the wise direction to go in terms of what the industry could respond to.

Mr. LARSEN. Could you explain why, in your opinion?

Mr. CARLTON. Yes. Certainly, and again, this is my personal opinion; the committee did not address this. That various vessels that are arriving at different ports, different port facilities, various COTP regions would be faced with potentially a wide variety of different regulatory frameworks, which would make putting on-board or other kinds of ballast water management systems a tremendous challenge. I look at that internationally as well. These vessels are visiting many different countries, and certainly something that would achieve a strong global standard would be the way to go, in my opinion.

Mr. LARSEN. Dr. Swackhamer, regarding the standards and technology, for many years, this debate has included the question of whether standards should be set at the level of available technology or whether standards should be set and then basically give the incentive for the private sector to move technology to the standard. Based on the results of your review, it appears the establishment of the IMO standard caused the private sector to develop technologies designed to meet the standard. Do you believe the five technologies that you identified would have been developed in the absence of this standard?

Ms. SWACKHAMER. Mr. Larsen, it is hard for me to second-guess what the industry would do, but I would agree with your statement that once they have a regulatory goal or guidance, they then can—that spurs innovation to develop the technologies to meet those goals.

Mr. LARSEN. Would strengthening standards in the future result in further improvements in technology?

Ms. SWACKHAMER. I am sorry could you repeat that.

Mr. LARSEN. Would strengthening standards in the future result in improvements in technology?

Ms. SWACKHAMER. Mr. Larsen, I do believe that that would be the case, that once you set another standard, you begin to show where the road map is going to go, it does spur the innovation to develop those technologies.

Mr. LARSEN. Admiral Salerno, the Coast Guard Shipboard Technology Evaluation Program is currently evaluating four different technologies on six vessels. The SAB identified five technologies that can meet the phase one IMO D–2 standard. Are any of these the same technologies?

Admiral SALERNO. I believe they are, sir. There are also some additional applications that are currently being reviewed, and some of these are fleet-wide applications, so an additional—actually, a total of 60 vessels that have applied for entry into the step program, which provides that platform to test new technologies. So I can get back to you for the record, but I believe all of the available technologies would be represented in these additional step applicants.

[The information follows:]

> The Science Advisory Board report identified five different categories or general types of Ballast Water Management System (BWMS) technologies that are able to definitively meet the D–2 (and hence the U.S. Coast Guard Phase I) standard. These five general categories are:
>
> (1) Deoxygenation + Cavitation
> (2) Filtration + Chlorine Dioxide (Cl O_2)
> (3) Filtration + Ultra-violet light (UV)
> (4) Filtration + UV + Titanium Oxide (TiO_2)
> (5) Filtration + Electro-chlorination
>
> Vessels that are enrolled in or that have applied for enrollment in the Coast Guard's Shipboard Technology Evaluation Program employ all categories of BWMS technologies except "Filtration + UV + Titanium Oxide." There are no pending applications which have identified this technology as their treatment method.

Mr. LARSEN. A question I have with regard—is the relationship here between the vessel general permit and the science and the research that is being done because I think—and Dr. Carlton, your fourth point is about urging the development of robust statistical models, studies, further investigations and so on. Do you have an idea, a concept of the timing of the kind of research that we need to get done to get to the, you know, highest probability of killing the bad guys, killing the critters?

Mr. CARLTON. Mr. Larsen, in terms of timetable of the research agenda, that kind of thing?

Mr. LARSEN. Yeah.

Mr. CARLTON. We suggest in the report that there was low-hanging fruit that was available within 3 to 5 years if some of these programs could be instituted, complementary programs that would be both experimental and field in nature. Basically, what our committee found again and again was that when we turned to looking for research data that would support the basic constructs, the basic parameters and models of where we were going, it just wasn't there. We felt that there were some programs that could be de-

signed if they were to be implemented where we could get very useful data in fairly short term.

Mr. LARSEN. Mr. Chairman, I think I will hold there and, perhaps on the second round, come back.

Mr. LOBIONDO. OK, thank you, Mr. Larsen.

Mr. Gibbs.

Mr. GIBBS. Thank you, Mr. Chairman.

I want to explore a little bit invasion prevention with Dr. Carlton in just a second, but start with Admiral Salerno.

You mentioned, currently, technology is there I think you said 10—I will call them critters—per 1 cubic meter of water was that equal to 1 parts per trillion, correct?

Admiral SALERNO. There are different size categories of the critters, sir, and what I referenced was the largest size, which is 50 microns, which is essentially the size of a human cell, and that the standard, the phase one standard is 10 organisms or less in a cubic meter.

Mr. GIBBS. And that would be the equivalent to parts per trillion?

Admiral SALERNO. Yes.

Mr. GIBBS. So that would be the phase one, that would be similar to the IMO standard that 28 nations have ratified?

Admiral SALERNO. That is correct.

Mr. GIBBS. OK. I guess, to Dr. Carlton, then, your testimony about invasion prevention, I guess what I am hearing, the science isn't there to determine, even at parts per trillion, if that is a threshold that is great enough for, the zebra mussels in the Great Lakes to be able to adapt and multiply—is that correct? We just don't know what the number should be, or it has to be zero?

Mr. CARLTON. Right. At those kinds of numbers, where we have something like 10 or less organisms at 50 micrometers (50 microns) per cubic meter, that is well within the size range of quite a number of different organisms. The tiny larvae of a number of invertebrates, the cysts of organisms that cause red tides are all within that 50-micron and smaller range. When we multiply that times the cubic meters that are in a ship, the volume, so that number actually goes up substantially. So, within that range, we understand that there is still an inoculum available, even at what seems like disappearingly small numbers. It is multiplied by the volume of water in that ship, how many hundreds of thousands of cubic meters, and then the number of ships that continue the arrive. That said, it is those kinds of numbers that we struggled with in terms of what minimum inoculum density is necessary to get an exotic species population going.

Mr. GIBBS. So, knowing all this and knowing we don't have technology to go further, are you supportive of the United States ratifying the IMO and before when this permit expires, I think in a year or two? Would you support that, or something else?

Mr. CARLTON. As my personal opinion—again, the committee didn't address this—I would certainly support going in the strong directions that move us beyond ballast water exchange. Ballast water exchange has very large gaps in the management system for coast-wide trade. A number of vessels are exempt from it. We know that vessels in the foreign trade in fact cannot achieve ballast

water exchange at times or not efficiently, and so we know that we need to move beyond that. And so I am supportive of both a global and national program that ratchets this down considerably and gets us beyond what was widely considered to be a stopgap measure for the past 20 years.

Ballast water exchange has always been a temporary measure, and what we need to do is get beyond that and get moving on to these programs, where combining what we can with ballast water management systems and however those are manifested reduces the concentration of those organisms considerably, and that we think will have a huge impact on invasion probability.

Mr. GIBBS. Dr. Swackhamer, I guess I am intrigued with HACCP because I know a little something about that in the food supply line. Has that been more developed, or is there an actual proposal for critical points in how we could work to prevent the invasion of a species?

Ms. SWACKHAMER. Mr. Gibbs, to my knowledge, it has not been developed specifically for invasive species, but the SAB feels that that particular HACCP approach, which has been in play for a long time and been quite successful at protecting the food supply, that that approach would be an ideal—it would translate ideally to the management of invasive species, from the taking of ballast water to its final discharge. So it would really be—instead of—it would include the numeric standard, but it would be managing ballast water from start to finish and finding those critical points in that process and then putting in place controls and monitoring to make sure that you are dealing with invasive species at each critical point in that line.

Mr. GIBBS. I guess my last question is for Admiral Salerno. When I was back in the Ohio legislature, we had some committee hearings on ballast water exchanges and issues in the Great Lakes. Mechanically, ships are coming in and staying in the Saint Lawrence Seaway. They are required to exchange their ballast water 200 miles out or something like that. Most ships, can they exchange it, or do they flush through? Can you just explain briefly the mechanics of how all that works?

Admiral SALERNO. Yes, sir, the exchange is required to take place beyond 200 miles, which is our exclusive economic zone. It can, it is required to occur, but there are some provisions for allowing a ship not to do it. Mostly they are safety related; if, for example, if a ship is engaged in a storm, then it would be unsafe for the ship to shift ballast; there is an exemption there.

The seaway also has a requirement for flushing. Coast Guard has a policy; the seaway has a requirement for flushing for empty ballast tanks, and that obviously also takes place out in mid ocean. And what we do is, in conjunction whether the seaway and Canadian authorities, is verify compliance at Massena, New York, so, essentially, in the seaway prior to entering the Lakes, and we are finding a high degree of compliance with those requirements.

Mr. GIBBS. Thank you, Mr. Chairman.

Mr. LOBIONDO. Mr. Bishop.

Mr. BISHOP. Thank you, Mr. Chairman.

Mr. Hanlon, the title of this hearing is, "Reducing Regulatory Burdens, Ensuring the Flow of Commerce and Protecting Jobs,"

and I think it is fair to say that the implication of that title is that there is a view of some that ballast water treatment requirements and discharge standards constitute a regulatory burden that is impeding commerce. To your knowledge, has the implementation of the vessel general permit had a significant adverse impact on the flow of maritime commerce thus far?

Mr. HANLON. Chairman Bishop, thank you——

Mr. BISHOP. I can only hope.

Mr. HANLON. Or Ranking Member Bishop, thank you for your comment and question. The effective date of vessel general permit was February of 2009. We are going on 2½ years of implementation. To the best of my knowledge, there have been no interruptions of trade or commerce resulting from the permit.

Mr. BISHOP. Any other member of the panel wish to comment on that?

Admiral Salerno, are you in a position to comment on that?

Admiral SALERNO. If I can take that one for the record, sir.

[The information follows:]

> With regard to the ballast water requirements in Section 2 of the Vessel General Permit (VGP), which mirrors pre-existing ballast water requirements in the pollution regulations in force before VGP came into effect, there is no significant adverse impact to the flow of maritime commerce. This is based on the exams conducted by the Coast Guard since March 2011, where only minor deficiencies have been identified and provided to the Environmental Protection Agency (EPA) for further action.

Mr. BISHOP. All right.

Mr. Hanlon, the second question. One argument that is raised is that we have two different laws. We have the Clean Water Act and we have the National Invasive Species Act, and that the two are duplicative and that we don't really need regulation under the Clean Water Act with respect to this issue. Is that of a view that you share? And if so, why, and if not, why not?

Mr. HANLON. The last time I appeared before this committee on a hearing on this subject, I testified that the EPA view was that we did not need duplicative coverage. That was a view supported by the last administration. This administration has not taken a position in terms of the value of NISA and Clean Water Act coverage of ballast water.

I believe that EPA, working very closely with the Coast Guard, has succeeded in implementing a system that has successfully made progress in the management of ballast water; in our case, implementing a commonsense workable permit.

Mr. BISHOP. But more specifically, do you believe that the application of the Clean Water Act provides protections beyond those that the National Invasive Species Act provides?

Mr. HANLON. Yes, I do.

Mr. BISHOP. Thank you, anyone else care to comment on this issue?

Thank you, Mr. Chairman. I yield back.

Mr. LOBIONDO. Mr. Coble, Master Chief Coble.

Mr. COBLE. Thank you, Mr. Chairman. I appreciate that. I thank you for that elevation.

Admiral Salerno, when will the Coast Guard release its final ballast water regs?

Admiral SALERNO. Sir, they are in clearance. Of course, they were published initially in 2009. We have received over 2,000 comments largely from industry. Very carefully went through all of those. But the interim final rule is in clearance.

We do feel a great sense of urgency to get these regulations published for the simple reason that we are seeking to harmonize with EPA, and EPA has a deadline to revise its vessel general permit. So when these regulations are published, that would be useful to EPA. And their deadline is really later this fall. So we are working very aggressively within the administration to meet that deadline.

Mr. COBLE. Thank you, sir.

Will the Coast Guard regulations, Admiral, allow the use of shore-side systems, rather than shipboard systems?

Admiral SALERNO. Shore-side systems are a possibility, sir. But it brings with it a great number of complications. Similar to what we have for sludge or oily waste, every facility would have to have that capability for the system to work.

So, currently, the proposed regulations are really shipboard-based so that every ship has its own system to deal with the limitation of invasive species.

Mr. COBLE. Thank you, sir.

Mr. Hanlon, as you note in your testimony, EPA expects to release a draft vessel general permit, VGP, to replace the existing one by the end of the year. Has the EPA worked with the Coast Guard in developing its due discharge standards to prevent duplicity, and how can you ensure the uniformity if the VGP becomes subject to another lawsuit or further litigation?

Mr. HANLON. We continue to work closely with the Coast Guard in terms of the development of options that will be considered for the draft general permit to be released by the end of the year. Again, we develop permits, the vessel general permit in this case, under the authorities of the Clean Water Act implementing regulations, and that based on that, we make decisions, Administrator Jackson makes decisions based on final permits, final regulations. It is not uncommon we are challenged on those decisions like we were challenged on the 2008 vessel permit. But as I mentioned a minute ago, we continue to implement that permit and have done so successfully.

Mr. COBLE. Thank you all for being with us.

Mr. Chairman, I yield back.

Mr. LOBIONDO. Thank you, Master Chief.

Mr. Cummings.

Mr. CUMMINGS. Thank you very much, Mr. Chairman.

Admiral Salerno and Mr. Hanlon, Dr. Dennis King with the University of Maryland Maritime Environmental Resource Center has written that based on planned IMO compliance deadlines, over 50,000 merchant ships will need to install certified BWT systems by 2016 to 2017. That is about 10,000 ships per year for 5 years or so.

And since many larger ships may need to install multiple BWT units to meet IMO discharge standards, the number of actual BWT units that will need to be manufactured and installed during those years to achieve widespread compliance may be closer to 20,000 or 30,000 per year.

Based on the Coast Guard's research, how many vessels would need to install ballast water treatment systems if the U.S. adopts the proposed ballast water standards?

Admiral SALERNO. Morning, Mr. Cummings.

Mr. CUMMINGS. Good morning. Good to see you again.

Admiral SALERNO. Good to see you, sir.

Sir, let me talk about the international fleet first.

Every year, the U.S. is visited by between 8,000 and 9,000 individual ships. All of those vessels would need to comply with our standards. Internationally, of course, that number is much higher because the international fleet includes ships that don't necessarily visit the United States. So 40,000 to 50,000 is probably in the accurate range.

There is also a domestic fleet that would need to comply under the NPRM, and there the numbers are not as clear. Our proposed rulemaking estimated about 2,600. The feedback we received from industry suggests that number needs to be revised upwards significantly. I don't have an absolute number for you, but I would say it would be a several-fold increase in the number of domestic vessels that would need to comply with the proposed standard.

Mr. CUMMINGS. Now, Dr. Swackhamer, are existing companies capable of producing the number of treatment systems needed to meet the demand.

Ms. SWACKHAMER. Our panel did not actually address that question so I don't know the answer to that question.

Mr. CUMMINGS. Is there anybody that can answer that question on the panel?

Admiral SALERNO. Sir, I can tell you that a lot of the feedback we received from industry suggests there is concern about the availability of equipment. So that is something that we are paying very close attention to.

Mr. CUMMINGS. All right.

Admiral Salerno, a report that the EPA commission found that the systems currently exist to meet the International Maritime Organization's standards. Can you state how many such systems exist, and roughly speaking, how much does each system cost to install and maintain? Further, how large are such systems, and could they be easily accommodated in the existing vessels?

Admiral SALERNO. Sir, as far as the availability of systems, internationally, there are about seven other countries that have approved systems under the provisions of IMO, totaling about 11 individual system types. The Coast Guard has not yet approved any of those systems, but we are aware of them and would go through the approval process with those manufacturers.

The cost to acquire and install, obviously, will vary depending on the ship type and service. For a large ocean-going ship, the cost of acquisition is probably somewhere at $1.8 million. And then installation, you are probably $2.5 million on average. Less so for a do-

mestic vessel. But you are still talking probably several hundred thousand.

As far as size goes, again, that will vary, but for a large ocean-going ship, this is a significant bit of installation, roughly equivalent in volume to a large freight container. And that would require additional pumping and power requirements so that, in many cases, it will require the ship to have that installation done in a shipyard.

For smaller vessels, obviously, the units would be smaller but still quite substantial. For example, a small coastal vessel, probably looking at several hundred thousand for installation and the unit, maybe the size of one or two home-sized refrigerators.

Mr. CUMMINGS. With the chair's indulgence, I just want to ask one quick other question.

I just want to—I am concerned. Before I close, I also want to take a moment and note that yesterday the National Transportation Safety Board issued its report on a 2009 accident—are you familiar with that—in San Diego, in which a Coast Guard patrol boat collided with a recreational boat killing a young child. The NTSB identified excessive speed of the Coast Guard patrol boat as a cause of this accident. This report of course is very troubling to us. As the NTSB noted, it is the Coast Guard that is charged with ensuring the safety of our recreational boating activities and enforcing the rules of the road on our waterways. I hope that you all are acting on that because that is of great concern to us. It sets a very poor example, I think.

And wouldn't you agree, if we have got our own folks who are supposed to be saving lives speeding down the waterways and leading to such a tragic incident? I wouldn't be making this comment if the NTSB had not already made its finding.

Admiral SALERNO. Sir, I can assure you we take that incident and anything like that incident extremely seriously. It did trigger very in depth internal investigation, and disciplinary action has been taken as well as policy measures that have been put in place to ensure that that type of situation does not occur again. But we take that extremely seriously.

Mr. CUMMINGS. Thank you very much, Mr. Chairman.

Mr. LOBIONDO. Thank you, Mr. Cummings.

We will now recognize the gentleman from coastal Louisiana, Mr. Landry.

Mr. LANDRY. Thank you, Mr. Chairman.

Mr. Carlton, I can't help but sit here listening to all of this and think about being down on the coast and growing up and doing a lot of fishing and having a lot of social interaction with commercial fishermen.

I could think of one old shrimper down in my district, Mr. Sharem. He is about 85 years old. He has got no formal education. And as you all were talking, and I think if he would be sitting here, he would probably look at me and say, "You know, boy, just put a little more Clorox in the ballast, and we could solve the problem."

And it seems that is exactly what you were saying. You know, we could spend millions of dollars trying to come up with processes to filter the water, but it seems like if we just put a little more Clo-

rox in the ballasts, we would do a lot more good and save a lot more money. Is that not what you were kind of alluding to?

Mr. CARLTON. It is an interesting question. I am going to pass this over to Dr. Swackhamer; her committee looked at all of these various technologies. But I do appreciate—I spend time at Grand Isle and Cocodrie and along the Louisiana coast. And I appreciate those senses of those who are living and working along the coastline as to the more pragmatic strategies that we should take.

But in fact, chemical control, although it wasn't something our committee looked at, has been looked at for ballast water management and it has been considered to be a challenge, of course, as to chemically treating water. But let me pass that over to Dr. Swackhamer, whose committee looked at that question.

Ms. SWACKHAMER. Mr. Landry, on a small scale, certainly using diluted bleach is a good way to clean your kitchen, but it is not a very good way to actually get at large volumes of ballast water. And the reason is the number of organisms and the number of particles in the water. So you have to go through multiple kinds of treatments to really, one, remove as many organisms as you can from some sort of physical filtration, and then you want to disinfect using——

Mr. LANDRY. Would you say there is more ballast water than there are household sinks in this country?

Ms. SWACKHAMER. No. It is a small-scale issue versus a large-scale.

Mr. LANDRY. It is a small-scale issue if you look at it from a sink to a ballast, but if you go from a city to a ship, I think the amount that you are putting down the drain is probably more in the city than it would be in the ballast.

But I guess my problem is we seem to not be taking pragmatic approaches and rather trying to look at something, which I think you all do a lot of, and that is to dream up what is the best case scenario to just filter the water to a point where even sometimes it seems like you are just going above and beyond what we need.

And it strangles industry, and it kills jobs. And that is my concern whether it is Clorox or some other agent that we could use, it seems like you all could come up with something that is a lot cheaper.

Before I run out of time, I wanted to ask the Admiral why is it—tell me what we could do to keep EPA from having to get involved in maritime vessels. I would rather keep enforcement of these issues strictly under the Coast Guard's supervision, just because I think that is where it belongs. And now we are paying for two agencies to basically do the same thing, and then we can't seem to come to an agreement.

Admiral SALERNO. Sir, the way we have approached that is in cooperation with EPA, we have actually signed a memorandum of understanding——

Mr. LANDRY. I don't want you all to cooperate. I just want to give it to you.

Admiral SALERNO. I will leave that to Congress, sir.

What we do is our people go out on the vessels. They are trained in what the EPA requirements are, and we act as detectors. We wrap that into our normal requirements.

Mr. LANDRY. I wouldn't want to task the Coast Guard with making sure that we enforce household—you know, sewage treatment facilities land-based. And that is my point is, I don't want you all to be doing their job and them to do your job. And I think they would be better off where you are.

But one quick before—I have got 20 seconds. Mr. Hanlon, you testified that approximately 69,000 domestic and foreign vessels, which are subject to the permit requirement while in U.S. waters. Do you know how many of these regulated vessels are owned by the U.S. Government?

Mr. HANLON. I don't have that information. We can certainly get back to you for the record on that.

Mr. LANDRY. Are those Government vessels going to have to adhere to these same guidelines as the private vessels, or are we going to exempt DOD vessels?

Mr. HANLON. Under provisions of the Clean Water Act, military vessels are not subject to the 402 Clean Water Act permit. That is a separate rulemaking process under way for military vessels.

Mr. LANDRY. So the Coast Guard vessels won't have to meet the same criteria as the private vessels, is that what you are saying?

Mr. HANLON. That is correct. But EPA vessels—basically, we have a very limited number of vessels—they have applied for and are complying with the permits.

Mr. LANDRY. Would they have to?

Mr. HANLON. Yes, sir. Only military vessels.

Mr. LANDRY. I yield back.

Mr. LOBIONDO. Ms. Herrera Beutler, do you have questions?

Ms. HERRERA BEUTLER. I mean, I have more questions for the second panel.

But just maybe just to the group, what happens if Congress doesn't step in and do something? In terms of where we are at in the regulatory framework, what happens, and what would the cost be? That is really to the group.

Mr. HANLON. I think the path forward—well, as the Admiral testified, their regulation is in the final review process and will be issued. EPA will continue to coordinate and work with the Coast Guard staff in terms of their final regulation. The next generation of the vessel permit that is supposed to be proposed in November of this year and as we have with the past permit and Coast Guard regulations, we will continue to coordinate to ensure that there are sort of commonsense implementable solutions on the ground that ship owners and ship operators can comply with and will sort of know what the standards are so that there isn't any fuzziness in terms of what the requirements are at any point in time for any vessel on the water.

Ms. HERRERA BEUTLER. Those rules, both of them, they don't supersede State, any kind of State, the State framework at all. So if a State has additional—so it is what you are putting out in addition; correct?

Mr. HANLON. That is correct.

Ms. HERRERA BEUTLER. Thank you.

Mr. LOBIONDO. Mr. Gibbs indicated he had some additional questions.

Mr. GIBBS. Thank you, Mr. Chairman.

This is for Mr. Hanlon, kind of a follow up on my last round of questions. We were talking about the parts per trillion and the IMO standard. My understanding is New York and California are putting into place standards 100 to 1,000 times greater than the IMO standard. And do you have any idea how vessel operators could expect to comply with those standards?

Mr. HANLON. The conditions that New York, for example, has placed on the EPA 2008 vessel permit was under the authority of Section 401 of the Clean Water Act, where Congress said, for any Federal license or permit, a State can attach conditions relative to that license or permit complying with State water quality standards, so those are independent decisions that are made by States and are subject to challenges in courts. As Dr. Swackhamer testified, we are not aware of any technologies today why——

Mr. GIBBS. My follow-up question to that is does the U.S. EPA have any mechanism to override any burdensome restrictions put on by States then?

Mr. HANLON. Under 401 certifications, we do not.

Mr. GIBBS. So in the EPA's opinion, should the Federal Government have the primacy in determining ballast water regulations then? Would you agree with that?

Mr. HANLON. The vessel general permit was issued by EPA. That is our permit, yes, sir.

Mr. GIBBS. Can vessel owners or operators face citizens' lawsuits for failure to comply with the 401 certifications?

Mr. HANLON. In as much as a 401 condition is a condition of the permit, the answer to that is yes.

Mr. GIBBS. Would the EPA support a waiver of 401 certifications for vessels engaged in interstate commerce?

Mr. HANLON. That is a question we would be happy to get back to you on the record.

Mr. GIBBS. I am just trying to address some uniformity on the issue with regard to interstate commerce.

Mr. HANLON. We understand that. We also understand that in the 2008 permit and the 401 certifications, for some States, it had been 30 or more years before they had been in a position to issue a 401 certification on an EPA permit. And they had to do that in a relatively short period of time.

Our plans are to give States a minimum of 6 months on the next permit to consider their certification requirements, if any, that may continue after a proposal of the next permit. And again, that permit will be informed by the work of both the National Academy and——

Mr. GIBBS. Giving States more time wouldn't guarantee uniformity, though, under that permitting process, correct?

Mr. HANLON. I am sorry, I didn't hear——

Mr. GIBBS. Giving States more time under this permitting process wouldn't guarantee uniformity, correct?

Mr. HANLON. Correct.

Mr. GIBBS. OK, thank you.

Mr. LOBIONDO. Do any Members have additional questions for the first panel?

Well, thank you very much for a helpful, very informative session.

We are now going to move to our second panel, give a chance to switch out and announce who they are.

Our second panel includes Mr. Thomas Allegretti, who is the president The American Waterways Operators, who is also representing the Shipping Industry Ballast Water Coalition; and Mr. Michael Jewell, who is president of the Marine Engineers' Beneficial Association.

I would like to thank them for being here today, and in just a second, we will go forward with their testimony.

TESTIMONY OF THOMAS A. ALLEGRETTI, PRESIDENT AND CEO, THE AMERICAN WATERWAYS OPERATORS, ON BEHALF OF THE SHIPPING INDUSTRY BALLAST WATER COALITION; AND MICHAEL JEWELL, PRESIDENT, MARINE ENGINEERS' BENEFICIAL ASSOCIATION

Mr. LOBIONDO. Mr. Allegretti, whenever you are ready you are recognized.

Mr. ALLEGRETTI. Good morning, Chairman LoBiondo.

Today's hearing is aptly titled and most timely. Our Nation urgently needs the commonsense approach which your subcommittees are seeking.

Without congressional action, the flow of critical maritime commerce will be constrained, American jobs will be jeopardized, regulatory burdens on business and workers will multiply, and American taxpayers will continue to foot the bill for duplicative and contradictory programs.

The bipartisan leadership of these two subcommittees is crucial to ensure that our Nation avoids these unwarranted outcomes.

The good news is that Congress has a huge opportunity to change the situation by enacting legislation that is good for U.S. business and American mariners, is good for the U.S. environment, and is good for the American economy and jobs.

In my remarks to you this morning, I would like to address three fundamental issues: First, we must streamline existing regulations so they are clear to companies and mariners. The 30,000 American mariners who live and work aboard the 4,000 towing vessels in our industry are currently subject to the regulations of two Federal agencies and 26 States. These regulations have overlapping and conflicting requirements about how to use and discharge water on vessels that are operating in interstate commerce. The situation is confusing and unfair for hardworking Americans. And it is legally treacherous for law-abiding companies.

These mariners and companies are at risk of unwittingly committing a felony because of the patchwork of requirements that differ from one side of an invisible line in the water to another. Consider this: A tug and barge unit on a typical Northeast coastal voyage must traverse the waters of seven States to move petroleum from a refinery in New Jersey to a terminal in Maine. A typical inland barge tow will traverse the waters of 11 States moving cargo on the Ohio and Mississippi rivers from Pittsburgh to New Orleans. These vessels are required to comply with Federal standards established by both the EPA and the Coast Guard. The vessels must also comply with State and sometimes water-body specific conditions estab-

lished by each of the States through which they are passing. Failure to comply with these rules is a crime.

This simply is not the right way to regulate an interstate industry that is vital to the American economy. The lack of uniform Federal rules creates confusion that makes it more difficult for companies and mariners to comply with environmental regulations, and it puts hardworking Americans at risk of becoming felons. American companies, mariners and taxpayers deserve better and more streamlined standards from their Government.

Second, we need to really protect the environment. The current regulatory situation actually undermines that objective. The absence of uniform national standards has encouraged a competition among States to establish the most stringent treatment standards on the books. Under the logic of this competition, if the international standard is good, a standard 100 or 1,000 times more stringent must be better.

There are two big problems with this thinking. One, the technology to achieve those standards, or even the science to measure them, simply does not exist. And two, no responsible business can invest millions of dollars per vessel to install a ballast water treatment system that might be accepted in some States but not in others.

The unfortunate result of the situation is that we have spent much of the last several years arguing about and litigating fantasy standards instead of implementing effective ones. That is as bad for the environment as it is bad for business.

Third, we must protect American jobs. The economic stakes are very high. The barges and towing vessels in our industry safely and efficiently move more than 800 million tons of critical cargo each year. Our industry is mostly comprised of small businesses and the regulatory burdens of this broken system are complex to the point of crushing.

Mr. Chairman, the problem is not that vessels discharges are regulated; it is how they are regulated. The current situation is untenable for the movement of American commerce. It is harmful to the high-quality jobs that our industry provides. It is an obstacle to the real protection of the marine environment.

We respectfully urge the Subcommittees to take the lead in correcting a regulatory, environmental, and economic wrong by passing legislation that establishes a national framework for the regulation of vessel discharges.

Thank you for your leadership in holding today's hearing and for providing us the opportunity to testimony.

Mr. LOBIONDO. Thank you, Mr. Allegretti.

Mr. Jewell, you are recognized for your statement.

Mr. JEWELL. Good morning, Chairman LoBiondo, Gibbs and Ranking Members Larsen and Bishop. I am Mike Jewell, president of the MEBA. And I hold a U.S. Coast Guard chief engineer's license and am a captain in the U.S. Navy Reserve.

On behalf of the Marine Engineers' Beneficial Association, the American Maritime Officers, the International Organization of Master Mates and Pilots, and Seafarers International Union, I thank you for the opportunity to testify and for your continued support of the U.S. Merchant Marine.

Collectively, our maritime leader organizations represent men and women working aboard U.S.-flag commercial vessels operating our Nation's foreign commerce and domestic trades. The regulations that govern this fleet are very important. They have a large impact on its ability to compete for a larger share of America's foreign trade and the creation of vibrant coastwise shipping industry and maritime related jobs.

There is a need for clear and consistent measures to address ballast water. The discharge of ballast water in U.S. could disrupt the environment if it contains invasive species. The U.S.-flag maritime community continues to work diligently to address the issue.

As the subcommittee moves forward in their consideration of ballast water regulatory policies, we ask you to include the following factors: The uniformity by flag. In order for its intended effect to stay competitive in the world market, any ballast water regulation applied to the vessels operating in U.S. waters should apply to both U.S.- and foreign-flagged vessels.

A comprehensive Federal standard. Under current law, individual States are able to implement their own regulations and establish State-specific permits. Unfortunately, the State permit development process does not always follow the Federal model of public comment and industry involvement. With constantly changing laws and regulations, it is difficult for vessel operators to formulate and conduct a sound business plan.

The maritime industry will be well-served by a comprehensive Federal standard rather than individual legislation by the States.

The consideration of lakers. Vessels operated exclusively on the Great Lakes require a unique consideration because of the particular environment in which they operate. First, Congress should question the need for any enhanced ballast regulations on those vessels that spend their entire life solely on the Great Lakes. Since the lakers do not leave the system, they will never introduce non-indigenous species into the Great Lakes.

Second, most vessels operating on the Lakes rely on a higher level and speedier transfer of ballast water. Because of the uniquely rapid transfer, many of the ballast treatment systems proposed for their coastal and inland counterparts are not suitable for use on these vessels.

Finally, there is no system today that satisfies the proposed regulatory changes. Because of this and the cost associated, the shipping industry on the Lakes would be put in jeopardy. Well-intentioned environmental policies could have unintended effect of pushing cargo to transportation means that are vastly less environmental friendly than shipping. Therefore when considering regulations on the Lakes, it is important to consider the unique region-specific factors and operating parameters

The promotion of coastwise shipping. Congress and the administration have strongly supported the development of a vibrant coastwise shipping industry that can supplement and compliment the increasingly congested rail and roadways. This energy-efficient and economically friendly industry would create many new transportation jobs that would require little or no Federal funding. Like the lakers, these vessels will spend their entire life in the same waters. Therefore, the risk of introduction of invasive species to the coastal

communities would be limited. To that end, Congress should consider coastwise shipping when drafting regulations that stay within U.S. waters.

Safety. Foremost in the consideration for the ballast standards and the corresponding implementation deadline should be safety. Both the rate and volume of ballast transfers ensure ships remain stable. And should requirements be put in place, where improper technology exists, the ship's integrity and safety of its mariners are put at risk.

In conclusion, the American policymakers have long recognized the best interest of the United States to maintain and support a strong U.S.-flag Merchant Marine industry, our men and women protect, strengthen and enhance our Nation's economic and military security.

Promoting the water-borne shipment of goods would dramatically reduce the country's environmental footprint and create good jobs. Developing highly skilled middle class jobs in today's economic environment is invaluable. To best serve the economy surrounding the U.S.-flag industry, the United States should develop a safe, sound, economically feasible regulations that affect ballast water transfer.

Working together we can achieve a high level of environmental standards as well as foster developments of new jobs.

Thank you. I welcome your questions.

Mr. LOBIONDO. Thank you, Mr. Jewell.

Mr. Allegretti, would you tell the committee from your perspective, what would the impact be if the 401 certifications in California and New York were enforced?

Mr. ALLEGRETTI. It is difficult to contemplate what the effect is on real people when something like that happens. We are talking about real mariners who work aboard vessels. We are talking about companies that have been developed over the course of generations, family-owned companies. And the impacts of those kinds of enforcement are real.

The situation we face with the State certification requirements, as I said in my remarks, is untenable.

Mr. Chairman, you said it is unsustainable. I think that is absolutely correct. It is totally unsustainable.

Today we live with a dysfunctional system that we comply with at great cost, with great difficulty and, at the end of the day, with great uncertainty about whether we are actually in compliance with the law.

There is no way that over the long term, our industry can live with that kind of a system without impacting the folks who make their living aboard the vessels and the ability to move commerce in the interstate system.

Mr. LOBIONDO. So it would, from your perspective, have a dramatic and very negative impact on the ability to retain the level of jobs we have now, let alone hire more people?

Mr. ALLEGRETTI. Absolutely. I mean, companies have to make decisions about future investments. Nobody can make rational judgments about investing millions of dollars in the capital equipment and in the training that goes into their workforce when they look

down the road and see a system that is fundamentally dysfunctional.

Mr. LOBIONDO. Your opinion, how would you suggest we, the Congress, go about creating a uniform Federal framework for regulation of vessel discharges?

Mr. ALLEGRETTI. Our coalition, the Shipping Industry Ballast Water Coalition, has spent a lot of time talking about that, consulting with folks on the Hill about the art of the possible and also looking at the legal paths forward to make sure that if and when Congress enacts remedial legislation, that it will not be subject to being overturned in the courts.

And the best thinking that we can provide to the subcommittees is that the regulation of ballast water and vessel discharges in the future should be done under the framework of the Clean Water Act. That is the proper place for the regulation to take place. But it has to take place within a new subtitle of the law which provides for a national system of regulation, a national system of uniformity, and removes vessel discharges from the NPDES permit system that it is currently subject to as a result of the Circuit Court decision in California.

So we would recommend that the Clean Water Act be amended to allow for a national framework. We would also recommend that the authorities for implementing that framework be jointly provided to the Coast Guard and to EPA. Which should take advantage of the natural strengths of those two agencies. EPA has enormous scientific expertise. The Coast Guard has enormous operational and Maritime expertise. And together, they can set effective national standards, and they can implement and enforce them.

Mr. LOBIONDO. Thank you.

Mr. Jewell, we have had a lot of discussion over the last couple of years and I think pretty broad-based acceptance that we have to really focus on marine highways and implement a short seas shipping program. Your opinion, if we continue to move forward with dozens of State and Federal laws regulating ballast water and other incidental discharges, what impact will that have on our efforts to revitalize our marine highways and implement a short seas shipping program?

Mr. JEWELL. When you look at the short seas shipping, and if—you can overregulate it. And if you do overregulate it, you are not going to have people and companies willing to invest in the short seas shipping if you overregulate the ballast water concerns.

You are in the EEZ zone of the United States, and these ships are going to be designed supposedly not to transfer outside the EEZ zone of the United States. Therefore, they are going to stay in the intercoastal waters of the United States. Very rarely will they probably go outside the 50 miles. And if you regulate them too much, you will not find owners coming in to want to build ships and invest in the marine highway system.

Mr. LOBIONDO. In your opinion, what issues should Congress consider when developing legislation to address these ballast water issues?

Mr. JEWELL. I look at it as a very simple thing. Less than a year ago, I was on a ship. We had to come into the United States, and we did have ballast water. And under a U.S.-flag ship, it is very

simple; once we get inside the EEZ zone, we do not pump ballast out. And when we go to the dock, we do not pump ballast water out in the pier or in the bays. We just simply do not do that. One of the reasons we don't do that is you have fuel lines that run through ballast tanks. And what those ballast tanks—and you don't know the age of the ships, the United States fleet, it could contain oil. We simply do not—and I think it is very simple—is we don't deballast at the pier or dock or in the bays or estuaries. We just simply don't do that. It is a very simple rule.

We exchange the five times out there in the middle of the ocean. Coming from Korea, we actually ballast in Korea to get the ship down to the water to make it safe to passage. Once we get the middle of the ocean, we actually do our five exchanges with good water. Then when we come into the United States, we do not deballast in the bays and estuaries. Simply put.

Mr. LOBIONDO. Thank you very much.

Mr. Larsen.

Mr. LARSEN. Mr. Allegretti, is the issue facing your industry the two Federal agencies or the 26 States?

Mr. ALLEGRETTI. It is the 26 States.

Mr. LARSEN. So from what I understood you to say in response to the chairman's question is that what you propose a separate subtitle under the Clean Water Act that would be specific to ballast water discharge, taking it out of the NPDES process and creating—well, I don't know if you could create a standard—but create a separate subtitle with regard to discharge.

Mr. ALLEGRETTI. Ballast water discharge and all vessel discharge; they should all be regulated together within the same subtitle. And Mr. Larsen, there is precedent for doing that. In the Clean Air Act, there are separate subtitles, one of which deals with point sources and one of which deals with mobile sources and so you would be kind of modeling it along the Clean Air Act model.

Mr. LARSEN. Do you have—does the industry have a view on the Coast Guard's phase one standard?

Mr. ALLEGRETTI. Yes. We think that the Coast Guard's phase one standard is the appropriate standard because it is the internationally recognized standard, and it is the only standard on which there is general consensus is technologically achievable.

Mr. LARSEN. Are any of your members participating in any of the technology evaluations that Admiral Salerno discussed?

Mr. ALLEGRETTI. I don't believe so, but I would like to clarify for the record. There may in fact be some who are participating. And the challenges of ballast water management on towing vessels are unique to what we understand. Most of the knowledge and the science today focuses on large ocean-going vessels and international commerce. The amount of ballast water they carry and their flow rates, are very different, of course, than the smaller towing vessels that operate domestically.

So just a technical challenge that we face as we move forward is making sure that we size the ballast water requirements to the vessels so that it is practicable and achievable.

Mr. LARSEN. And you don't want the technology applied to the vessel to be larger than the vessel itself?

Mr. ALLEGRETTI. That would be a good standard to start with, yes, sir.

Mr. LARSEN. Just trying to help.

Mr. Jewell, are any of the vessels that your members work on participating in technology evaluations.

Mr. JEWELL. Not that I know of, no.

Mr. LARSEN. Can you get back to us?

Mr. JEWELL. Yes, we will. My staff will.

Mr. LARSEN. And then, from your point of view as well, is the issue the two Federal agencies or the 26 States?

Mr. JEWELL. As a deep sea person, it is mainly the Federal, but I truly, and being on the Great Lakes also, so it is kind of a twofold so it is kind of both.

Mr. LARSEN. OK, that is great.

Thank you, Mr. Chairman.

Mr. LOBIONDO. Mr. Gibbs.

Mr. GIBBS. I thank you, Mr. Chairman.

Mr. Jewell, I just want to highlight in your written testimony, you state, on January 1, 2012, New York State regulations add to the EPA's vessel general permit will require that ballast water be as pure as distilled water or similar to bottled drinking water before it can be discharged into the waters of the State. These well-intentioned regulations would have the effect of closing the St. Lawrence Seaway thus disrupting shipping throughout the region and eliminating the waterway's workforce.

I want to highlight that because if you close the Saint Lawrence Seaway because New York State is allowed to do this and January 1, if that was implemented, that would shut down the whole Great Lakes—it is unbelievable to me. I don't know if you want to expound on that or not, but I wanted to make sure that was highlighted because I don't know if you said that in your oral testimony. I don't believe I heard it. I just wanted to highlight that.

Mr. Allegretti, you just said you are in support of phase one uniform standard. What would be the—what is the cost per vessel approximately in order to implement the technology to comply to phase one?

Mr. ALLEGRETTI. It is largely an unknown. I can tell you what I think we understand the range of costs to be.

There was a survey done in California a couple of years ago that looked at 14 different ballast water technologies and tried to price them out. And the average number as I recall—the average cost of the ballast water system was about $900,000 according to the survey. If you think about that relative to the cost of equipment in the towing industry, a barge can cost $400,000 to $500,000 so you would be putting a system on a barge that costs twice the actual construction cost of the barge. An inland towing vessel can cost somewhere in the $3 to $4 million range. So you are putting equipment on the vessel that is 20 to 25 percent of the cost of the original construction price.

So you are talking about very significant, potentially significant economic burdens relative to the cost of the equipment that was constructed and bought for the purposes of the transportation.

Mr. GIBBS. To go beyond phase one, you know I have heard testimony that technology doesn't exist anyway to determine that the

thousands or hundred times the IMO standard, the phase one standard, I am not going to speculate or assume that to put in a ballast water system to go beyond phase one to phase two would be totally out of reach for most people and would shut down the industry.

Mr. ALLEGRETTI. Sir, I guess what I would ask the subcommittee to be particularly attentive to is not using the industry as a test bed for driving the improvement in technology or further stringency of the standards. Those are very good—I think those are very good goals that we should try to achieve. But there is a different way to come at those as opposed to requiring new technologies on vessels to figure out how well it works. We should first make sure that it is technologically feasible, practicable and available commercially before we put a regulation in place that requires people to purchase it.

Mr. GIBBS. My last question, Mr. Jewell, on training and in preparing engineers to operate these ballast water management systems and what is all involved in that and manpower requirements.

Mr. JEWELL. As far as the training, I can honestly say as far as the American merchant marine, we are probably one of the best trained in the world for all of us. I would think that we would adapt very quickly to the training aspects. Each of the unions have their own schools, and what I would expect is that we would go to the manufacturer and get one of their engineers to come in there and set up a class, and we would adapt ourselves very quickly to the new ballast system if that were to be put in place.

I truly look at it as it is not the American domestic fleet that should be the problem because they are actually taking in water from the coasts of the United States. And that way, I truly look at it as a foreign-flag coming into this country that brings in more of the invasive species and everything else like that.

But on the domestic trade, you are taking water, if you are in the Great Lakes, you are taking in the Great Lakes. The Gulf Stream that comes up from Florida all the way to New York, that is where you are going to be getting your ballast water, and then to treat it, it seems to be not productive and at a cost to the companies that right now, the way shipping is, cannot really afford $1 million or $2 million of new equipment to be put on ships.

Mr. LOBIONDO. Ms. Richardson.

Ms. RICHARDSON. Thank you, Mr. Chairman.

Mr. Jewell and Mr. Allegretti, you have heard our chairman reference, as well as Chairman Mica, of an interest in putting some things in place to increase short seas shipping. Do you feel that our current systems are in place to support that potential growth?

Mr. JEWELL. Yes, I do. I think we are moving more and more and to get the trucks and everything else off the highways, I think it is very important to establish the short sea shipping, so to speak, and to build a short sea shipping up to get the shipyards more productive, to build ships in the United States, to provide the jobs. And as the ships are built, then the mariners get to man the ships, and they are all U.S.-crude, U.S.-flag vessels. And I think it is very productive.

Ms. RICHARDSON. Is there anything that you think you need prior to this being implemented? Is there any support or any regu-

lations or anything that you think you need from this Congress in order to implement that effectively?

Mr. JEWELL. Can I get back to you with that?

Ms. RICHARDSON. Sure. Absolutely.

Mr. Jewell, actually I have a couple more questions for you.

In your testimony, you described some of the imbalances you see currently implemented on the U.S.- versus foreign-flag vessels. Could you describe some of those imbalances that you are currently experiencing?

Mr. JEWELL. The cost of the foreign-flag crew is a big thing, and foreign flags, they actually do not have the same regulatory burdens that the Americans do. The American Merchant Marines are probably the most regulated individuals in the country, with driving records—we have to renew our license every year—every 5 years, excuse me. Every 5 years, we renew our license. We have to go through a driving check. We have to go through two or three different other steps to be able to sit there and get our license and to be able to sail. One DUI could actually hurt your career as a U.S. Merchant Marine.

Ms. RICHARDSON. Mr. Allegretti, what impact do you think would we see if we were to impose a national standard on the shipping industry, meaning from these 26 States that multiple people have asked these questions about today? Have you heard discussions as far as are they supportive, or are they completely opposed?

Mr. ALLEGRETTI. You would have national jubilation.

Ms. RICHARDSON. From States.

Mr. ALLEGRETTI. Did you ask about the States?

Ms. RICHARDSON. Yes.

Mr. ALLEGRETTI. I can't speak for the States.

I will say that one of the major impediments to the movement of this legislation has been the kind of theoretical and philosophical arguments about the authority of States and the unwillingness to preempt their actions in this area. And it is obviously a significant issue that the subcommittees have to deal with. I understand it is a sensitive issue.

But in the case of the movement of interstate commerce, it is very clear, it is very clear in the Constitution, it is very clear in two centuries of case law, it is very clear in recent enactments of Congress that there are a small handful of areas where the national interest trumps the authority of States to act independently, and this is one of them.

Ms. RICHARDSON. Are you aware of any specific opposition that has been presented by the State?

Mr. ALLEGRETTI. Not personally, no.

Ms. RICHARDSON. If you have any information, would you mind supplying it to the committee?

Mr. ALLEGRETTI. Be happy to, ma'am.

Ms. RICHARDSON. Thank you. And then my last question.

Mr. Jewell, you state in your testimony that domestically U.S. vessels operate more efficiently, safely, and more environmentally consciously than any other means of transportation. And having worked on transportation now for my entire legislative career, I thought that was an interesting comment. Could you explain further why you feel that is the case?

Mr. JEWELL. Well, we put Americans to work and Americans are the greatest people in the world and that efficiently we do things—the American Merchant Marine adapts so quickly and so well. The ships are run very efficiently in how we do it. Even though we are regulated, we go by all of the regulations. Safety, I think the safety record of the American Merchant Marine—I don't remember the last time a merchant ship crashed into the Golden Gate or the San Francisco Bay Bridge. So I think our safety record speaks for itself.

Ms. RICHARDSON. Thank you.

I yield back the balance of my time.

Mr. LOBIONDO. Mr. Cravaack.

Mr. CRAVAACK. Thank you, Mr. Chairman.

Thank you for our witnesses for being here today.

The steel-making facilities across the country cannot operate without vessel delivery from ore from the range in Minnesota. Vessels typically deliver 8 to 9 million tons of ore from my district to Gary, Indiana, alone each year.

In 2009, the U.S. Army Corps of Engineers reports estimates that the Great Lakes shipping annually saves its customers $3.6 billion in transportation costs when compared to the next least costly mode of transportation.

All vessels seeking to travel within the Great Lakes, between Lake Erie and Lake Ontario, or between the Great Lakes and the Saint Lawrence Seaway must transit New York waters. Imposing requirements that simply cannot be met technology-wise, such as the New York ballast water treatment system requirements 100 times or 1,000 times the IMO standard will of course have huge negative effect on North American steel industry.

If it does not disrupt it entirely, even trying to comply will drive up transportation costs significantly. It would also set dangerous precedent that could eventually affect other U.S. waterways and threaten international commerce in profound ways.

So, essentially, under U.S. law and the Federal Clean Water Act, a single State can effectively blockade traffic from leaving or entering the Great Lakes, New York Harbor or any other harbor they deem fit. For example, if Michigan adopted such a standard, they could affect the waterways down line and affect millions of jobs all over the U.S. and Canada, on the Great Lakes, Saint Lawrence Seaway, Hudson River, and the New Jersey and New York Harbor, including 260,000 jobs in New York Harbor alone.

In understanding all of this, it just seems to me that this is not only going to affect jobs within the maritime community on the docks and at sea, but it is also going to affect the average American downstream.

Mr. Allegretti, could you address that and tell us how this is going to affect just the average American if this was adopted?

Mr. ALLEGRETTI. Well, you said it very well, sir, and there is not a lot that I can add to what you said. And it really underscores the urgency of moving forward remedial legislation.

I guess I would say with respect to the impact on the American consumer, there are really two, I think. One is that to the extent that you raise transportation costs, those costs get passed down the line to the end of the retail chain, and they ultimately end up in the shopping basket of Americans in one way, shape, or form.

The other thing may be a little more philosophical than sort of the economic impact, is really the proper expectation of American citizens that its Government functions well and functions smartly. And this system of the taxpayer paying for two Federal programs and then paying State tax bills to underwrite 26 additional contradictory programs really is a poster child for wasteful Government spending.

Mr. CRAVAACK. Thank you very much, sir. I appreciate those comments, and I would have to agree; we do have the best maritime sailors in the world. So thank you very much for those comments.

Thank you, Mr. Chairman. I yield back.

Mr. LOBIONDO. I want to thank you, Mr. Allegretti, Mr. Jewell, very much. We will try to come up with a commonsense real-world solution that accomplishes what the goals are but allows for us to continue to move forward.

And the hearing is adjourned.

[Whereupon, at 12:00 p.m., the subcommittees were adjourned.]

OPENING STATEMENT OF
THE HONORABLE RUSS CARNAHAN (MO-03)
SUBCOMMITTEE ON COAST GUARD AND MARITIME TRANSPORTATION
SUBCOMMITTEE ON WATER RESOURCES AND ENVIRONMENT
U.S. HOUSE TRANSPORTATION AND INFRASTRUCTURE COMMITTEE
Joint Hearing on

Regulatory Burdens, Ensuring the Flow of Commerce, and Protecting Jobs: A Common Sense Approach to Ballast Water Regulation

Wednesday, July 13, 2011, 10:00 A.M.
2167 Rayburn House Office Building

Chairman LoBiondo, Chairman Gibbs, and Ranking Members Larsen and Bishop: Thank you for holding this joint committee hearing on ballast water regulation. Today's hearing provides a dialogue on how we can better protect our marine environment. Ballast water discharged by ships can contain a variety of harmful biological materials, often including non-native, nuisance, and exotic species that cause extensive ecological damage to aquatic environments. Moreover, the introduction of these pest species to U.S. waters costs an estimated $6 billion every year. For our economic and environmental security, we must take a serious look on how we are regulating ballast water discharge.

Ballast water is the number one source for aquatic nuisances such as the spiny water flea, and zebra and quagga mussels, among other viruses and bacteria. These invasive species drain our already fragile economy of billions of dollars every year by harming marine ecology. We in Congress must support ballast water regulation to protect not only human health, but also the economy of communities along our coasts and lakes.

In 1972, the Clean Water act was enacted to restore the beauty and biological safety of our nation's waters. The law made the discharge of any pollutant, including ballast water containing aquatic nuisance species, unlawful. In 1973, however, the EPA exempted any incidental discharge from normally operating marine engines, which included ballast water. Recently, the EPA and conservation organizations reached an agreement requiring the EPA to issue a new permit regulating ballast water discharges from commercial vessels. This is major step in protecting our environment. Frankly, we must treat toxic ballast release, which is nothing more than living pollution, as stringently as we would treat an oil spill.

For the past 35 years, taxpayers have felt the economic and environmental burden of ballast water toxins. While some fear increased regulation will harm shipping, we must encourage the industry to technologically improve ballast-treating while at the same time protecting jobs in this vital industry. Communication and cooperation between the Coast Guard and the EPA is vital. New regulations will place responsibility on the shipping industry to be more innovative and environmentally aware.

In Missouri, many are concerned about the threat of invasive aquatic species such as the Asian carp, which could cause significant harm to the Mississippi River basin. Our nation's waterways

are critical component of our national infrastructure, and we should treat them as such. We must work together to reach a permanent solution to reducing invasive species transfer, while still supporting economic growth and local communities.

I look forward to hearing from our witnesses today on ways we can regulate ballast water to protect our marine environment and ensure economic security in efficient and effective ways.

July 13, 2011 Hearing on Ballast Discharge
Prepared Questions

1. The discharge of ballast water from vessels is currently regulated by the Coast Guard, the EPA, and state governments. Protecting our nation's aquatic environment is critical, but many of these regulations are unclear and overlapping.
    a. How can we streamline regulation to make it more efficient and effective?
    b. How can we best utilize the different capabilities of the EPA and the Coast Guard to best regulate and identify other types of discharge, such as deck washdown and marine engine effluent?
    c. Do we need to work on a national standard for ballast water regulation?

2. On July 1, 42,000 gallons of crude oil poured out of an ExxonMobil pipeline and into Montana's Yellowstone River. In 2010, the Department of Transportation cited several safety violations, noting the pipeline was "inadequate" and "not properly protected against corrosion." ExxonMobil assured that all of the violations had been fixed, but the pipeline burst a mere 48 hours later. In spite of this event and other "accidents," many Members of Congress are pushing relax regulations.
    a. While all can agree our regulatory infrastructure should be more proficient and well-organized, how can we ensure that government regulates properly so that locations like the ExxonMobil pipeline do not go unattended until the point of disaster?

Statement of

Thomas A. Allegretti
President & CEO
The American Waterways Operators
801 North Quincy Street, Suite 200
Arlington, VA 22203
(703) 841-9300

Before the
Subcommittee on Coast Guard and Maritime Transportation and
Subcommittee on Water Resources and Environment
Committee on Transportation and Infrastructure
United States House of Representatives
Washington, DC

July 13, 2011

Good morning, Chairman LoBiondo, Chairman Gibbs, Ranking Members Larsen and Bishop, and Members of the Committee. I am Tom Allegretti, President & CEO of The American Waterways Operators. AWO is the national trade association for the inland and coastal tugboat, towboat, and barge industry. On behalf of AWO's 350 member companies, thank you for the opportunity to testify at this very important hearing.

I am also here today to testify on behalf of the Shipping Industry Coalition, an alliance of maritime trade associations, including AWO, that together represent over 90 percent of all vessels calling at U.S. ports, in both the domestic and international trades. The Coalition is committed to working with legislators, regulators, and environmental groups to develop environmentally sound and economically practicable solutions to prevent the introduction and spread of invasive species in U.S. waters.

Today's hearing is aptly titled "Reducing Regulatory Burdens, Ensuring the Flow of Commerce, and Protecting Jobs: A Common Sense Approach to Ballast Water Regulation." Our nation urgently needs the common sense approach for which your subcommittees are looking. If we fail to identify and enact such a common sense approach, the flow of essential maritime commerce will be constrained, American jobs will be jeopardized, regulatory burdens on businesses and workers will proliferate, and American taxpayers will continue to foot the bill to support duplicative and sometimes contradictory regulatory programs. The bipartisan leadership of these two subcommittees is crucial to ensure that our nation avoids these unwanted outcomes.

The subject matter before this committee today can be described as addressing three fundamental issues: 1) streamlining duplicative regulations so companies and professional mariners can comply with the law; 2) protecting the environment in which mariners work every day; and, 3) strengthening the foundation of our national economy and protecting jobs. The bad news is that the current patchwork of authorities with respect to the regulation of vessel discharges is antithetical to all of these objectives. The good news is that Congress has the opportunity to change this situation by enacting

legislation that is good for U.S. businesses and American mariners, that is good for the environment, and that is good for the American economy and jobs. We are hopeful that this hearing today will serve as the foundation and the catalyst for the introduction and passage of legislation that accomplishes these basic objectives.

Streamlining Regulations and Providing Clarity to Companies and Mariners

The tugboat, towboat, and barge industry is the largest segment of America's maritime fleet. The industry operates over 4,000 towing vessels and more than 27,000 dry and liquid cargo barges on every commercially navigable inland waterway in the heartland of the United States and throughout the ports, harbors, and coastlines of the Atlantic, Pacific, Gulf of Mexico, and the Great Lakes. More than 30,000 American mariners are employed as crewmembers on towing vessels; these are good, family-wage jobs that offer great potential for career and economic advancement.

To fully appreciate the impact of the issue before this committee today, it is essential to understand that the 4,000 towing vessels in our industry provide a home to mariners for two-thirds of the year. Professional men and women in our industry work, sleep, eat, cook, and clean onboard vessels. Like Americans everywhere, mariners must use water to live and work. The problem with the situation that mariners find themselves in today is that two federal agencies (the U.S. Coast Guard and the Environmental Protection Agency) and some 26 states have established overlapping and sometimes conflicting rules about how to use and discharge water on vessels that are operating in interstate commerce.[1]

This situation is confusing and unfair for hard-working mariners and legally treacherous for law-abiding companies who must train their marine workforce for regulatory compliance. Even more serious is the fact that mariners and companies are at risk of

[1] The Coast Guard regulates the discharge of ballast water under the National Invasive Species Act (NISA); the Environmental Protection Agency regulates ballast water and 25 other vessel discharges under the Clean Water Act's National Pollutant Discharge Elimination System (NPDES) permit program; and, because neither NISA nor section 402 of the Clean Water Act preempts state regulation of vessel discharges, dozens of states have established their own regimes governing vessel discharges.

unwittingly committing a felony in federal and state jurisdictions because of the patchwork of requirements that differ from one side of an invisible line in a waterbody to another. For example, a tug-barge unit on a typical Northeast coastal voyage moving petroleum from an oil refinery at the Port of New York/New Jersey to a terminal in Portland, Maine must traverse the waters of seven states (New Jersey, New York, Connecticut, Rhode Island, Massachusetts, New Hampshire, and Maine). Under the Vessel General Permit, issued by EPA under the Clean Water Act's NPDES program, the vessel is required to comply not only with federal standards established by EPA, but with state – and sometimes waterbody-specific – conditions established by each of the states through which it is passing. The vessel is also subject to Coast Guard regulations for ballast water management and reporting. In this example, each of the seven states the vessel transits have added supplementary conditions to the federal requirements. Failure to comply with these rules is a crime.

To take another example, a towboat pushing barges on a typical voyage from Pittsburgh to New Orleans via the Ohio and Mississippi river systems must travel through the waters of 11 states: Pennsylvania, West Virginia, Ohio, Kentucky, Indiana, Illinois, Missouri, Tennessee, Arkansas, Mississippi, and Louisiana. Under the current system of overlapping authorities, each of these states may adopt its own laws or regulations, or add its own conditions to EPA's federally enforceable VGP, in addition to the federal requirements established by EPA and the Coast Guard governing vessel discharges. In this illustration, the vessel must comply with substantive conditions added to the VGP by five of the 11 states it transits, in addition to federal regulations.

This important fact bears repeating and must be addressed by Congress: the lack of clear, uniform federal rules for managing vessel discharges, including ballast water that is used for maintaining the safety and stability of vessels while underway, creates ambiguity that makes it difficult for companies and mariners to comply with environmental regulations and puts hard-working Americans at risk of losing their jobs and becoming implicated in civil or criminal enforcement actions. This simply is not the right way to regulate an industry that is so vital to the American economy.

As a matter of good public policy, the NPDES permit program is the wrong framework for the regulation of discharges from vessels. The program, as EPA itself has acknowledged, was designed to manage pollution from fixed, land-based facilities, not mobile sources that transit the waters of multiple states. For the first 35 years of the NPDES program's existence, vessel discharges were specifically exempted from the program by EPA regulation. (EPA went to court to retain the exclusion of vessel discharges from this facility-focused regulatory program, but was denied that option by the Ninth Circuit Court of Appeals.) Congress can right this wrong and replace the current patchwork of overlapping and ill-fitting regulatory requirements with a national program for the management of vessel discharges that is consistent, effective, practical, and clear.

Protecting the Environment

Marine transportation is the safest and most energy-efficient mode of transporting the vital bulk commodities that are the building blocks of our national economy. AWO is committed to building on the natural advantages of marine transportation and leading the development of higher standards of marine safety and environmental protection. Seventeen years ago, AWO became the first transportation trade association to adopt a code of safe practice and environmental stewardship for member companies, called the AWO Responsible Carrier Program. Today, third-party-audited compliance with the AWO RCP is a condition of membership in the association.

As already mentioned, AWO has been an active participant in the Shipping Industry Coalition since its inception almost ten years ago. The Coalition has long advocated that the issue of aquatic invasive species be addressed through the passage of uniform standards for vessels.

This history and these organizational characteristics inform our approach to the management of vessel discharges. We seek to protect the marine environment in which

our vessels operate and our mariners live and work, but the current regulatory situation actually undermines this objective. Faced with overlapping federal and state authorities and the absence of uniform, practical national standards for the management of ballast water, for example, we have witnessed a competition among states to establish the most stringent treatment standards on the books. Under the logic of this competition, if the International Maritime Organization standard is good, a standard 100 or 1000 times more stringent than the IMO standard must be better.

There are two big problems with this thinking: 1) the technology to achieve those standards – or even the science to measure them – simply does not exist; and, 2) no responsible business can invest anywhere from hundreds of thousands of dollars (for a towing vessel) to millions of dollars (for a container ship) per vessel to install a ballast water treatment system that might be acceptable in some states but not others. The result: even vessel owners who are prepared to make the enormous investment to install ballast water treatment technology on their vessels have not done so. Meanwhile, companies that are in the business of moving economically critical cargo and providing jobs to American workers must expend precious resources to closely monitor ever-changing state deadlines while developing detailed justifications for why they are unable to install treatment systems that do not exist, or why they cannot reengineer their vessels in infeasible ways. And American taxpayers must pay for the enforcement of duplicative federal and state regulatory programs that do not enhance environmental protection. American companies, mariners, and taxpayers deserve better from their government.

As an example, New York State was recently forced to delay the implementation date of one of its state conditions to the federal VGP. The state required existing vessels operating in New York waters after January 1, 2012, to install ballast water treatment systems that meet a standard 100 times more stringent than the IMO standard. As the EPA Science Advisory Board has confirmed, such technology does not exist. However, New York still expects its requirement to take effect in August 2013, and the state claims that its conditions apply to every vessel that transits its waters, even if the vessel does not actually discharge ballast water in New York state waters. This is ludicrous, in our view.

The situation in New York State is noteworthy, but it is only one data point in a complicated map of overlapping, conflicting, and sometimes downright infeasible state requirements for the management of vessel discharges.

- In 2010, Pennsylvania and Iowa requested that EPA delete several of their infeasible conditions to the VGP. Notably, Iowa, a land-locked state, had required vessels discharging ballast water in the state to conduct an open sea ballast exchange, an obvious impossibility on the inland river system.

- In 2009, after extensive outreach, and subsequent legal action from AWO and other maritime stakeholders, three states – Illinois, New Jersey and California – removed many of their unachievable conditions from the VGP on the eve of its implementation date, narrowly avoiding a total shutdown of waterborne commerce in their waters.

Simply put, we have spent much of the last several years arguing about, and sometimes litigating, fantasy standards, instead of promulgating and implementing effective ones. That is as bad for the environment as it is bad for business.

The problem is not that vessel discharges are regulated, it is how they are regulated. We are hopeful that the recently released recommendations of the National Research Council and the forthcoming final report of the EPA Science Advisory Board can shed needed light on the controversies of the past several years and serve as the basis for a consensus standard on ballast water treatment in which all stakeholders can have confidence. The studies point a way forward, but Congressional leadership will be needed to replace the broken regulatory system that exists today with an effective and practical one.

Strengthening the Economy and Protecting American Jobs

We hope that Congress will seize the opportunity to fix this broken system because the economic stakes are very high. Each year, barges and towing vessels – just one segment of the domestic and international maritime industry that is harmed by the current regulatory patchwork – safely and efficiently move more that 800 million tons of cargo critical to the U.S. economy, such as coal, grain, petroleum products, chemicals, steel, aggregates, and containers. The economic impact of this commerce extends far beyond the maritime industry, to the shippers, producers, and communities that rely on the safe, efficient, and cost-effective transportation of critical commodities, including commodities for export.

The companies that operate the vessels and employ the men and women who move this economically critical cargo are, overwhelmingly, small businesses. In a 2009 analysis, the Congressionally-authorized Towing Safety Advisory Committee estimated that almost 90 percent of barge and towing companies qualify as small businesses under the Small Business Administration definition. The regulatory burdens on these small businesses are complex to the point of crushing, and will only become more so unless Congress acts to consolidate the current hodgepodge of overlapping and inconsistent regulation into something that is uniform, effective, and practical. "VGP 2.0," the second iteration of the 5-year Vessel General Permit, will be proposed later this year. States will then have another opportunity to layer their own waterbody-specific requirements on top of the federal standards. Unless Congress acts now, companies and mariners will again face the prospect of layers of federal and state standards that overlap, duplicate, and even conflict. For example, an inland barge tow moving coal from a terminal in Cincinnati to a plant in Tennessee travels through the waters of six states (Ohio, Indiana, Illinois, Kentucky, Missouri, and Tennessee), four of which have together added more than two dozen conditions to the VGP. The current situation is untenable.

Conclusion

On behalf of the American businesses that operate tugboats, towboats, and barges, that carry the cargo that fuels our economy, that provide high-quality jobs for men and women throughout this country, and that seek to protect the marine environment while keeping our businesses viable, we respectfully urge the Subcommittees to take the lead in righting a regulatory, environmental, and economic wrong. We urge you to introduce and pass legislation that establishes a consistent, practical, science-based framework for the regulation of vessel discharges.

We thank you for taking the essential first step of holding this hearing and we stand ready to assist you in the development and passage of legislation that is good for American businesses and workers and good for the environment and economy of our country. We believe that is a much needed and an achievable goal.

Statement of

James T. Carlton, Ph.D.

Professor of Marine Sciences and
Director of the Maritime Studies Program
Department of Maritime Studies
Williams College, Mystic Seaport, CT

and

Chair, Committee on Assessing Numeric Limits for Living Organisms in Ballast Water
Water Science and Technology Board
Division on Earth and Life Studies
National Research Council
The National Academies

before the

Subcommittee on Coast Guard and Maritime Transportation
and the Subcommittee on Water Resources and Environment
Committee on Transportation and Infrastructure
U.S. House of Representatives

July 13, 2011

Good morning Chairman LoBiondo, Chairman Gibbs, Ranking Members, and members of the Subcommittees.

My name is James T. Carlton. I am a Professor of Marine Sciences at Williams College and I served as the Chair of the "Committee on Assessing Numeric Limits for Living Organisms in Ballast Water" of the National Research Council, the arm of the National Academy of Sciences that operates to advise the government on matters of science and technology.

Our study, requested by the EPA and the U.S. Coast Guard, was to advise these agencies as they develop plans to regulate the concentration of living organisms discharged from ballast water. These plans assume that there is a quantitative relationship between invasive species concentrations in released ballast and the probability of their successful establishment.

Here are our five key conclusions:

First, the methods for determining an exact numeric standard for ballast water discharge are limited by a profound lack of data by which to develop and validate the necessary models that relate organism release to the probability of invasion.

Second, while the number of released organisms is important, it is only one of many variables that determine when, why, and where species will invade. Any method that attempts to predict invasions based on only one factor is likely to suffer from a high level of uncertainty.

Third, that said, there is evidence that significantly reducing the number of released organisms reduces invasion probability. Therefore a benchmark discharge standard that reduces the concentration of organisms below the levels achieved by open-sea ballast water exchange is an important first step.

Fourth, we urge the development of robust statistical models, experimental studies, and field investigations that are focused on the relationship between the quantity, quality and frequency of released organisms and invasion risk. This research could be focused on the types of species that have the highest probability of being good invaders and that are likely to pose the greatest threats to our economy and health. This focus on the "best-case-for-invasion scenarios" sets the regulatory bar high—noting that by "best-case-for-invasion" we mean of course the worst-case for our society.

and

Fifth, our databases on what invasive species are now becoming established in American waters and our knowledge of the details of many vectors that bring these species to the United States—including ballast water, vessel fouling, the aquarium industry, and the live sea food and bait trades—are patchy and substantially mismatched. For example, we have anecdotal accounts that there are now fewer invasions since extensive open-ocean ballast water exchange has

been in place for ships arriving from foreign shores. On the other hand, there is no – no – national survey program to determine if invasions have in fact decreased.

Let me conclude on a personal note, as a marine biologist and as a scientist who has worked on invasive species for 49 years. I have had the privilege to testify before Congress nine times since 1990, and my message remains the same as it did 20 years ago:

Our oceans are under great pressure.

Our natural resources and our economic health derived from our rich maritime assets and heritage are under great pressure.

Our fundamental goal has been and remains to limit invasions of exotic species in order to protect and preserve our existing populations of fish, shellfish, and wildlife and the many other beneficial uses of our nation's waters.

Given the sobering reality of the uncertainty of our knowledge about what regulates and promotes non-native species, our ability to make accurate predictions is severely limited -- underscoring more than ever that *only the strongest science behind the policy* will insure the outcomes we seek.

Thank you for the opportunity to testify. I welcome any questions you might have.

TESTIMONY OF
James A. Hanlon
Director, Office of Wastewater Management
Office of Water
U.S. ENVIRONMENTAL PROTECTION AGENCY
BEFORE THE
SUBCOMMITTEE ON WATER RESOURCES AND ENVIRONMENT
SUBCOMMITTEE ON COAST GUARD AND MARITIME TRANSPORTATION
COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE
UNITED STATES HOUSE OF REPRESENTATIVES

July 13, 2011

Good morning, Chairman Gibbs, Chairman LoBiondo, Ranking Members Bishop and Larsen, and members of the Subcommittees. I am James A. Hanlon, the Director of the Office of Wastewater Management in the Office of Water at the U.S. Environmental Protection Agency (EPA). Thank you for the opportunity to discuss EPA's regulation of ballast water discharges from vessels under the Clean Water Act's National Pollutant Discharge Elimination System (NPDES). My testimony will provide an update on our current activities with respect to regulating ballast water under the Vessel General Permit (VGP), including the role the recent National Academy of Sciences (NAS) and EPA Science Advisory Board (SAB) reports will play in the development of the ballast water provisions for the next iteration of that permit. I will also briefly discuss some of EPA's activities to improve our understanding of ballast water discharges and how they might be controlled; work conducted in close cooperation with our colleagues in the Coast Guard.

Aquatic Nuisance Species (ANS) introductions contribute to the loss of marine biodiversity and have associated significant social, economic, and biological impacts. Economic costs from invasions of ANS range in the billions of dollars annually. The Administration is deeply concerned about the environmental and economic impacts that can result from the introduction of aquatic nuisance species into U.S. waters. In particular, the Coast Guard and EPA have worked very closely over the past several years to develop a strong federal ballast water management program which will reduce the risk of new introductions. It is important to note that the Coast Guard and EPA are implementing different laws (Non-indigenous Aquatic Nuisance Prevention and Control Act (NANPCA), as amended by the National Invasive Species Act (NISA), for the Coast Guard and the Clean Water Act (CWA) for the EPA). In administering our respective authorities, the Coast Guard and EPA have worked closely to harmonize, as appropriate, the proposed Coast Guard ballast water discharge standard regulations and the EPA Vessel General Permit (VGP). The Coast Guard has been a trusted and valuable partner in the EPA's ballast water activities, and we would not have made the significant progress to date without their expertise and cooperation.

Vessel General Permit background

By way of background, on March 30, 2005, the U.S. District Court for the Northern District of California (in Northwest Environmental Advocates et al. v. EPA) ruled that EPA's long-standing regulatory exclusion for discharges incidental to the normal operation of a vessel from NPDES permitting exceeded the Agency's authority under the CWA. The focus of the case was the

significant impact of ANS introduced by ballast water discharges from ships making transoceanic voyages. Section 301(a) of the CWA generally prohibits the discharge of a pollutant without an NPDES permit, and as of the February 2009 date of the vessel exclusion rule vacatur, vessels would not be able to discharge ballast water in U.S. waters without NPDES permit coverage. In response to the court vacatur, EPA issued the VGP in December of 2008 to regulate incidental discharges from vessels, such as ballast water.

As you are aware, Congress passed and the President signed two laws in the summer of 2008 which narrowed the scope of the NPDES permit requirement for vessel discharges. The first law, the Clean Boating Act (Public Law 110-288), exempted recreational vessels from the requirement to obtain an NPDES permit for their incidental discharges and directed EPA and the Coast Guard to develop uniform national regulations for such discharges under Section 312 of the CWA. EPA anticipates proposing management practices for appropriate discharges from recreational vessels in 2012. The second law, (Public Law 110-299), generally imposed a two-year moratorium on NPDES permitting requirements for commercial vessels less than 79 feet and commercial fishing vessels regardless of size, except for their ballast water discharges. This moratorium was subsequently extended to December 18, 2013 by Public Law 111-215. In addition, that law directed EPA to conduct a study of vessel discharges and issue a report to Congress. EPA finalized this Report to Congress, entitled "Study of Discharges Incidental to Normal Operation of Commercial Fishing Vessels and Other Non-Recreational Vessels Less Than 79 Feet" in August 2010.

The current Vessel General Permit

The 2008 VGP regulates approximately 69,000 domestic and foreign vessels, which are subject to the permit's requirements while in U.S. waters. Without coverage under the VGP, owners/operators could face penalties for violating the CWA's prohibition against the discharge of a pollutant without a permit.

In developing ballast water limits for the 2008 VGP, EPA considered limits based on both the technology available to treat the pollutants (i.e., technology-based effluent limits), and limits that are protective of water quality (i.e., water quality-based effluent limits). The CWA requires that all point source discharges must meet technology-based effluent limitations representing the applicable levels of technology-based control (e.g., best available technology economically achievable (BAT)). Water quality-based limits are required as necessary where the technology-based limits are not sufficient to meet applicable water quality standards.

For the 2008 VGP, EPA found that it was infeasible to calculate numeric technology-based limits for ballast water discharges, and thus the current permit contains Best Management Practices (BMPs) that permittees must employ, such as ballast water exchange and saltwater flushing. The 2008 VGP incorporates all of the Coast Guard's mandatory ballast water management and exchange standards, and offers increased environmental protection with several additional requirements, such as requiring U.S.-bound vessels with empty ballast water tanks to conduct

saltwater flushing, and mandating ballast water exchange for vessels engaged in Pacific nearshore voyages that have taken on ballast water in areas less than 50 nautical miles from shore. The VGP also includes a narrative water quality-based effluent limit which requires permittees to control discharges as necessary to meet applicable water quality standards.

Clean Water Act Section 401 certification provisions of the 2008 Vessel General Permit

Under Section 401 of the CWA, EPA may not issue a permit until a certification is granted or waived in accordance with that section by the State in which the discharge originates or will originate. Because the VGP applies nationwide, EPA sought 401 certifications from all 50 states, as well as territories and authorized Tribes. Part 6 of the VGP identifies additional requirements provided to EPA by States and Tribes in their 401 certifications that the States and Tribes deemed necessary to assure compliance with applicable provisions of the CWA and any other appropriate requirements of State and Tribal law. Pursuant to CWA Section 401(d), EPA has attached those State and Tribal provisions to the VGP. Those provisions that constitute effluent or other limitations or monitoring requirements are enforceable conditions as part of the federal permit. Ten states have additional ballast water requirements in the VGP that were submitted in their 401 certifications.

Development of the next Vessel General Permit's ballast water provisions

The current VGP expires on December 19, 2013. EPA plans on proposing for public comment a draft of the next VGP in November of this year. We are then seeking to finalize the permit in November of next year (2012) so that vessel owners and operators will have time to plan for and implement any new permit conditions.

In order to further our scientific understanding of the state of ballast water science, EPA and the Coast Guard sought advice from EPA's Science Advisory Board on the performance and availability of ballast water treatment technologies. EPA and the Coast Guard also commissioned a report from the National Academy of Sciences to inform our understanding of the relationship between the concentration of living organisms in ballast water and the likelihood of nonindigenous organisms successfully establishing populations in U.S. waters.

EPA's primary purpose in requesting the NAS and SAB reports is to provide expert input and advice regarding: (1) the derivation of numeric effluent limits for ballast water, and (2) the status and availability of ballast water treatment technologies.

SAB and NAS report conclusions and how EPA will use them

The SAB found that systems currently exist to meet the International Maritime Organization (IMO) standard[1], and some of those systems may achieve a limit 10 times the IMO standard. However, due to the detection limitations of current monitoring technology and approaches,

[1] The IMO standard sets maximum permissible limits on live organisms in ballast effluent, based on the size or taxonomic category of organisms, and states that ships conducting ballast water management shall discharge:

- "Less than 10 viable organisms per m^3, for greater than or equal to 50 µm in minimum dimension;
- Less than 10 viable organisms per ml, for less than 50 µm in minimum dimension and greater than or equal to 10 µm in minimum dimension; and
- Discharge of the indicator microbes shall not exceed the specified concentrations. The indicator microbes, as a human health standard, include, but are not limited to:
    - Toxicogenic *Vibrio cholerae* (O1 and O139) with less than 1 colony forming unit (CFU) per 100 ml or less than 1 CFU per 1 gram (wet weight) zooplankton samples;
    - *Escherichia coli* with less than 250 CFU per 100 ml;
    - Intestinal enterococci with less than 100 CFU per 100 ml."

the SAB could not definitively determine whether systems could meet this more stringent limit. The SAB also found it unlikely that treatment systems, which attain a limit of 100 times or 1000 times more stringent than IMO standards, exist today. EPA will use the results of this SAB study to inform our technology-based effluent limits in the 2012 VGP.

The NAS report identified the strengths and weaknesses of existing approaches in evaluating risk from ballast water discharges and made recommendations on how to improve our future scientific understanding of this risk. The report also recommended that a benchmark discharge standard should be established that clearly reduces concentrations of coastal organisms below current levels resulting from ballast water exchange (such as the IMO D-2 standard). EPA will use the results of this study to inform development of our water quality-based effluent limits in the 2012 VGP. Furthermore, EPA will work with our federal partners to implement the recommendations of the panel for improving our understanding of the risk posed by ballast water in the future where feasible.

Clean Water Act Section 401 certification provisions in the 2012 Vessel General Permit

Several of the State 401 certifications of the 2008 VGP created different state-specific requirements for discharges into the waters of those states. In developing the 2012 VGP, EPA plans to provide a clearinghouse of information and other tools to track the development of each State's 401 conditions. In addition, one of the reasons EPA commissioned the SAB and NAS studies was to provide the most helpful syntheses of available scientific information so that

the States could use the same information sources as EPA when they develop their 401 conditions.

EPA and Coast Guard Collaboration

As I previously mentioned, EPA is fortunate to have strong federal partners in mitigating the threat posed by ballast water discharges. In February 2011, EPA and the Coast Guard signed a Memorandum of Understanding (MOU) that sets up a cooperative inspection regime for the VGP. Under the MOU, the Coast Guard has agreed to incorporate components of EPA's VGP into its existing inspection protocols and procedures to help the United States address vessel pollution in U.S. waters in a more comprehensive manner. The MOU creates a framework for improving EPA and Coast Guard cooperation on data tracking, training, monitoring, enforcement and industry outreach. The agencies have also agreed to improve existing data requirements so that information on potential VGP violations observed during inspections can be sent to EPA for evaluation and follow-up.

Furthermore, to address the challenges associated with assessing the efficacy of ballast water treatment systems, EPA also collaborated with the Coast Guard, and recently finalized new Environmental Technology Verification (ETV) protocols for sampling and evaluating ballast water discharges from land based testing facilities entitled the "Generic Protocol for the Verification of Ballast Water Treatment Technology." The ETV program verifies the performance of innovative technologies that have the potential to improve protection of human health and the environment. Using these updated protocols, U.S. government agencies

and others will be able to gain a much better understanding of the efficacy of ballast water treatment technologies, and we will be able to improve our understanding of how these systems function.

Conclusion

EPA and the Coast Guard will continue to work closely in the future to minimize the risk of introduction and spread of aquatic nuisance species. This cooperative effort, augmented with other Federal expertise, provides substantial opportunities going forward for enhanced communication, coordination of Federal activities, and engagement with external stakeholders to develop and implement a strong, national ballast water management program.

Once again, Chairmen Gibbs and LoBiondo and Members of both Subcommittees, thank you for the opportunity to discuss EPA's ballast water related activities and I look forward to answering any questions you may have.

TESTIMONY OF MIKE JEWELL
PRESIDENT
MARINE ENGINEERS' BENEFICIAL ASSOCIATION

HOUSE TRANSPORTATION AND INFRASTRUCTURE COMMITTEE
SUBCOMMITTEE ON COAST GUARD AND MARITIME TRANSPORTATON
AND THE
SUBCOMMITTEE ON WATER RESCOURCES AND ENVIRONMENT

HEARING ON
"REDUCING REGULATORY BURDENS, ENSURING THE FLOW OF COMMERCE, AND PROTECTING JOBS: A COMMON SENSE APPROACH TO BALLAST WATER REGULATION"

July 13, 2011

Good morning Chairmen LoBiondo and Gibbs and Ranking Members Larsen and Bishop. I am Mike Jewell, President of MEBA, and a U.S. Coast Licensed Chief Engineer and a Captain in the U.S. Navy Reserve.

On behalf of the Marine Engineers' Beneficial Association (MEBA), the American Maritime Officers (AMO), the International Organization of Masters, Mates & Pilots (MM&P and the Seafarers International Union (SIU), I thank you for the opportunity to testify; and I thank you for your continued support of the U.S. Merchant Marine. We appreciate the opportunity to present our views on "Reducing Regulatory Burdens, Ensuring the Flow of Commerce, and Protecting Jobs: A Common Sense Approach to Ballast Water Regulation."

Collectively, our maritime labor organizations represent ships' Masters, Deck and Engineering Officers, and unlicensed merchant mariners working aboard U.S.-flag commercial vessels operating in our nation's foreign commerce and domestic trades. The development and implementation of policies and regulations that govern this fleet are very important. They have a

large impact on its economic viability and its ability to compete for a larger share of America's foreign trade as well as the creation of a vibrant coastwise shipping industry. The policies and regulations are therefore extremely important to the jobs of the men and women our labor organizations represent. Consequently, we are pleased that this hearing is being held and that we have been given the opportunity to present our views.

Today, more than ever, it is clear that there is a need for clear and consistent measures to address ballast water. These ballast discharges have the potential to carry invasive species into U.S. bodies of water causing environmental damage. The U.S.-flag maritime community has and continues to work diligently to address the issue. Prior to the enactment of state and federal regulatory proposals, the maritime industry began developing ballast water management plans as early as 1993.

On February 6, 2011, the Clean Water Act's National Pollutant Discharge Elimination System (NPDES) came into action. The NPDES is a permit system that was originally intended to apply only to landside establishments concerning discharges into surrounding waters. In 2005, a federal judge overturned the part of the regulation that exempted vessel discharges (which had been in place since 1973) thus subjecting vessels to a set of standards that had been tailored to address a much different industry. Following this court decision, on December 18, 2008, the Environmental Protection Agency (EPA) issued regulations governing 26 vessel discharges. Since these standards have come into effect, in February of 2009, vessel operators have worked with the Coast Guard and the EPA to ensure that they are reaching compliance in a timely fashion. As the Subcommittees move forward with their consideration of meaningful and

attainable ballast water regulatory policy, it is important to consider: uniformity by flag; a comprehensive federal standard; consideration of our Great Lakes fleet (Lakers); promotion of coastwise shipping; and safety.

I. Uniformity by Flag

When vessel operators decide whether to operate under the U.S.-flag and provide the corresponding landside and seafaring jobs, they consider a number of factors. In addition to taxes, fees, and availability of cargo, federal and state safety and environmental regulatory considerations are paramount. Should there be relaxed operational conditions for vessels flying a foreign flag, it places a prejudicial burden on their U.S. counterparts and their ability to compete in the world market. In order to have its intended environmental benefits and remain equitable, any ballast water regulation applied to vessels operating in U.S. waters should be applied uniformly to both U.S.- and foreign-flagged vessels.

II. A Comprehensive Federal Standard

Under current law, individual states are able to implement their own regulations and establish their own state-specific permits regarding ballast water discharge. In a commercial industry that is international and interstate by nature, it is important that operators are able to understand and comply with the set of laws under which they operate. When federal agencies develop new regulations of this magnitude, they usually consult with leaders in the industry, through public comment, and conduct studies in order to calculate the intended effectiveness and feasibility.

Those measures taken by the federal government ensure that regulations will produce their intended effect and that negative consequences will be minimized. Unfortunately, the individual state permit development process does not always follow the federal model of public comment and involvement of the various industries. Also, it is impossible for the ship operators, who operate in many states, to follow the regulatory processes of each jurisdiction in which they conduct business. Further, with constantly changing laws and regulations, it is difficult for vessel operators to formulate and conduct a sound business plan. Thus, the maritime industry will be well-served by a comprehensive federal standard rather than piecemeal legislation by the states.

State regulations are often implemented in contrast or contradiction to one another. For instance, Michigan law requires vessels to utilize one of four specific types of ballast water treatment systems in order to obtain a permit to operate in their waters. California's regulatory program, on the other hand, addresses the performance of ballast water treatment by mandating that vessel discharges contain microbes no larger than 50 micrometers in size. This standard is 1,000 times more rigorous than the international standard in use by the International Maritime Organization. The discrepancy between, and uncertainty of, state ballast regulations make the building and operation of vessels a cumbersome, confusing, and potentially very costly endeavor.

As Congress moves forward with ballast discharge legislation, it must consider a comprehensive, national approach. With input from the states, as well as environmental, scientific, and maritime communities, a suitable level of ballast discharge regulations can be achieved. This will safeguard the economy surrounding the maritime industry, because piecemeal state legislation

may force U.S.-flagged vessels and their corresponding landside and seafaring jobs out of existence.

III. Consideration of Lakers

We thank the Lakes Carriers Association and the Great Lakes Maritime Task Force for assisting with pertinent facts and figures in the preparation of this testimony.

Vessels that operate exclusively on the Great Lakes require unique consideration because of the particular environment in which they operate.

First, Congress should question the need for any enhanced ballast regulations on those vessels that spend their entire life solely on the Great Lakes. As interconnected bodies of water, ballast is only one of 65 different ways in which invasive species can be introduced and spread throughout the Lakes. Since the Lakers do not leave the system, they have never introduced non-indigenous species into the Great Lakes.

Moreover, the U.S.-flag fleet operating on the Great Lakes has been proactive in their effort to prevent invasive species. Best Management Practices have proven to be effective and the maritime industry welcomes an ongoing partnership with government in order to further protect the ecosystem on the Great Lakes.

Second, most vessels operating on the Lakes rely on a higher level and speedier transfer of ballast water. They are generally in port for less than 12 hours and usually discharge up to 16 million gallons of ballast water at rates of 80,000 gallons per minute. Because of this uniquely rapid transfer, many of the ballast treatment systems proposed for their coastal and inland counterparts are not unsuitable for use on these vessels.

Third, state regulations have the ability to adversely affect the shipping industry on the Lakes. On January 1, 2012, New York State regulations added to the EPA's Vessel General Permit will require that ballast water is as pure as distilled water (similar to that of bottled drinking water) before it can be discharged into state waters. These well intentioned regulations would have the effect of closing the St. Lawrence Seaway, thus disrupting shipping throughout the region and eliminating the waterway's workforce.

Finally, lakers are cost and environmentally efficient, especially when compared to the alternative – transferring the bulky cargo to the already overloaded rail and truck infrastructure. Additionally, since lakers do not come in contact with salt water, their life is considerably longer than their seagoing counterparts. With many years left in their lives, it is unlikely that these older vessels would be able to be integrate the potentially massive ballast treatment systems. There is no system today that could handle the flow rates of Great Lakes vessel discharge. Because of this, and the proposed costs associated with the changes anticipated by the U.S. Coast Guard, the shipping industry on the Lakes, as well as the associated jobs, would be put in jeopardy. In this case, well intentioned environmental priorities would have the unintended effect of pushing cargo to transportation means that are vastly less environmentally friendly than shipping.

Therefore, for the aforementioned reasons, when considering regulations for the Lakes, it is important to consider the unique, region-specific factors and operating parameters.

IV. Promotion of Coastwise Shipping

Congress and the Administration have strongly supported the development of a vibrant coastwise shipping industry that would supplement and complement the increasingly congested rail and roadways. This energy efficient and environmentally friendly industry would create many new transportation jobs that require little to no federal investment to start and maintain. Like the lakers, these vessels will spend their entire life in the same waters, thus limiting the risk of the introduction of invasive species along the U.S. coastline. Still in its development, Congress should consider coastwise shipping when drafting regulations for vessels that stay within U.S. waters.

Safety

Foremost in considerations for ballast standards and their corresponding implementation deadlines should be safety. The transfer of ballast water works to alter the vessel's draft, maintain proper propeller immersion, and stabilize the vessel. Both the rate and volume of ballast transfer ensures that the ship remains stable. Should requirements be put in place where improper technology exists, the ship's integrity and the safety of its mariners could be put at risk. Presently, there is no technology that can safely satisfy the proposed regulations in relation to ballast transfer. In fact, there is simply no technology that would meet the proposed standards.

Creating regulations without the availability of safe, cost-effective technology may prove fatal for the U.S. maritime industry.

Conclusion

American policy makers have long recognized, and history has repeatedly proven, that it is in the best interest of the U.S. to maintain and support a strong, active, competitive and militarily-useful privately-owned U.S.-flag merchant marine industry. Our men and women protect, strengthen and enhance our nation's economic and military security. In times of war or other international emergency, U.S.-flag commercial vessels and their United States citizen crews have responded quickly, efficiently, and effectively to our nation's call, providing the commercial sealift capability and civilian maritime manpower necessary to transport and support American forces overseas. Further, the economic security of the country is dependent on a vibrant foreign and domestic U.S.-flag fleet that is ready, able, and willing to ship our country's goods.

Domestically, U.S. vessels operate more efficiently, safely, and more environmentally consciously than any other means of transportation. Increased promotion of the shipment of goods by the U.S. maritime industry will dramatically reduce the country's transportation environmental footprint. Further, the development of highly skilled, middle-class jobs in today's economic environment is invaluable.

To best serve the economy surrounding the U.S-flag maritime industry, the United States should develop safe, sound, and economically feasible regulations that affect ballast water transfer.

While considering the needs and availability of ballast water technology, working together we can achieve a high level of environmental standards as well as foster the development of new jobs.

The U.S. maritime labor organizations look forward to working with Members on both the Subcommittee on Coast Guard and Maritime Transportation and the Subcommittee on Water Resources and Environment in order to address the regulatory concerns surrounding ballast water.

U. S. Department of Homeland Security
United States Coast Guard

Commandant
United States Coast Guard

2100 Second Street, S.W.
Washington, DC 20593-0001
Staff Symbol: CG-0921
Phone: (202) 372-3500
FAX: (202) 372-2311

TESTIMONY OF VADM BRIAN SALERNO
DEPUTY COMMANDANT FOR OPERATIONS

"BALLAST WATER MANAGEMENT"

BEFORE THE HOUSE TRANSPORTATION AND INFRASTRUCTURE
SUBCOMMITTEE ON COAST GUARD AND MARITIME TRANSPORTATION
AND THE
SUBCOMMITTEE ON WATER RESOURCES AND ENVIRONMENT

JULY 13, 2011

Good afternoon, Chairman LoBiondo, Chairman Gibbs, and distinguished Members of the Subcommittees. My name is VADM Brian Salerno and I am the Deputy Commandant for Operations. It is my pleasure to appear before you today to provide information on the Coast Guard's actions to strengthen ballast water management regulations.

The Coast Guard shares this Committee's concerns with the environmental and economic damage that has been caused by aquatic invasive species and recognizes that ballast water discharge is one of the important pathways for invasive species. We are committed to working with the Environmental Protection Agency (EPA) to strengthen our ballast water regulations to reduce the potential for invasive species to enter our maritime environment.

The Coast Guard is a leader in protecting America's maritime environment. The Service takes great pride in preserving and protecting our nation's waters, making them cleaner, safer, and more secure. The Coast Guard has historically provided a leadership role on ballast water management both domestically and internationally, and we remain committed to working diligently with all stakeholders to protect U.S. waters from the introduction of aquatic invasive species.

Since establishing the first U.S. ballast water regulations for the Great Lakes in 1993, the Coast Guard has worked with other Federal partners to harmonize our respective ballast water regulatory programs. For the Great Lakes, this has entailed close collaboration with the U.S. Department of Transportation's Saint Lawrence Seaway Development Corporation (SLSDC) to achieve a comprehensive suite of requirements. Since 2008, the Coast Guard has worked closely with the EPA to coordinate the agencies' ballast water management programs promulgated under the Nonindigenous Aquatic Nuisance Prevention and Control Act (NANPCA), as reauthorized and amended by the National Invasive Species Act (NISA), and the Clean Water Act, respectively. Neither NANPCA/NISA nor the Clean Water Act pre-empt states from setting stricter ballast water discharge requirements, and several states have adopted ballast water regulations.

To implement NANPCA, the Coast Guard established mandatory Ballast Water Management (BWM) requirements for vessels entering the Great Lakes after operating outside the U.S. Exclusive Economic Zone (EEZ). These requirements were subsequently extended to include the Hudson River, north of the George Washington Bridge. Through extensive and close collaboration between the Coast Guard, the SLSDC, Transport Canada and Canada's Saint Lawrence Seaway Management Corporation, every ship

entering the Great Lakes is physically inspected to ensure all ballast water discharged to the Great Lakes has been managed in accordance with the combined U.S. and Canadian regulations.

In 1996, NISA mandated the continuation of the Great Lakes mandatory BWM program, charged the Coast Guard with establishing a voluntary BWM program for all other U.S. ports, and required vessels to submit BWM reports. To implement NISA, the Coast Guard required mandatory BWM reporting and recordkeeping requirements and promoted voluntary BWM practices (including ballast water exchange) for vessels entering all waters of the United States, after operating outside the EEZ. To track changes in the reported ballast water management practices of ships, the Coast Guard and the Smithsonian Environmental Research Center created the National Ballast Information Clearinghouse (NBIC) in 1997. The NBIC functions as a single location for the collection, synthesis, analysis, and interpretation of national data concerning ballast water management and ballast-mediated invasions.

In its report to Congress detailing the effectiveness of the voluntary ballast water management guidelines and based on NBIC data, the Coast Guard concluded that compliance with the mandatory reporting requirements was insufficient to allow for an accurate assessment of the voluntary BWM program In light of these findings, the Coast Guard began strengthening the national BWM program by mandating the previously voluntary BWM program. This required all vessels that operated outside the U.S. EEZ equipped with ballast water tanks to either conduct a mid-ocean ballast water exchange, retain their ballast water onboard, or use an alternative environmentally sound BWM method approved by the Coast Guard. In 2004, the Coast Guard established penalties for failure to comply with the ballast water management reporting requirements and broadened the applicability of the reporting and recordkeeping requirements to a majority of vessels bound for ports or places of the United States.

The Coast Guard's efforts to develop a ballast water discharge standard to set appropriate criteria on the concentration of organisms allowed in ballast water discharge began in early 2001. Through a series of domestic and international workshops, the Coast Guard engaged with scientists, marine engineers, experts from the water treatment industry, and our Federal agency partners. These workshops concluded that the standard should address all organisms at all life stages; specify allowable numbers of living organisms in discharged ballast water; and set environmentally protective and enforceable limits based on sound science.

In 2004, the Coast Guard led the U.S. delegation to the International Maritime Organization (IMO) Diplomatic Conference on Ballast Water Management for Ships. The Conference adopted the International Convention for the Control and Management of Ships' Ballast Water and Sediments, which is a significant step forward in the international effort to combat the spread of aquatic invasive species introduced by ships' ballast water. Informed by the findings and recommendations of the above workshops, the U.S. delegation played a major role in developing the Convention's basic structure and ensuring that a number of key objectives were included.

One significant provision of the Convention calls for ships to meet a ballast water discharge standard according to a schedule of fixed dates, beginning with certain ships constructed in 2009. These fixed dates serve as a signal to both the shipping industry and the emerging ballast water treatment industry of the need for investment, plans, and equipment to meet ballast water management requirements. To facilitate the development of effective and practicable technologies, the Convention contains provisions for the experimental testing of prototype ballast water treatment systems on operating vessels. This provision largely follows the Coast Guard's Shipboard Technology Evaluation Program, implemented in January 2004. In addition, the Convention contains a U.S.-backed provision that allows the sampling of ballast water from ships as a port state control activity for the purposes of evaluating compliance with the Convention.

The standard proposed by IMO is based on the number of living organisms contained in discharged ballast water, rather than a required percentage removal—providing more effective monitoring of compliance and a more uniform level of risk reduction. The standard will significantly reduce the discharge of aquatic invasive species via ballast water. Since 2004, the Coast Guard has continued to lead an interagency delegation in the development and adoption of supporting guidelines for the implementation of the Convention.

Following extensive efforts to develop appropriate and practicable methods for evaluating the performance of BWM systems, and to evaluate the economic and environmental effects of establishing a ballast water discharge standard, the Coast Guard published a Notice of Proposed Rulemaking (NPRM) on August 28, 2009. This NPRM proposes a two-phase performance standard for the allowable concentration of living organisms in ships' ballast water. Phase 1 would establish a standard similar to that adopted by the IMO in 2004, taking effect in 2012. The Phase 2 standard is based on the stringent quantitative discharge limits included in some U.S. state regulations and would provide, if made final, a target to encourage the development of more effective ballast water management systems. The Coast Guard also proposed to conduct a "practicability review" before implementing Phase 2 in 2016. In the event that the Coast Guard finds that systems cannot practicably meet the Phase 2 standard, but a significant improvement over Phase 1 is achievable, the Coast Guard would then seek to implement intermediate standards to reflect such increases in technological capability. The practicability review would occur on a two year basis to provide a continuing incentive for improvements to ballast water management systems.

In association with the discharge standard NPRM, the Coast Guard held public meetings in Seattle, WA; Oakland, CA; New Orleans, LA; Chicago, IL; New York City, NY; and Washington, D.C. The comment period closed on December 4, 2009 and the Coast Guard received 2,214 comments from 662 individuals and organizations. Comments identified concerns regarding the availability of practicable technology that could be used to manage ballast water to achieve discharge limits more stringent than those in the IMO/Phase 1 standard. Other comments identified concerns regarding the availability of practicable technology for several types of vessels, such as tugs and unmanned barges. Comments also addressed the significant environmental impacts of invasive species and the importance of providing the most effective possible control of releases of invasive species.

In June 2010, the EPA Office of Water, in consultation with the Coast Guard, impaneled a Science Advisory Board to provide review and advice regarding whether existing shipboard treatment technologies can reach specified concentrations of organisms in vessels' ballast water, how these technologies might be improved in the future, and how to overcome limitations in existing data. Also last summer, the Coast Guard and EPA requested the National Academies of Science National Research Council's Water Science and Technology Board undertake a study to provide technical advice in setting limits for living organisms in ballast water.

The two-phased approach proposed by the Coast Guard establishes a uniform and practicable requirement that will significantly reduce the risks of ballast mediated introductions of invasive species to U. S. waters and will ensure the environmental protections are increased as science and technology allow.

Thank you for the opportunity to provide comments on the Coast Guard's Ballast Water Management Program. The Coast Guard looks forward to working with Congress as we continue our ongoing efforts to implement an effective ballast water management regime. I will be happy to answer any questions you may have.

DRAFT WRITTEN TESTIMONY

Deborah L. Swackhamer, PhD
Chair of the
U.S. Environmental Protection Agency (EPA)
Science Advisory Board (SAB)

A JOINT HEARING ON
Reducing Regulatory Burdens, Ensuring the Flow of Commerce and Protecting Jobs – A Common Sense Approach to Ballast Water Regulation

Before the
U.S. HOUSE OF REPRESENTATIVES
COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE
Subcommittees on Water Resources and Environment and Coast Guard and Maritime Transportation

July 13, 2011

Introduction

My name is Deborah Swackhamer, and I serve as the Chair of the U.S. Environmental Protection Agency's Science Advisory Board. I am Professor and Charles M. Denny, Jr. Chair in Science, Technology and Public Policy, Hubert H. Humphrey School of Public Affairs, Professor of Environmental Health Sciences, and Co-Director of the Water Resources Center at the University of Minnesota.

The SAB is authorized to provide scientific advice to the EPA Administrator, and one of its roles is to review the quality and relevance of the scientific and technical information being used or proposed as the basis for Agency policies and regulations. I am pleased to offer written testimony on the Science Advisory Board's report: Efficacy of Ballast Water Treatment Systems, and to describe for you its major findings related to ballast water management. This report constitutes an assessment conducted by the SAB's Ballast Water Advisory Panel, whose members included individuals with expertise in statistics, toxicology, risk assessment, aquatic ecology, invasive species, water treatment engineering, marine engineering, and ballast water management. The SAB reviewed and accepted the Panel's report.

Vessel ballast water discharges are a primary source of nonindigenous species introductions and potentially harmful pathogens to marine, estuarine, and freshwater ecosystems of the United States. In recent years, new shipboard treatment systems have been developed and brought to market. This has occurred in response to international guidelines for reducing the impacts of invasive species and in anticipation of new federal rules from the U.S. Coast Guard

and the EPA that would set limits on the number of live organisms allowed in ballast water discharges.

EPA's current Vessel General Permit will expire in December 2013, and a new permit will need to be issued. Last June, EPA's Office of Water asked the SAB to provide advice on technologies and systems to minimize the impacts of invasive species coming from vessel ballast water discharges. More specifically, SAB was requested to provide review and advice regarding whether existing shipboard treatment technologies can reach specified concentrations of organisms in vessel ballast water, how these technologies might be improved in the future, and how to overcome limitations in existing data about ballast water treatment systems in order to improve future assessments. The SAB did not evaluate the risk of invasions as a function of different concentrations of organisms in ballast water discharges because that issue was being addressed by a National Research Council Committee. The SAB did evaluate the ability of existing ballast water management systems to meet numeric discharge standards being proposed by the International Maritime Organization and the US Coast Guard.

To prepare this Advisory report, the SAB reviewed a "Background and Issue Paper" written by EPA's Office of Water and the U.S. Coast Guard. This paper provided an overview of information about major categories of shipboard ballast water treatment technologies and presented proposed ballast water discharge standards drawn from international sources, the USCG, and nine states. In addition, EPA's OW and the public identified information on 51 existing or developmental ballast water management systems (BWMS) for shipboard use. The SAB used this information as the source material for conducting its assessment of ballast water treatment performance and, as requested by EPA, used proposed ballast water discharge standards as the performance benchmarks.

Regulatory context

Ballast water discharges are regulated by EPA under authority of the Clean Water Act (CWA) and by the USCG under authority of the National Invasive Species Act (NISA). In December 2008, EPA issued a Vessel General Permit (VGP) for discharges incidental to the normal operation of commercial vessels, including ballast water discharges. The VGP sets effluent limits for ballast water that rely on "best management practices" (primarily use of ballast water exchange, or BWE) and do not include a numeric discharge limit. The VGP will expire on Dec. 19, 2013. For subsequent iterations of the VGP, the EPA has stated its intention to establish best available technology standards for the treatment of ballast water, once such technologies are shown to be commercially available and economically achievable.

Existing USCG rules governing ballast water also primarily rely on BWE. In August 2009, the USCG proposed revisions to their existing rules to establish numeric concentration-based limits for viable organisms in ballast water. The proposed USCG rule would initially require compliance with a "Phase 1" standard, and, if a practicability review shows it is feasible, it would be followed by a "Phase 2" standard that sets concentration limits at 1000 times more stringent than Phase 1 standards for viable organisms >10 μm in minimum dimension. Phase 2 standards also set limits on the discharge concentration for bacteria and viruses. Neither Phase 1 nor Phase 2 standards have been finalized. The USCG Phase 1 standards have essentially the

same concentration limits as those adopted in 2004 by the IMO International Convention for the Control and Management of Ships' Ballast Water and Sediments (thus both standards are often referred to in the ballast water community as the "D-2/ Phase 1 standards"). The U.S. is not a Party to the Convention, nor has the Convention yet entered into force. However, manufacturers of BWMS have generally designed their equipment to meet these IMO D-2 standards.

Rigorous sampling and statistical verification of performance is essential

The SAB was asked to respond to charge questions that focused primarily on whether test data demonstrated that BWMS met or "closely approached" proposed standards for discharge and whether they did so "credibly" and "reliably." As benchmarks for performance, the SAB was asked to consider proposed numerical standards as well as narrative descriptions such as "no living organisms," "sterilization," and "zero or near zero" discharge. In order to place its assessments of treatment performance in appropriate scientific context, the SAB first had to consider statistical and sampling issues. While "zero detectable discharge" might initially seem a desirable standard to achieve, it is not statistically verifiable. Further, verification of standards that set very low organism concentrations may require water samples that are too large to be logistically feasible. However, when small sample volumes are used, the probability of detecting an organism is low even when the actual organism concentration is relatively high. These errors depend on the sample volume collected, and the relative errors are much larger for small sample volumes. The SAB concluded that a well-defined, rigorous sampling protocol is essential to assess the ability of ballast water treatment systems to meet different levels of performance. These sampling protocols should include consideration of the spatial distribution of plankton in ballast water. The Poisson distribution is recommended as the model for statistical analysis of treated water samples.

The SAB also concluded that the Phase 1 performance standards for discharge quality are currently measurable, based on data from land-based and shipboard testing. However, current, available methods (and associated detection limits) prevent testing of BWMS to any standard more stringent than Phase 1 and make it impracticable to verify a standard 100 or 1000 times more stringent. New or improved methods will be required to increase detection limits sufficiently to statistically evaluate a standard 10 times more stringent than IMO D-2/Phase 1; such methods may be available in the near future. The SAB also noted these conclusions pertain to evaluating data from land-based and shipboard testing, although the same statistical theory and practice applies to compliance testing by port state control officers.

Charge question 1: Performance of shipboard systems with available effluent testing data

a. For the shipboard systems with available test data, which have been evaluated with sufficient rigor to permit a credible assessment of performance capabilities in terms of effluent concentrations achieved (living organisms/unit of ballast water discharged or other metric)?

Evaluations of technologies are necessarily based on performance information for a given point in time and the development and manufacture of ballast water treatment systems is a dynamic industry. For this assessment, the Panel reviewed information provided by EPA's Office of Water and the public. This information included third party reports, including peer-reviewed articles and publications; information provided directly from individual manufacturers

of BWMS (some included data reports, others provided only Type Approval certificates); and public dossiers submitted to the IMO Group of Experts on the Scientific Aspects of Marine Environmental Protection (GESAMP). This information was prepared or published prior to May, 2010. However, the majority were from 2008 to 2010, reflecting growth in the BWMS industry. This industry continues to be dynamic and, while other BWMS may exist, the Panel considered only those for which information was provided.

From this information, the Panel was able to identify 51 individual BWMS, which can be grouped into 34 categories of treatment technologies. Of the 51 BWMS identified, the Panel concluded that test data and other information for 15 individual BWMS were credible and sufficient to permit an assessment of performance capabilities. Of these 15 BWMS, nine systems (representing individual configurations of five different categories of BWMS) achieved significant reductions in organism concentrations, and were able to comply with the Phase 1 standard. These five categories of BWMS technologies are: Deoxygenation + cavitation; Filtration + chlorine dioxide; Filtration + UV; Filtration + UV + TiO2; Filtration + electro-chlorination.

b. For those systems identified in (1a), what are the discharge standards that the available data credibly demonstrate can be reliably achieved? Furthermore, do data indicate that certain systems (as tested) will not be able to reliably reach any or all of the discharge standards shown in that table?

The SAB concluded that the same five BWMS categories (listed above) have been demonstrated to meet the IMO D-2 discharge standard, when tested under the IMO certification guidelines, and will likely meet USCG Phase 1 standards, if tested under EPA's more detailed Environmental Technology Verification (ETV) Protocol (EPA, 2010). The SAB acknowledges the significant achievement of several existing BWMS to effectively and reliably remove living organisms from ballast water under the challenging conditions found on active vessels.

The detection limits for currently available test methods preclude a complete statistical assessment of whether BWMS can meet standards more stringent than Phase 1. However, based on the available testing data, it is clear that while five types of BWMS are able to reach Phase 1, none of the systems evaluated by the SAB performed at 100 times or 1000 times the Phase 1 standard.

c. For those systems identified in (1a), if any of the system tests detected "no living organisms" in any or all of their replicates, is it reasonable to assume the systems are able to reliably meet or closely approach a "no living organism" standard based on their engineering design and treatment processes?

The SAB concluded that it is not reasonable to assume that ballast water treatment systems are able to reliably meet or closely approach a "no living organism" standard. Available data demonstrate that current BWMS do not achieve sterilization or the complete removal of all living organisms.

Charge question 2: Potential performance of shipboard systems without reliable testing data

Based on engineering design and treatment processes used, and shipboard conditions/constraints, what types of ballast water treatment systems can reasonably be expected to reliably achieve any of the proposed standards, and if so, by what dates? Based on engineering design and treatment processes used, are there systems which conceptually would have difficulty meeting any or all of the proposed discharge standards?

The SAB found that nearly all of the 51 BWMS evaluated are based on reasonable engineering designs and treatment processes, and most are adapted from long-standing water treatment approaches. However, the lack of detailed information on the great majority of BWMS precluded an assessment of limitations in meeting any or all discharge standards. In particular, the SAB determined that the following data are essential to future assessments: documentation that test protocols were followed; full reporting of all test results; and documentation that rigorous QA /QC methods were followed.

Although several BWMS appear to safely and effectively meet IMO D-2/ Phase 1 discharge standards, the SAB notes that factors beyond mechanical and biological efficacy need to be considered as BWMS technology matures. Several parameters will affect the performance or applicability of individual BWMS to the wide variety of vessel types that carry ballast water. These include environmental parameters (e.g., temperature and salinity), operational parameters (e.g., ballast volumes and holding times), and vessel design characteristics (e.g., ballast volume and unmanned barges).

Charge question 3: System development

a. For those systems identified in questions 1 a. and 2, are there reasonable changes or additions to their treatment processes which can be made to the systems to improve performance?

The SAB defined "reasonable changes" as moderate adjustments that do not fundamentally alter the treatment process. Based on information from the test results provided, such moderate adjustment could be made to treatment processes, although it may add costs and engineering complexity. Examples of moderate adjustments are:

- Deoxygenation + cavitation. It may be possible to reduce the time needed to reach severe hypoxia, to increase holding time under severe hypoxia, and to increase the degree of cavitation and physical/mechanical disruption of organisms.
- Mechanical separation + oxidizing agent. These systems could be optimized by improving mechanical separation, increasing concentration and contact time for oxidizing agents, and adjusting other water chemistry parameters (e.g., pH) to increase oxidizing agent efficacy.
- Mechanical separation + UV. These systems could be optimized by improved mechanical separation and by increasing UV contact time and dosage.

The SAB concluded that moderate adjustments or changes to existing combination technologies are expected to result in only incremental improvements. Reaching the Phase 2 standard, or even 100 times the Phase1 standard, would require wholly new treatment systems. Such new systems would likely use new technological devices, including those drawn from the water treatment industry; employ multistage treatment processes; emphasize technological process controls and multiple monitoring points; include physical barriers to minimize the potential for cross-contamination of the system; and become part of an integrated ballast water management effort. These new approaches would likely achieve higher performance, but they would require time to develop and test in order to determine their practicality and cost.

b. What are the principal technological constraints or other impediments to the development of ballast water treatment technologies for use onboard vessels to reliably meet any or all of the discharge standards?

Existing ballast water treatment systems have been developed within the context of typical marine vessel constraints, including restrictions on size, weight, and energy demands. The primary impediments to the ability of shipboard systems to meet stringent discharge standards is that treatment processing plants will likely need to be large, heavy, and energy intensive– many existing vessels may be unable to overcome these barriers through retrofitting treatment systems. Meeting more stringent performance standards may require a fundamental shift in how ballast water is managed.

Existing and potential ballast water treatment systems share several common impediments to development: (1) The focus to date has been on engineering the technology with less attention to equally important issues such as training, operation, maintenance, repair, and monitoring. (2) Without an established compliance monitoring and enforcement regime to guide design requirements for technologies, incentives for further innovations are dampened. (3) Facilities properly equipped to test BWMS technologies are few, so increased sharing of data and testing protocols among such facilities is essential. (4) Discharge standards differ domestically and internationally, giving manufacturers multiple standards to target. (5) Meeting more stringent standards will require that treatment systems consistently perform nearly perfectly; a fundamental shift in system design and operational practices would be needed to achieve this level of performance. (6) Once performance tests indicate that a given ballast water treatment system meets Phase 1 standards, further efforts by manufacturers to improve design and efficacy appear to decline.

c. What recommendations does the SAB have for addressing these impediments and constraints?

Clearly defined and transparent programs for compliance monitoring and enforcement are needed to promote consistent, reliable operation of BWMS; such programs do not yet exist. Ideally, vessel crew would have the technological capability to self-monitor BWMS efficacy and make real-time corrections to maintain compliance. BWMS manufacturers should document performance metrics beyond discharge treatment efficacy such as energy consumption and reliability. This would enable vessel operators to select systems that best integrate with their operations. Although meeting significantly higher standards will likely require completely new treatment approaches, the SAB can neither predict which combination of treatment processes

will achieve the highest efficacy nor their ultimate performance. The SAB recommends that one or more pilot projects be commissioned to explore new approaches to ballast water treatment, including tests of ballast water transfer and treatment at an onshore reception facility.

d. Are these impediments more significant for certain size classes or types of organisms (e.g., zooplankton versus viruses)? Can currently available treatment processes reliably achieve sterilization (no living organisms or viable viruses) of ballast water onboard vessels or, at a minimum, achieve zero or near zero discharge for certain organism size classes or types?

Shipboard impediments apply to all size classes of organisms and specified microbes. Some treatment systems or combinations are more effective for treating larger organisms and others for treating unicellular organisms. The technology exists to remove or kill the great majority and in some cases, to remove nearly all organisms ≥50 μm from discharged water. Given the volumes of water involved, onboard sterilization of ballast water is not possible using current technologies. It is not possible to verify zero (sterilization) or near-zero discharge. Such values cannot be measured in a scientifically defensible way.

Charge question 4: Development of reliable information

What are the principal limitations of the available studies and reports on the status of ballast water treatment technologies and system performance and how can these limitations be overcome or corrected in future assessments of the availability of technology for treating ballast water onboard vessels?

Existing information about ballast water treatment is limited in many respects, including significant limitations in data quality, shortcomings in current methods for testing BWMS and reporting results, issues related to setting standards and for compliance monitoring, and issues related to test protocols, including the use of surrogate indicators.

Principal limitations of available data and protocols

Data are not sufficiently compatible to compare rigorously across BWMS because standard test protocols have been lacking. The procedures provided in the 2010 EPA Environmental Technology Verification (ETV) Protocol, which focuses on verification of BWMS performance, will improve this. Currently, reporting of test failures during type approval testing is not required, although some independent test facilities do report failures. This requirement should be uniform across research and other test facilities so that it is possible to draw conclusions about the consistency or reliability of BWMS performance.

Clear definitions and direct methods to enumerate viable organisms are missing for some organisms and are logistically problematic for all size classes, especially nonculturable bacteria, viruses, and resting stages of many other taxa. Methods to enumerate viruses are not included in the proposed USCG Phase 2 standard. The important size class of protists[1] < 10 μm have not

[1] Protists refers to various one-celled organisms classified in the kingdom Protista, and which includes protozoans, eukaryotic algae, and slime molds.

been considered adequately in developing guidelines and standards, although some SAB members felt that other measurements may indicate activity in that size class.

Alternatives to shipboard treatment of ballast water

The SAB found that because of the lack of an overall risk management systems approach, data on the effectiveness of practices and technologies other than shipboard BWMS are inadequate. Insufficient attention has been given to integrated sets of practices and technologies to reduce invasion or pathogen risk by (1) managing ballast uptake to reduce the presence of invasive species, (2) reducing risk of introducing invasive species through adjustments in operation and ship design to reduce or eliminate the need for ballast water, (3) development of voyage-based risk assessments and / or risk management approaches, and (4) options for reception facilities for onshore treatment of ballast water. The SAB concludes that combinations of practices and technologies are potentially more effective and cost-efficient than sole reliance on shipboard ballast water treatment technologies.

Use of reception facilities for the treatment of ballast water appears to be technically feasible (given generations of successful water treatment and sewage treatment technologies), and is likely to be more reliable and more readily adaptable than shipboard treatment. Existing regional economic studies suggest that treating ballast water in reception facilities would be at least as economically feasible as shipboard treatment. However, these studies consider only that vessels call at those regional facilities; if vessels also call at ports outside the region without reception facilities, they would need a shipboard BWMS. The effort and cost of monitoring and enforcement needed to achieve a given level of compliance is likely to be less for a smaller number of reception facilities compared to a larger number of BWMS.

Recommendations to overcome present limitations

As illustrated in the 2010 EPA ETV protocol, testing of BWMS in a research and development mode should be distinct from testing for type approval certification and for verification. Certification testing should be conducted by a party independent from the manufacturer with appropriate, established credentials, approved by EPA/USCG. Test failures and successes during type approval testing should be reported and considered in certification decisions. A transparent international standard format for reporting, including specification of quality assurance / quality control (QA/QC) protocols and a means to indicate QA/QC procedures were followed during testing, are needed. In addition, EPA should develop metrics and methods appropriate for compliance monitoring and enforcement as soon as possible. The SAB suggests a practical step-wise approach in order to cost effectively increase the likelihood of detecting non-compliance. This could include a sequence of compliance reporting, inspections, indirect measures of system performance, indirect measures of non-compliance, and ultimately direct measures of live organisms made by specially trained personnel using rigorous QA/QC assurance methods.

Limits for selected protists < 10 μm in minimum dimension should be included in ballast water discharge standards and in BWMS test protocols. Suitable standard test organisms should be identified for bench-scale testing, and surrogate parameters should be investigated to

complement or replace metrics that are logistically difficult or infeasible for estimating directly the concentration of living organisms. Representative "indicator" taxa (toxic strains of *Vibrio cholerae*; *Escherichia coli*; intestinal Enterococci) should continue to be used to assess BWMS. Estimates of the removal of harmful bacteria will be improved when reliable techniques become available to account for active, nonculturable cells as well as culturable cells.

EPA should conduct a comprehensive analysis comparing biological effectiveness, cost, logistics, operations, and safety associated with both shipboard BWMS and reception facilities. If the analysis indicates that treatment at reception facilities is both economically and logistically feasible and is more effective than shipboard treatment systems, it should be used as the basis for assessing the ability of available technologies to remove, kill, or inactivate living organisms to meet a given discharge standard. In other words, use of reception facilities may enable ballast water discharges to meet a stricter standard.

Ballast water management should be implemented using a risk-based systems approach

The SAB recommended that any ballast water management strategy to decrease the rate of successful invasions by nonindigenous species or introduction of pathogens be part of an overall risk-based management plan. Decisions on approaches to ballast water management should be viewed in the context of risk management and should: (1) recognize the stochastic and non-linear nature of the invasion process, (2) clearly define the management goals, and (3) evaluate the effectiveness of BWMS within the context of other sources of nonindigenous species and other organisms found on the vessel and in the treatment system, and with respect to specific receiving habitats. Each step from ballasting to deballasting, including the choice of procedures and the choice of treatment technologies, contributes to the probability of an invasion occurring. Hazard Analysis and Critical Control Points (HACCP) has been demonstrated to be an effective, flexible, and practical risk management tool in a variety of situations. It is currently in wide use in the food safety industry and could be applied to ballast water management. HACCP, or other risk management tools, could be used to guide priorities, such as deploying ballast water treatment technologies or to establish schedules for compliance monitoring focused on high-risk vessels or high-risk voyages.

STATE OF CALIFORNIA — EDMUND G. BROWN JR., *Governor*

CALIFORNIA STATE LANDS COMMISSION
100 Howe Avenue, Suite 100-South
Sacramento, CA 95825-8202

CURTIS L. FOSSUM, *Executive Officer*
(916) 574-1800 FAX (916) 574-1810
California Relay Service from TDD Phone **1-800-735-2929**
from Voice Phone **1-800-735-2922**

Contact Phone: **(916) 574-1800**
Contact FAX: **(916) 574-1810**

July 25, 2011

File Ref: W9777.290

The Honorable Frank LoBiondo, Chairman
Coast Guard and Maritime Transportation Subcommittee
House Transportation and Infrastructure Committee
2165 Rayburn House Office Building
Washington, DC 20515

The Honorable Bob Gibbs, Chairman
Water Resources and Environment Subcommittee
House Transportation and Infrastructure Committee
2165 Rayburn House Office Building
Washington, DC 20515

The Honorable Rick Larsen, Ranking Member
Coast Guard and Maritime Transportation Subcommittee
House Transportation and Infrastructure Committee
2163 Rayburn House Office Building
Washington, DC 20515

The Honorable Timothy H. Bishop, Ranking Member
Water Resources and Environment Subcommittee
House Transportation and Infrastructure Committee
2163 Rayburn House Office Building
Washington, DC 20515

Re: Joint Hearing on Ballast Water Regulation

Dear Congressmen:

I would appreciate your including this letter in the record for your July 13, 2011 hearing on *Reducing Regulatory Burdens, Ensuring the Flow of Commerce, and Protecting Jobs: A Common Sense Approach to Ballast Water Regulation.*

Since 1999, California has been and remains a national and world leader in the development of effective science-based management strategies for preventing species introductions through vessel vectors. The Commission's Marine Invasive Species Program (MISP) pursues aggressive strategies to limit the introduction and spread of nonindigenous species (NIS), including recently establishing strict performance standards for the discharge of

ballast water, which serve to force the regulated industry to develop technology-based strategies to manage NIS in ballast water discharges.

California's technology-forcing standards were established, in part, in recognition of the severe ecological, economic and human health impacts NIS can have in recipient environments. For example, the European zebra mussel (*Dreissena polymorpha*), introduced to the Great Lakes by ballast water discharge in the 1980s, clog municipal water systems and electric generating plants costing approximately a billion dollars a year (Pimental et al. 2005). Their large populations have caused extirpation of native species, declines in recreationally valuable species, and as of 2008, they have spread to California. Their impacts to waterways and water conveyance systems (e.g. the California Aqueduct) are only beginning to be calculated. In San Francisco Bay, the introduced overbite clam (*Corbula amurensis)* is believed to be a major contributor to the decline of several pelagic fish species in California's Sacramento-San Joaquin River Delta, including the threatened delta smelt (Feyrer et al. 2003, Sommer et al. 2007). Vessels and ballast water have also been connected to cholera outbreaks (Takahashi et al. 2008, Ruiz et al. 2000b), the microorganisms that cause paralytic shellfish poisoning (Hallegraeff 1998), and the microbial indicators for fecal contamination (Reid et al. 2007).

Attempts to eradicate NIS after they have become established are often unsuccessful and costly (Carlton 2001). Between 2000 and 2006, over $7 million was spent to eradicate the Mediterranean green seaweed *(Caulerpa taxifolia)* from two small embayments in southern California (Woodfield 2006). As of the end of 2010, over $12 million has been spent in San Francisco Bay to control the Atlantic cordgrass (*Spartina alterniflora*) (M. Spellman, pers. comm. 2010). In addition, California has one of the largest ocean economies in the United States, ranking first in both employment and gross state product (GSP) (Kildow and Colgan 2005). In 2000, coastal recreation and tourism accounted for over $12 billion in GSP, and the fishing industry accounted for over $400 million in GSP. Given that NIS can and have impacted the ecological and economic functions of the state, it is critical that future introductions be prevented.

California's performance standards for ballast water discharge were selected following extensive consultation with a technical advisory committee composed of regulators, research scientists, industry representatives and environmental organizations. These standards were selected because they encompassed several desirable characteristics: 1) A significant improvement upon ballast water exchange; 2) They were in-line with the best professional judgment of scientific experts that participated in the development of the international ballast water management convention; and 3) Approached a protective zero discharge standard. The Commission does not believe that the proposed USCG Phase I or the International Maritime Organization's performance standards are adequate, as the best available science indicates that that they do not improve significantly on ballast water exchange (current status quo). For a significant proportion of vessels discharging in the U.S., Minton et al. (2005) estimated that, for the largest organism size class (>50 micrometer (μm)), approximately 17.2% of discharging vessels could meet the proposed Phase I standard through ballast water exchange, and 3.8 % of vessels could meet the Phase I standard for this size class without performing ballast water exchange at all. In 2003 the IMO Study Group on Ballast Water and Other Ship Vectors (SGBOSV) reviewed their collective data on organism concentrations in unexchanged ballast water and found that even tanks that did not exchange often met an equivalent to the Phase I standard for the 10 – 50 μm size class of organisms (MEPC 2003, Annex 1). The SGBOSV is composed of an international group of scientists with extensive knowledge about the biology of ship-mediated invasions.

In recognition of the varying needs and values of coastal economies in individual states, and the impact NIS can have on those economies, as well as on ecological communities and human health, I respectfully urge against actions that would preempt state authority to establish ballast water discharge performance standards which are more stringent than federally established ones. Given the potential cost to California's coast from species introductions, implementing a protective standard is critical to move California expeditiously towards elimination of the discharge of nonindigenous species into the waters of the state.

Thank you for consideration of these comments. If you have any questions, please do not hesitate to contact me.

Sincerely,

CURTIS L. FOSSUM
Executive Officer

cc: John Rayfield, Coast Guard & Maritime Transportation - Majority
Ken Kopocis, Coast Guard & Maritime Transportation - Minority
Andrew Rademaker – Coast Guard & Maritime Transportation - Majority
John Pawlow, Water Resources & Environment - Majority
Ryan Seiger, Water Resources & Environment - Minority
Kevin Mercier, Acting Chief, Marine Facilities Division
Elinor Schwartz, Washington Representative, California State Lands Commission

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Passenger Vessel Association
103 Oronoco Street, Suite 200
Alexandria, VA 22314
Phone (703) 518-5005
Fax (703) 518-5151
Toll Free 1-800-807-8360
pvainfo@passengervessel.com
www.passengervessel.com

Passenger Vessel Association
Testimony Submitted for the Record

Hearing: Reducing Regulatory Burdens, Ensuring the Flow of Commerce, and Protecting Jobs:

A Common Sense Approach to Ballast Water Regulation

Subcommittee on Coast Guard and Maritime Transportation and the

Subcommittee on Water Resources and Environment

Committee on Transportation and Infrastructure

U.S. House of Representatives

July 13, 2011

Captain Jay W. Spence
President

Passenger Vessel Association
103 Oronoco Street, Suite 200
Alexandria, VA 22314
Phone: 703-518-5005
www.passengervessel.com

The Passenger Vessel Association (PVA) – the national trade association for owners and operators of U.S.-flagged passenger vessels of all types – urges Congress to revise the current regime for regulating discharges incidental to the normal operation of a vessel.

Vessel General Permit Originated from an Overreaching Court Decision

The Environmental Protection Agency's current regulation of vessel discharges incidental to the normal operation of a vessel consists of an industry-wide Vessel General Permit (VGP). EPA was instructed to create this regulatory system not by an act of Congress but by a ruling of the federal judiciary. For decades, EPA's regulations exempted from the Clean Water Act's permitting requirements incidental discharges associated with the normal operation of a vessel. This exemption did not include sewage discharge, which is regulated by other statutory requirements. In 2006, the litigation entitled *Northwest Environmental Advocates et al v. Environmental Protection Agency* yielded a ruling that went far beyond the issue that concerned the plaintiffs: the introduction of aquatic invasive species contained in ballast water discharges. The court issued an overreaching ruling instructing EPA to create a regulatory framework for all incidental discharges to be imposed on the entire vessel community, recreational and commercial. The court decision was so encompassing and impractical that Congress felt compelled to enact legislation exempting recreational boats and most commercial vessels of less than 79 feet from the impact of the court ruling. Unfortunately, additional legislation is required to put in place a realistic policy that supersedes the effect of the court decision.

Most vessels operated by members of the Passenger Vessel Association (PVA) do not routinely carry or discharge ballast water; therefore, they do not pose a risk of introducing aquatic invasive species.

PVA vessel members do have other types of normal operational incidental discharges. These discharges include graywater in the galleys and runoff water from rain and spray from deck washings. No environmental harm has been proven for these types of discharges.

Every passenger vessel, including those used for transportation purposes, relies on the beauty of our waterways on which Americans want to vacation, travel and visit. Every operator of a passenger vessel believes in contributing to the national effort to maintain and improve water quality.

Renew the Exemption of Commercial Vessels less than 79 feet

Congress, in order to reduce the population of vessels affected by this regulatory burden, exempted certain categories of vessels from compliance with the Vessel General Permit. Among the types of vessels exempted were commercial vessels of less than 79 feet in length (assuming that they do not discharge ballast water). However, this

exemption will expire as of December 18, 2013, the same day the current Vessel General Permit expires.

There has been no information proving environmental harm from incidental discharges from this particular category of relatively smaller commercial vessels. Even EPA in its *Report to Congress: Study of Discharges Incidental to Normal Operation of Commercial Fishing Vessels and Other Non-Recreational Vessels Less than 79 Feet*, found that discharges from the vessel populations studied did not exceed National Recommended Water Quality Criteria (NRWQC). PVA urges Congress to renew this statutory exemption permanently.

Need Uniform National Standard – Relief from Arbitrary and Varied State Requirements

Despite the ruling of the federal judiciary, PVA believes that the permitting system of the Clean Water Act is not the appropriate public policy response to the issue of discharges incidental to the normal operations of a vessel. PVA urges that Congress devise a legislative response to this problem that is better suited to the unique characteristics of the maritime industry.

The Vessel General Permit preserves the right of an individual state to impose its own discharge requirements on vessels and to take enforcement action. PVA acknowledges that this provision is compelled by section 510 of the Federal Water Pollution Control Act (section 1370 of title 33 United States Code). However, a "two-headed" regulatory scheme is completely inappropriate when it comes to vessels. Preserving state authority may make sense for permits for stationary point sources. However, vessels, including some U.S.-flagged passenger vessels, routinely move from state to state. They cannot be expected to comply with one set of requirements while sailing the waters of one state and a completely different set of requirements when traveling within the boundaries of another state. These state requirements are unrealistic and were imposed on an industry that was not allowed to consult or comment on the rules affecting their business.

This is not a theoretical problem. Many passenger vessels routinely travel in two or more states. Examples include the tour from Washington's southwest waterfront (D.C. and Maryland waters), the Bridgeport-Port Jefferson Steamship Company (Connecticut and New York), the *S.S. Badger* ferry (Wisconsin and Michigan), and the Cape May-Lewes ferry (New Jersey and Delaware). Why are these vessels potentially subjected to different discharge standards and requirements while transiting a single body of water? There should be a single nationwide system.

Cost of Regulation and the Cumulative Impact of Regulation on Small Business

PVA members are greatly concerned about the economic burdens imposed by the cumulative impact of numerous federal laws and regulations. In recent years, passenger vessel operators have had to absorb costs associated with Coast Guard maritime security mandates, higher assumptions about average passenger weight for purposes of calculating

vessel stability, new rules for serving customers with disabilities and the Vessel General Permit.

According to the U.S. Small Business Administration, small businesses "continue to bear a disproportionate share of the federal regulatory burden." The SBA estimates that the cumulative cost of federal regulation per employee for a firm with fewer than 20 employees is $10,585 per year. For a company with between 20 and 499 employees, the estimated annual cost per worker is $7,454.

Federal regulators must take into account that many PVA vessel operators have seasonal businesses, but that they frequently compete with land-based venues. Since the potential customer can often find similar services or attractions ashore, more burdensome rules placed on the vessel operator (such as multiple and differing discharge permitting standards) create a financial disadvantage, since the land-based competitor does not have to shoulder a similar regulatory burden.

The Passenger Vessel Association urges Congress to provide relief. Your consideration of our comments is appreciated. Please let us know if we can answer any questions or provide you with any additional information.

Sincerely,

Captain Jay W. Spence
President

For more information contact:
Jen Wilk
Passenger Vessel Association
703-518-5005 ext. 24
jwilk@passengervessel.com

Joint hearing of the Subcommittee on Coast Guard and Maritime Transportation and the Subcommittee on Water Resources and Environment:

Reducing Regulatory Burdens, Ensuring the Flow of Commerce, and Protecting Jobs: A Common Sense Approach to Ballast Water Regulation

RE: WDFW Testimony on Ballast Water Standards to House Committee

The Washington Department of Fish and Wildlife (WDFW) is supportive of a regional or national ballast water discharge standard which is science-based and adequately protects our freshwater, estuary, and marine waters from aquatic invasive species (AIS).

The State of Washington and the United States Government have made very large investments in restoring and protecting the health of our two largest water bodies: Puget Sound and the Columbia River. Aquatic invasive species (AIS) are one of the greatest threats to marine and estuarine health and ballast water is a scientifically-established primary vector for transmission of AIS. The Columbia River, being a freshwater-dominated system, is also uniquely vulnerable to Zebra and quagga mussels from California freshwater ports which would be catastrophic with the state and federal hydro-system infrastructure and the associated salmon passage facilities. In recognition of these vulnerabilities, the Washington State legislature established ballast water management laws, an inspection and monitoring program to enforce those laws, and provided WDFW with the authority to set performance discharge standards for minimum organism concentrations by rule.

Since 2000, WDFW has pursued west coast regional and national standards consistency through entities such as department's Ballast Water Work Group and the regional Pacific Ballast Work Group. The Ballast Water Working Group is a collaborative forum comprised of the Washington Department of Ecology (Clean Water Act nexus), U.S. Coast Guard (USCG), the shipping industry, NGOs, ports, and other interested parties that was created to advise WDFW on implementation of the state ballast water management program. The Pacific Ballast Work Group is expanded to include the states of California, Oregon, Alaska, and Hawaii, and acts as lead for ballast water and hull fouling issues with the West Coast Governor's Agreement on Ocean Health. These forums have provided an open and transparent process where industry and environmental concerns are taken into account and pragmatic approaches to resolve problems are identified.

The states have been anticipating federal actions since 2000 and have only recently been adopting their own standards to fill a long-standing resource protection gap. Regardless of national standards, federal-state partnerships are critical to effective implementation as the USCG does not have the resources to adequately inspect and monitor ballast water compliance. All west coast states have good working relationships with both the USCG and industry that should be encouraged and supported by congress.

Thank you for the opportunity to provide additional testimony for this hearing and we look forward to working with your committees in providing management and compliance information, and how best to promote a federal/state cooperative program for ballast water management.

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