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# Lower Great Lakes Ballast Water Workshop

# Proceedings

**Sponsored by:**
**Pennsylvania Sea Grant**

**March 13-14, 2008**
**Erie, Pennsylvania**

## PREFACE

The Lower Great Lakes Ballast Water Workshop was undertaken in an effort to bring together stakeholders from the many groups affected by the issue of ballast water regulation. This workshop, facilitated by Pennsylvania Sea Grant, provided an update and overview of current ballast water policy, legislation, and research as it applies to the Great Lakes. Scientists, legal experts, legislators, shipping industry personnel and agency staff from the United States and Canada discussed the current state of ballast water policy, pending legislation, and proposed ballast water treatment methods. Participants also evaluated the current risk of the introduction and spread of new aquatic invasive species (AIS) using ballast water as a vector.

Special thanks is extended to all of the workshop speakers, including Sarah Bailey (Fisheries and Oceans Canada), Dale Bergeron (Minnesota Sea Grant), Allegra Cangelosi (Northeast Midwest Institute), Commander Tim Cummins (United States Coast Guard), Jim Grazio (Pennsylvania Department of Environmental Protection), the Honorable Pat Harkins (Pennsylvania House of Representatives), the Honorable John Hornaman (Pennsylvania House of Representatives), John Jamian (Seaway Great Lakes Trade Association), Dave Knight (Great Lakes Commission), Ivan Lantz (Shipping Federation of Canada), Jennifer Nalbone (Great Lakes United), Chuck O'Neill (New York Sea Grant), James Schardt (Great Lakes National Program Office/United States Environmental Protection Agency), Stephanie Showalter (National Sea Grant Law Center), and Jim Weakley (Lake Carriers Association). Thanks also to Mark Gorman (Pennsylvania Environmental Council), Helen Domske(New York Sea Grant), and Jim Grazio for facilitating the workshop sessions.

**TABLE OF CONTENTS**

## INTRODUCTION

On March 13 and 14, 2008, Pennsylvania Sea Grant sponsored the Lower Great Lakes Ballast Water Workshop. This 1 $^{1/2}$ half day workshop was held at the Tom Ridge Environmental Center in Erie, Pennsylvania. Fifty-eight people from five Great Lakes states and Canada attended the workshop in an effort to gain a better understanding of the current state of ballast water policy, research, and legislation. Presenters included stakeholders from industry (both shipping and engineering); the research community; regulatory and conservation agency staff; and legal experts and policy makers. Economic and environmental impacts of Great Lakes shipping were discussed, along with methods of treatment for ballast water, rapid response protocols for invasive species, voluntary Best Management Practices used by Great Lakes shippers, and an overview of individual Great Lakes state's pending ballast water legislation.

Breakout sessions included discussions on research and policy. These breakout sessions were provided to encourage input from workshop attendees.

An overarching goal of the workshop was to create a summary document that could be used as a tool to develop law, policy and regulations regarding the introduction of invasive species into the Great Lakes.

**SESSION ONE: RESEARCH UPDATE**

**Please note**: presenter Power Point presentations are available on the Pennsylvania Sea Grant Web site (http://seagrant.psu.edu/publications/proceedings.htm).

**Jim Grazio**

*The impact of invasives…why should we care?*

Pennsylvania Department of Environmental Protection, Tom Ridge Environmental Center, 301 Peninsula Drive, Suite 4, Erie, PA 16505

*Abstract:* Invasive species are increasingly in the public consciousness. But controversy and misunderstanding surround the very topic. The Great Lakes have a long history of invasions by nonindigenous aquatic species, and new invasions are looming on the horizon. Many of these species have significant ecological and economic consequences, and the full range of impact may not yet be fully understood. This presentation provides an overview of important aquatic invasive species in the Great Lakes and discusses the cumulative impact of these invasions. A case study is presented featuring dreissenid (zebra and quagga) mussels, with an emphasis on ongoing ecological impacts.

**Dale Bergeron**

*The good, the bad, and the ugly or: don't throw the baby out with the ballast water*

Minnesota Sea Grant, University of Minnesota Duluth, 2305 East Fifth Street, Duluth, MN 55812-1445

*Abstract:* What is ballast water? Why is it used? Why don't we just fix the problems? These are all good questions that are commonly asked, especially when the discussion has to do with the negative impacts of the unwanted transport of aquatic invasive species. The issue of ballast water is not just a Great Lakes problem, it impacts the entire world. In fact, due to the efficacy of flushing ballast tanks with salt water to kill fresh water species, the Great Lakes are now in a better position to avoid new introductions than most salt water ports. The problem of regulating ballast water is complex for many reasons; modern ship design, volumes of water moved, loading efficiency (cost and speed), impacts on our economy, and the international nature of modern supply chains. These are just some of the issues. There are a host of factors that must be added to the equation that seeks to balance our social and

economic prosperity with environmental sustainability. Simply put, there are costs for every choice. Understanding the environmental, economic, and social costs of our transportation choices is essential to creating both sustainable economies and environments.

**Chuck O'Neill**

*Economic Impact of aquatic invasive species on the Great Lakes*

Cornell University/New York Sea Grant, Morgan II, SUNY College, Brockport, NY 14420

*Abstract:* The Great Lakes are home to approximately 185 non-native aquatic species. Although not all can be considered "invasive", most have had detrimental effects on the lakes. Ballast introductions are not new to the Great Lakes, with solid ballast introductions occurring as far back in history as the mid-1800s. More than one third of all Great Lakes invasive species are believed to be ballast water related with approximately 70 percent of post-1959 introductions arriving in ballast water. As new species continue to be introduced from ecosystems globally (it is not unusual for a single ship to transit more than two dozen ports on five continents in any given year), the economic impact of introduced species will continue to grow. Unfortunately, the total economic impact of aquatic invasive species on the Great Lakes is unknown. This presentation used the zebra mussel, which has been estimated to have had a total North American impact of $1 billion since its discovery in 1989, as an indicator of economic impact.

**Allegra Cangelosi**

*The Great Ships Initiative: a results engine for the Great Lakes region*

Northeast-Midwest Institute, 50 F. Street NW, Washington, D.C. 20001

*Abstract:* Aquatic invasive species cause permanent harm to the Great Lakes and the ballast water of commercial ships is a leading vector of new introductions of pest species. In 1996, Congress found, consistent with a consensus among industry and environmental advocates, that effective and safe treatment of ballast water by ships would resolve the problem (National Invasive Species Act of 1996). In addition, routine ballast treatment is a specific objective of the Great Lakes Regional Collaboration, the United States Coast Guard, and the International Maritime Organization. However, research and development of safe and proven ballast treatments has been slow in the absence of clear federal standards and testing procedures. In addition, only specialized testing facilities can deliver credible estimates of a potential system's effectiveness.

In 2006, a collaborative of public and private entities launched the Great Ships Initiative, managed by the Northeast-Midwest Institute, to help break the log jam around treatment development and testing. Since that time, the GSI has designed, constructed and this summer will begin operating a premier fresh water ballast treatment testing facility in the Great Lakes region (Superior, WI). The start-up is timely; U.S. federal requirements around ballast treatment testing and approval are expected to be in place in 2008. Once these regulations are issued, testing and approval processes will be the only hurdles standing in the way of treatment installation and use by ships. In the absence of adequate testing capacity, there will be a bottle neck preventing unnecessary delays in treatment implementation. Once treatments are proven and ready for use, the GSI will shift gears to speed installation and effective use of treatments by ships visiting the Great Lakes.

**Dave Knight**

*Ballast treatment technology*

Great Lakes Commission, Eisenhower Corporate Parkway, 2805 S. Industrial Highway, Suite 100, Ann Arbor, MI 48104-6791

*Abstract:* Growing urgency over the transmittal of aquatic invasive species via ships' ballast water has increased the focus on ballast water treatment technologies, both those currently commercially available and those under some stage of research and development. This presentation identified general types of treatment technology, how they are designed to work, and - where possible, where they have been actually deployed onboard a working vessel. Also discussed was known vendors of commercially available (or soon to be) ballast treatment systems on the international market as identified in a June, 2007 report commissioned by Lloyds Register. *Please note: no Power Point is available for this presentation.*

**Sarah Bailey**

*Evaluating current risk of introduction and spread of AIS to Great Lakes ports by foreign and domestic ships*

Sarah Bailey[1] and Chris Wiley[2]

[1]Fisheries and Oceans Canada, University of Windsor-GLIER, Windsor, Ontario N9B 3P4
[2]Fisheries and Oceans Canada/Transport Canada

*Abstract:* Comprehensive scientific research conducted over the past five years to elucidate mechanisms of ship-mediated introductions of aquatic invasive species have resulted in revisions to both U.S. and Canadian ballast water management regulations. As a result, the current risk of introduction of species via ballast water has been lowered considerably. Data will be presented from ongoing scientific studies to answer some of the 'hot topic' questions circulating around the Great Lakes basin:

- How effective are the current ballast water management strategies from a biological point of view?

- Does ballast water transported by domestic commercial vessels pose a risk for introduction of new species to, or spread of introduced species within, the Great Lakes?

- What is known about the risk posed by alternate ship vectors such as sediments and hull-fouling?

**Commander Tim Cummins**

*United States Coast Guard update*

United States Coast Guard, Ninth Coast Guard District, 1240 East Ninth Street, Cleveland, Ohio 44199

*Abstract:* The presentation will provide:

- An update on the Coast Guard Ballast Water Discharge (BWD) Standard rulemaking project, specifically the need for a BWD standard, what the BWD standard will do, and the current status of the Draft Programmatic Environmental Impact Statement
- An overview of the Joint Ballast Water Management Exam Program - a successful bi-national program between the U.S. Coast Guard Ninth District, Transport Canada-Marine Safety, and the St. Lawrence Seaway Corporations

**James Schardt**

*Rapid response protocols for invasive species*

U.S. Environmental Protection Agency – Great Lakes National Program Office
77 W. Jackson Blvd. (G-17J), Chicago, Illinois 60604

*Abstract:* Preventing the introduction of aquatic invasive species is the first line of defense against invasions; however, even the best prevention efforts may not stop all introductions. Early detection and rapid response efforts increase the likelihood that invasions will be addressed successfully while populations are still localized and can be contained and eradicated. A variety of species- and location-specific rapid response contingency plans are under development or have been completed by natural resource, land management, and environmental protection agencies. These specific contingency plans provide the greatest level of preparation for a potential response effort. However, such specific planning is expensive and time consuming. Current agency organizational and fiscal resources do not allow for the development of rapid response plans for all possible events. As an interim step toward improving aquatic invasive species response capability, communication protocols are being explored to help ensure that agencies can efficiently coordinate and pool resources when a new invader is detected. Ongoing and future rapid response protocols were discussed.

## SESSION TWO: INDUSTRY PERSPECTIVE

**Ivan Lantz**

*Ballast water management and control*

Transport Canada, 300, Rue du Saint-Sacrement, Suite 326, Montreal, QC H2Y1X4

*Abstract:* Implementation of the Canadian Ballast Water Control and Management Regulation was necessarily complex due to trade and geography. This presentation was addressed to those who must comply with the regulations and provides an understanding of the "why" for ballast water management as well as the "how" to comply with the regulations. To facilitate and encourage compliance, Instructions to Masters were written and approved by Transport Canada. About 235 different salties entered the Seaway in 2007. Some made several voyages. All were compliant with the Regulations and the number of "retention letters" issued continues to decline as knowledge and understanding of the Regulations expands throughout the seafaring world.

**Jim Weakley**

*Ballast water management plans: an industry perspective*

Lake Carriers Association, 614 West Superior Ave. Cleveland, Ohio 44114

*Abstract:* Shipping on the Great Lakes falls into several industry segments. These differ by trade route, vessel size, cargo, volume of ballast, and flow rates of ballasting system. They include Domestic U.S. - Flag (Great Lakes); Domestic Canadian-Flag (Great Lakes and Saint Lawrence Seaway); and Salties (ocean-going vessels). The Lake Carriers Association has taken a proactive role in developing voluntary best management practices to address aquatic invasive species, for example: Ruffe 1997 and 1993, General Guidelines 2001, and VHS 2007. These best management practices have been created in conjunction with aquatic invasive species experts and natural resource agency staff from the Great Lakes states. This presentation provided an overview of the Great Lakes Shipping Industry and outlined their efforts to control their contribution to invasive species introductions and to reduce the risk they pose to spreading invasive species within the Great Lakes.

## SESSION THREE: POLICY UPDATE

**John Hornaman[1] and Pat Harkins[2]**

*Update on Pennsylvania House Bill 1736 re: Ballast Water Legislation for the State of Pennsylvania*

Pennsylvania House of Representatives[1], 2335 West 38th Street, Erie, PA 16508
Pennsylvania House of Representatives[2], 460 East 26th Street, Erie, PA 16504

*No abstract provided.*

**Stephanie Showalter**

*State ballast water programs: legislation, regulation, litigation, oh my!*

National Sea Grant Law Center, University of Mississippi, Kinard Hall, Wing E-Room 256, University, Mississippi 38677

*Abstract:* In recent years, as concerns have grown over the environmental impacts of ballast water discharges, state governments around the country have enacted laws, regulations, and policies to protect their waters from invasive species and pollution. Some state programs mirror the U.S. Coast Guard's ballast water program, while others have used their traditional powers to protect public health and safety and authority under the Clean Water Act to impose stricter limits on ballast water discharges. No two states are alike. This presentation provided an overview of the authority of states

to regulate ballast water and an update on existing state programs in the Great Lakes and across the country.

**Jen Nalbone**

*Current state of pending ballast water legislation-is it enough to stop the next zebra mussel?*

Great Lakes United, 1300 Elmwood Avenue, BSC-Cassety Hall, Buffalo, NY 14222

*Abstract:* The zebra mussel invasion led to significant changes in legislation and policies managing ballast water of ocean vessels in the United States and Canada. However, 20 years after the invasion, it's questionable whether existing regulations still would not have been effective in stopping this notorious invader from establishing. Recent crises associated with the VHS virus raise new concerns with ensuring ballast is not a vector for viruses and pathogens. And recent research has raised the profile of hulls as a possible source of invasive species. This presentation focused on the current status of pending ballast water legislation being considered in the United States Congress, whether it is robust enough to stop the next zebra mussel and how far it goes in addressing recent developments surrounding viruses and hulls. Additional issues discussed included finding a way through the controversial issues of state versus federal rights and Coast Guard versus Environmental Protection Agency leadership, as well as setting regulations for coastal and laker voyages between the United States and Canada. *Please note: no Power Point is available for this presentation.*

**John Jamian**

*Economic impacts of policy on ports and carriers*

Seaway Great Lakes Trade Association, 380 North Old Woodward Ave. #234, Birmingham, MI 48009

*Abstract:* Our problem is that, as a country, we need to have a national ballast water treatment standard that applies uniformly across our nation. This is the responsibility of the U.S. Coast Guard and they are aggressively working on establishing that standard. In sharing our frustration with this group, it makes no sense to try and regulate this issue on a state-by-state basis. If each of our eight Great Lakes states independently moves to regulate ballast water treatment, what we would ultimately have is a patchwork of inconsistent rules, regulations and fees that would only serve to drive business away from our region.

For our Great Lakes economy to prosper, we have to have a functional and efficient multi -modal transportation system. Quality of life begins with a job. State-by-state regulation would impact our shipping companies, thus impacting our region's manufacturers who depend on them. As they move

away to more costly modes of transportation because of potentially inconsistent laws, their profit margins will shrink as they lose economies of scale from utilizing large ships for their large cargoes. This in turn will force some of these companies to consider moving to other states with less regulation. Unfortunately, our Great Lakes ports will be affected and reducing our ports ability to trade will harm their opportunities to attract new businesses to our state or foster economic development. *Please note: no Power Point is available for this presentation.*

**LOWER GREAT LAKES BALLAST WATER WORKSHOP**
**BREAKOUT SESSIONS**

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**Policy Breakout Session**

Facilitated by Helen Domske
Comments:

- Standardization of terminology – there is a need to identify important terminology
- Need to compile a list of resources – companies, lobbyists, European shippers, etc.
- Great Lakes Commission has a Web based tracking tool for legislative bills see: www.glin.net/legislativepriorities subheading Aquatic Invasive Species
- We need legislation that ensures U.S.C.G. regulations are enforced and adequate (this is already the case says U.S.C.G.)
- Effective technology will stand up to regular work
- The general concern is to continually review effectiveness of technology
- Do we (GL states) want to be consistent and work together with partners? Minnesota will try to be transparent as they work thru the process in their state by sharing information with interested parties. They suggest other states do the same.
- We should work with state agencies to see what it means if the Clean Water Act is preempted. Do states want to retain authority? What impact will preemption have on states?
- States should review federal legislative provisions
- Synopsis of change in the U.S.C.G. regulations and actions if the impact of ballast water carries something acute like “black death” vs. lesser quantifiable impacts of invasive species? Center for Disease Control (CDC) handles things like the “black death” scenario…emergency measures are already in place for human health issues.
- When a standard comes out states can provide for public comment. It has been U.S.C.G. experience that feedback has been sparse. They received a total of four comments on the 2004 plan. The USCG requests and seeks input.

- This group could act as "word spreaders" when agencies request public comment.
- Minnesota has a listserv set up to discuss Minnesota legislation - all workshop participants are welcome to access this information.
- Besides ballast water, what are other modes of aquatic invasive species transmission thru transportation?
- Re: U.S.C.G. posting only receiving four comments…try to post the request for comments in a more obvious location. Second the idea that attendees at this workshop could help spread the word.
- You can sign up for notifications for public comment by signing up for an RSS at http://www.regulations.gov/search/index.jsp.
- Is there a consensus that cost should be borne by industry? Shore-side solution is more equitable cost-sharing.
- Secure ability to verify compliance – onboard treatment doesn't do that
- General public and environment have borne the cost so far = equitable cost sharing?
- U.S.C.G., Animal & Plant Health Inspection Service (A.P.H.I.S.), C.D.C…who regulates what?

Ideas presented to large group:

- Need standardized terminology
- Need to create a list of resources
- Policy should incorporate both onboard and shore-side technology and all treatment should be monitored and enforced
- Federal legislation…what is the impact on the states if Clean Water Act is preempted?
- State legislation should be standardized
- What about viruses? Can/do the C.D.C. and A.P.H.I.S. deal with ballast/shipping?
- Minnesota listserv…sharing this would be beneficial for those involved in policy and legislation
- To date cost has been covered by industry. Public has been paying for environmental damage.

**Research Breakout Session**

Facilitated by Jim Grazio

Ideas presented to large group:

- Should we use the International Maritime Organization ballast water standard or some lower standard?
- Should shore based treatment be used instead of on board treatment due to different standards?
- Ballast water exchange is close to International Maritime Organization standards for high risk taxa however, more research on ballast water exchange for Great Lakes is needed. Risks of ballast water exchange must be understood.
- Mid-ocean exchange is optimal and could enhance on board treatment.

- Ballast water exchange is done en route with reduced speed, ballast water is treated during uptake but standards are for discharge.
- Verification of treatments? Twenty-seven treatments were discussed. It is difficult to verify manufacturer's claims of treatment effectiveness (proprietary information).
- Is International Maritime Organization (IMO) standard stringent enough for fresh water? Testing protocols need to be able to be done at different temperatures. IMO approval for treatment technologies may not be sufficient without testing protocols.
- Research is needed for inspections and enforcement of treatment methods. Better tools are needed to test for certification. Tools are needed for ongoing spot checks of equipment as well.
- Research is needed to find indicators/methods of testing for determining compliance with discharge standards.

**Safety concerns are overarching…**

**Appendix A**

For Great Lakes Seaway Review: Jan-March Issue

*A Shared Frustration:*
*Still Looking for Meaningful Standards and Viable Ballast Water Treatment Systems*

An influential member of the Great Lakes/Seaway shipping industry was recently asked by a concerned citizen, "If you know the dangers of invasive species transported in ballast water, why don't you just put something on your boats to solve the problem."
He answered, with a sigh of frustration, "What ballast water treatment system would that be, what standards would it meet, and where would I get it? I certainly don't know, and I don't know anyone who does."
Good questions, all, and ones that beg the underlying issue: What will it take, and how much time will be required, to get a viable ballast water treatment system to market in the current regulatory environment, one that is effective, tested, certified, safe, cost effective and readily available to install on any given ship?
While much energy has been spent on ballast water policy at the state, federal and international levels, not nearly as much attention has been paid by legislators and regulators to the practical realities of bringing ballast treatment systems to market, and ultimately into operation. The challenges ahead are extremely complex, will demand a multi-disciplinary and multi-organizational approach and will have to satisfy a myriad of interests along the way.
Many ballast water treatment systems either already on the market or in some stage of development involve new technologies and scientific methodologies. Any proposed treatment system will need to be tested and certified by appropriate agencies. Once certified, the product must be designed to address the needs of specific vessels (whether retrofits or new-builds), and then go through the normal business cycle of development, design, financing, marketing, production, distribution, sales, installation and support. In addition, crews will need training on the use and maintenance of the systems.
On the regulatory side, agencies will need to prepare for a host of issues surrounding implementation of compliance procedures and reporting protocols.
And this is only the tip of the iceberg. Not only are there many additional steps (and additional players) in bringing a viable ballast water treatment system into effective day-to-day operation, but each of the elements mentioned above involve further subsets of specific activities, each with a time demand of its own.
One must start with the understanding that "market availability" is only one step in the process. It simply means that a system may be purchased in the open marketplace. It does not necessarily assure that a particular ballast water treatment system has the capability to:

- Meet specific state, federal, or international standards
- Be effective
- Be safe for the environment, crew, and vessel
- Be reasonably installed on a variety of ship designs

- Have support and maintenance systems available
- Be cost effective

In terms of legislative direction for development of ballast treatment systems, there is still largely a vacuum. To date, the only legislation regarding ballast water treatment has been at the state level, although there have been a progression of bills introduced in both the U.S. House and Senate proposing discharge standards.

A state-centric regulatory environment presents some obvious problems for industry; who could blame a vessel owner for being hesitant to purchase a state-approved ballast water treatment system with little or no assurance that the system would:

- Be permitted to operate within another state's regulatory jurisdiction.
- Be permitted to operate in that same state's future regulatory environment (given the flux of the regulatory, scientific, and market information).
- Be permitted to operate within a near-term federal or international regulatory environment.

As noted by researchers of the California State Lands Commission, Marine Facilities Division: "vessels using a state sanctioned ballast water treatment system would not be exempt from existing federal law." The vessel would still be required to conduct mid-ocean ballast water exchanges outside the 200-mile Exclusive Economic Zone, regardless of having any state sanctioned ballast water treatment system onboard.

California has been the leader in using a science based, methodical, and organized approach to reviewing and assessing the efficacy, availability, and environmental impacts of ballast water treatment systems. In a revealing example of the disconnect, however, between regulatory policy-making and the current state of ballast treatment science, after setting ballast discharge standards and conducting a thorough review of available technology and systems, California regulators discovered that no currently available treatment systems met their requirements. They were subsequently forced to recommend pushing back the state's implementation dates.

Out of 28 ballast water treatment systems reviewed in relation to the seven key criteria of the California standard, no ballast water treatment system could meet all standards. Even the best treatment systems were only able to meet four of seven criteria, with the majority attaining two or three. In addition, only 35% of the systems had any shipboard testing, some systems were tested on only a single voyage, and others were rated using data from single ballast tanks.

Two other states, Washington and Michigan, have also set technology-based ballast water treatment standards for their state waters but have not initiated processes or protocols for evaluating specific systems. All the states – those that have taken action and those contemplating action – have been consistent in voicing their preference for a federal policy.

As noted in a recent report for the California Legislature, "The conflict in ballast management regulation between federal and state governments will no doubt continue to cause confusion and temper the demand to install [expensive] treatment systems on vessels." The report further states: "In the U.S., the lack of a regulatory framework for the approval of ballast water treatment systems at the federal level is a major hindrance to the demand for [ballast water treatment] systems." It is also a hindrance to private investment by independent developers.

Conflict between state and federal ballast water management standards, metrics, approved technologies, and the concomitant monitoring and verification/testing protocols create additional

stumbling blocks for vessel owners. It also obfuscates the market for existing ballast water treatment systems, and discourages ongoing research and development by potential investors.

Until there is some degree of federal standardization, confused vessel owners will be reluctant to make any major investments in treatment systems. The current ballast water treatment marketplace has been compared to entering a race with neither a designated course nor a finish line. The maritime industry, along with its entrepreneurial partners, continues to express commitment to overcoming the technological challenges involved in eliminating ballast water as a vector for the spread of non-indigenous species worldwide, but it is not getting any easier.

There are some federal frameworks in place, and others taking shape.

The Non-indigenous Aquatic Nuisance Prevention and Control Act provides the U.S. Coast Guard the authority to regulate ballast water management systems, but as yet no specific standards have been set. The Act does say that any system must be at least as effective as ballast water exchange, but the efficacy of that practice can vary widely. The Coast Guard's long anticipated "Environmental Analysis" and "Proposed Ballast Water Standards" were still in development as of this writing and were expected to be published for public discussion in late February or May of 2008, with final standards available by mid-summer.

Also in rule-making mode is the U.S. Environmental Protection Agency. The EPA was directed by the Ninth Circuit Court to develop a permit process for vessel ballast operations (and all other vessel discharges) following a successful challenge to the exemption of ships from the Clean Water Act. The EPA's rules were to be completed in early 2008.

These activities are critical to the time-to-market discussion because until a federal discharge standard is set, there can be no approval of any ballast water treatment system at the national level.

On the international front, the International Maritime Organization (IMO) set specific discharge standards and proposed an implementation schedule in early 2004, but the U.S. has not signed the compact. This is in part because U.S. final standards may be as much as 100 times more stringent than proposed IMO standards (the California State ballast water discharge standards are an example). Currently only ten countries have ratified the IMO convention representing just 3.4% of world tonnage.

The control and management of ships' ballast water and sediments is clearly a complex issue and will likely take longer than anyone thinks to reach an outcome that is environmentally effective and economically viable. The fact that there is little or no coordination between state and federal agencies working on the issue (not to mention the international players) has caused confusion and slowed progress toward a solution.

In recommendations to the California State Legislature, the Marine Invasive Species Program staff made some general recommendations that they feel need to be implemented on all levels:

- Standardized testing guidelines and methodologies for system developers and independent laboratories
- Uniform system performance standards
- Standardized compliance testing methodologies
- Integration of water quality enforcement standards and requirements
- Support and substantial financial investments and incentives for research and development

The common theme here is "uniformity," in standards, procedures, protocols, methodologies, etc. And it is clear that that uniformity must emanate from the federal government. States, in absence of

federal action, will continue to act, but will not be able to single-handedly provide a meaningful solution to the problem.

The maritime industry continues to participate in the process but given the costs they will be expected to bear (ballast water treatment systems are projected to add between one and two percent of the cost of a new vessel, and potentially much more for retrofits to existing vessels) they will remain reluctant to invest in any one state's mandated, ballast water system.

Federal leadership and action is necessary to integrate and focus the work on ballast water treatment standards and technologies. It is essential that the maritime industry be consulted, and that appropriate resources be provided. It is only through a cooperative and integrated approach at the federal level that the alignment of information, effort, and investment necessary can be realized. Until then, there will only be one commonality among all participants in the ballast water treatment issue: frustration.

**Coauthors:**

**Dale Bergeron, Associate Professor, Maritime Educator, MN Sea Grant, University of Minnesota Duluth**

**Dave Knight, Transportation & Sustainable Development, Great Lakes Commission**

NOTE: In order to help the many participants and interested parties concerned with ballast water treatment system development understand the issues more fully, and appreciate the "likely time-lines," the authors have written a White Paper titled "Ballast Water Treatment Systems: The Time to Market," which should be available shortly after this story goes to print.

**Appendix B**

# Michigan's New Ballast Water Regime: Navigating the Treacherous Waters of States' Rights, Federal Preemption, and International Commerce

## A White Paper Prepared by

**Stephanie Showalter, Director**

**Terra Bowling, Research Counsel**

**October 2006**

**Updated March 2008**

*This white paper was commissioned by the Minnesota Sea Grant Extension Program to support the Program's ongoing maritime research, education, and outreach activities. The following information is intended as advisory research only and does not constitute legal representation of Minnesota Sea Grant or any of its constituents by the National Sea Grant Law Center. It represents our interpretation of the relevant laws.*

*Due to the unsettled nature of this issue and pending legislative initiatives, this white paper will be revised and expanded as necessary. Any questions, comments, or suggestions may be directed to Stephanie Showalter, Director of the National Sea Grant Law Center.*

As of January 1, 2007, all ocean-going vessels engaging in port operations in Michigan are required to obtain a permit from the Michigan Department of Environmental Quality (MDEQ). The MDEQ's permitting regime raises complex questions regarding the authority of states to regulate aspects of international shipping. The following legal analysis was commissioned by Minnesota Sea Grant to support research, education and outreach activities. The Law Center was specifically asked to examine the legality of Michigan's program under U.S. and international law and Michigan's capacity to enforce its laws.

## I. State Regulation of Ballast Water

### A. Michigan

Michigan Senate Bill 332, enacted into law June 2, 2005, requires all ocean-going vessels engaging in port operations in Michigan after January 1, 2007 to obtain a permit from the MDEQ. To receive a permit, the vessel must show that it will not discharge aquatic invasive species (AIS) into state waters. If a ship intends to discharge ballast water, it must demonstrate that it uses "environmentally sound technology and methods" to prevent the discharge of AIS into state waters.

The MDEQ responded to Senate Bill 332 by developing a Ballast Water Control General Permit under the Michigan Natural Resources and Environmental Protection Act. The permit is applicable to ocean-going vessels that (1) engage in port operations and do not discharge ballast water or (2) discharge ballast water treated with a method approved by the MDEQ. The general permit sets forth ballast water discharge limitations, reporting requirements, and other conditions. This permit is implemented through the state's National Pollutant Discharge Elimination System (NPDES) permitting program pursuant to its authority under the Clean Water Act.

In the Ballast Water Control General Permit issued on October 11, 2006, the MDEQ identified four treatment methods it views as adequate to prevent the discharge of AIS: (1) hypochlorite; (2) chlorine dioxide; (3) ultraviolet (UV) light radiation; and (4) deoxygenation. MDEQ has established effluent limitations and monitoring requirements for each treatment method. For example, if a vessel is using hypochlorite as a ballast water biocide, the ballast water must be dosed to a level of 10 parts per million (ppm) total residual chlorine and held in the ballast tanks for a minimum of 19 hours before discharge. If using chlorine dioxide, the water must be dosed to a level of 5 ppm and held a minimum of 24 hours. For UV treatment the water must receive a dose of greater than or equal to 200,000 microwatts-sec/$cm^2$. As for deoxygenation, the intake ballast water must be injected with sufficient gaseous nitrogen to reduce the dissolved oxygen in the ballast water to be discharged to 1 mg/l or below and water held in the tanks for a minimum of 48 hours.

The application fee for the certificate of coverage under the general permit, which is effective for five years, is $75.00 and there is an annual permit fee of $150.00. Ship owners/operators wishing to use a different treatment option may apply for an individual permit. Individual permit applicants must demonstrate that the proposed alternate treatment is environmentally sound and at least as effective in preventing the discharge of ANS. There is a $400.00 fee for individual permits.

The Michigan DEQ issued its first Ballast Water Control General Permits in February 2007.[1] NaviBulgar-Smolyan, a Bulgarian shipping company, received permits for ten of its vessels to conduct port operations without discharging ballast water.

The Michigan law survived its first judicial challenge when the U.S. District Court for the Eastern District of Michigan dismissed a lawsuit brought by the shipping industry on August 15, 2007.[2] The district court concluded that federal law does not preempt the Michigan law because states have authority to control pollution and address invasive species concerns. The shipping industry has appealed the ruling to the Sixth Circuit Court of Appeals.

**B. California**

In September 2006, California enacted the Coastal Ecosystems Protection Act, which requires the State Lands Commission (SLC) to adopt interim ballast water discharge standards for ships traveling in state waters by January 1, 2008. The performance standards, recommended by the SLC last January, include a requirement of zero detectable marine organisms in discharged ballast water by 2020. The Act also directs the SLC to consult with the Coast Guard to adopt regulations regarding experimental ballast water treatment systems. Ships using experimental ballast water treatment systems approved by the SLC on or before January 1, 2008, will be in compliance with the SLC standards for five years from the date of the application of interim performance standards.

The SLC issued regulations for interim performance discharge standards on October 15, 2007. The proposed standards, which would go into effect on January 1, 2009 for vessels less than 5,000 metric tons, would require vessels to treat ballast water so the discharge contains:

(a) No detectable living organisms that are greater than 50 micrometers in minimum dimension;

[1] MDEQ Press Release, Michigan's First Ballast Water Permits Issued, February 23, 2007 available at http://www.michigan.gov/deq/0,1607,7-135-3308_3323-162830--,00.html .
[2] *FedNav, Ltd. v. Chester*, Summary Judgment Opinion and Order, Case 2:07-cv-11116 (August 15, 2007).

(b) Less than 0.01 living organisms per milliliter that are less than 50 micrometers in minimum dimension and more than 10 micrometers in minimum dimension;

(c) For living organisms that are less than 10 micrometers in minimum dimension:

(1) less than 1,000 bacteria per 100 milliliter;

(2) less than 10,000 viruses per 100 milliliter;

(3) concentrations of microbes that are less than:

(A) 126 colony forming units per 100 milliliters of *Escherichia coli*;

(B) 33 colony forming units per 100 milliliters of *Intestinal enterococci*; and

(C) 1 colony forming unit per 100 milliliters or 1 colony forming unit per gram of wet weight of zoological samples of Toxicogenic *Vibrio cholerae* (serotypes 01 and 0139).[3]

In December 2007, following the assessment of the efficacy of existing ballast water treatment systems, the SLC recommended that the California legislature change the implementation date for new vessels with ballast water capacity less than 5,000 metric tons from 2009 to 2010. After evaluating twenty-eight ballast water treatment systems, the SLC determined that "no single technology has yet demonstrated the capability to meet all of California's performance standards."[4]

## C. Minnesota

Other Great Lakes states may follow Michigan's lead. Although no other state has passed similar legislation, bills are pending or have been introduced in Minnesota, Wisconsin, Indiana, and Ohio. Minnesota H.F. No. 2963[5], introduced on February 14, 2008, would require vessels designed, constructed, or adapted to carry ballast water in the state waters of Lake Superior to obtain a permit from the Minnesota Pollution Control Agency (MPCA) beginning January 1, 2011. To obtain a permit, vessel would be required to conduct ballast water treatment so that the ballast water discharged contains:

- Less than one living organisms per ten cubic meters that is 50 or more micrometers in minimum dimension;
- Less than one living organism per ten milliliters that is less than 50 micrometers in minimum dimension and more than ten micrometers in minimum dimension;
- Concentrations of indicator microbes that are less than:

[3] Article 4.7, Performance Standards for the Discharge of Ballast Water in California Waters, available at http://www.slc.ca.gov/Spec_Pub/MFD/Ballast_Water/Documents/PSREGFinal101707.pdf .

[4] N. Dobroski, L. Takata, C. Scianni, and M. Falkner, California State Lands Commission, *Assessment of the Efficacy, Availability, and Environmental Impacts of Ballast Water Treatment Systems for Use in California Waters*, (December 2007) available at http://www.slc.ca.gov/Spec_Pub/MFD/Ballast_Water/Documents/CSLCPerformanceStndRpt_FINAL_FINISHED_MF.pdf .

[5] Minnesota H.F. No. 2963, as introduced, available at https://www.revisor.leg.state.mn.us/bin/getbill.php?number=HF2963&version=0&session=ls85 .

    - One colony forming unit of toxicogenic Vibro cholera (serotypes O1 and O139) per 100 milliliters or less than one colony forming unit of that microbe per gram of wet weight of zoological samples; and
    - 126 colony forming units of Escherichia coli per 100 milliliters; and
    - 33 colony forming units of intestinal Enterococci per 100 milliliters; and
- Concentrations of such additional indicator microbes as may be specified in rules adopted by the Commissioner after consultation with other appropriate agencies, that are less than the amount specified in those rules.

The bill would require MPCA to approve ballast water treatment systems prior to use by vessels. If the MPCA determines that compliance with these treatment standards is not feasible for any class of vessels, the Commissioner of the MPCA may extend the date the compliance for a year, but no later than January 1, 2012.

In addition to the legislative efforts in Minnesota, the MPCA is independently developing a ballast water regulatory program under its Clean Water Act NPDES authority. The MPCA proposed program would require commercial vessels in state waters of Lake Superior to obtain a NPDES permit from the MPCA prior to discharging ballast water.[6] Like other discharge permits, the ballast water permits would require best management practices and performance standards. The MPCA held public hearings in early March and expects to have a permit available by September 30, 2008.

MPCA's efforts may have been spurred, in part, by a lawsuit. In August 2007, the Minnesota Center for Environmental Advocacy (MCEA) filed suit against the MPCA for not taking sufficient action (according to the plaintiffs) to prevent the introduction of Viral Hemorrhagic Septicemia (VHS) into Lake Superior and other Minnesota waters.[7] The complaint alleges that the PCA's failure to require NPDES permits for ballast water discharges violates the Minnesota Environmental Rights Act and is arbitrary and capricious agency action in violation of the Minnesota Administrative Procedure Act. Lawsuits like the one filed by the MCEA may become more common as the court-imposed deadline for a federal ballast water permitting programs, discussed below, nears without evidence of significant progress.

### D. Other Great Lakes States

In Wisconsin, Assembly Bill 86[8], introduced on February 22, 2007, would require the operator of an ocean-going vessel using a Wisconsin port to obtain a permit from the Department of Natural Resources. In order to obtain that permit, the operator would have had to demonstrate that the vessel

[6] MPCA News Release, *Public Invited to Comment on Ballast Water Permit Requirements*, March 10, 2008.
[7] The MCEA's complaint is available at http://www.mncenter.org/minnesota_center_for_envi/files/summons_and_complaint.pdf .
[8] Wisc. A.B. No. 86, available at http://nxt.legis.state.wi.us/nxt/gateway.dll?f=templates&fn=default.htm&vid=WI:Default&d=billhist&jd=top .

was either not capable of taking on ballast water or equipped with environmentally sound technology to prevent the introduction of aquatic nuisance species.

Indiana S.B. 286[9], introduced on January 10, 2008, would require oceangoing vessels engaging in port operations in Indiana to obtain a permit from the Indiana Department of Environmental Management beginning July 1, 2009. The bill would authorize the IDEM to issue a permit only if the applicant can demonstrate that the vessel will not discharge aquatic nuisance species or will use environmentally sound technology and methods to prevent the discharge, as determined by IDEM.

Ohio H.B. 298[10], introduced on October 23, 2007, would require a person operating an oceangoing vessel capable of discharging ballast water on the state waters of Lake Erie to obtain a permit from the Division of Wildlife. A permit could be issued only if the operator can demonstrate that the vessel will not discharge ballast water or will utilize environmentally sound technology and methods, as identified through a rulemaking. The bill would also require the Chief of the Division of Wildlife to facilitate the formation of a Great Lakes Aquatic Nuisance Species Coalition to ensure regional coordination of water pollution control laws.

New York also has a bill pending which addresses ballast water management. Assembly Bill 10099[11], introduced on February 29, 2008, would prohibit the discharge of ballast water into state waters after July 1, 2010, unless the vessel has conducted an open sea exchange or treated its ballast water to standards set by the Department of Environmental Protection. A.B. 10099 would require the state standards to be compatible with the federal standards where "practical and appropriate."

These new state efforts to regulate ballast water to prevent environmental harm are quite different from actions states have taken in the past. In 2000 and 2001, several states passed legislation to complement and enhance the Coast Guard's efforts at the time. Washington State requires vessels over 300 gross tons to conduct an open sea exchange at least 50 miles offshore, although beginning in 2007, ships may discharge treated ballast water in lieu of an exchange. Washington's interim ballast water standard is "is inactivation or removal of ninety-five percent of zooplankton organisms and ninety-nine percent of phytoplankton and bacteria organisms."[12] Maryland's and Hawaii's requirements are identical to the Coast Guard's. Oregon requires open sea or coastal exchanges, but exempts vessels that discharge ballast water treated to remove organisms in a manner approved by Coast Guard.

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[9] Indiana S.B. 286, available at http://www.in.gov/apps/lsa/session/billwatch/billinfo?year=2008&session=1&request=getBill&docno=286 .

[10] Ohio H.B. 298, available at http://www.legislature.state.oh.us/bills.cfm?ID=127_HB_298 .

[11] NY A.B. 10099, available at http://assembly.state.ny.us/leg/?bn=10099 .

[12] WASH. ADMIN. CODE § 220-77-09500A(1).

## II. Federal Regulation of Ballast Water

### A. Coast Guard

The Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 (NANPCA), as reauthorized and amended by the National Invasive Species Act of 1996 (NISA), authorized the Secretary of Transportation to issue regulations "to prevent the introduction and spread of aquatic nuisance species into the Great Lakes through the ballast water of vessels."[13] The Secretary of Transportation delegated responsibility to the Coast Guard.

Coast Guard regulations require vessels carrying ballast water and operating in the Great Lakes or on the Hudson River to employ one of the following ballast water management options: (1) carry out an exchange of ballast water in waters more than 200 miles from shore (beyond the U.S. Exclusive Economic Zone) and more than 2,000 meters deep; (2) retain ballast water on board; or (3) use an alternative environmentally sound method of ballast water management that has been approved by the Coast Guard.[14] The Coast Guard has yet to approve any alternative ballast water methods.

The primary difference between Michigan's laws and the federal laws is that the Coast Guard program does not require ships that claim No Ballast Onboard (NOBOB) to comply with their ballast discharge programs. NOBOBs are vessels which have discharged ballast water in order to carry cargo and, as a result, have only unpumpable residual water and sediment remaining in the tanks. The Coast Guard has taken preliminary steps to regulate these vessels, however. NOBOBs must submit ballast water reporting forms and the Coast Guard recently established voluntary best management practices for NOBOB vessels, which include mid-ocean water exchange and saltwater flushing of empty tanks.[15] However, although the Coast Guard may monitor the NOBOB ships, the requirements are not mandatory and vessels that are loaded with cargo may avoid the ballast water requirements. The MDEQ's draft permit will address this gap and requires *all* ocean-going ships to obtain a permit.

The Michigan law does not affect the application of existing Coast Guard regulations and compliance with state law does not ensure compliance with federal law. Vessel owners and operators were warned in the District 9 Local Notice to Mariners, Weekly Edition 09/07 that Coast Guard enforcement of vessels entering the Great Lakes in 2007 will not change.[16] Because the Coast Guard has yet to

[13] 16 U.S.C. § 4711 (b)(1).
[14] 33 C.F.R. § 151.1510.
[15] Ballast Water Management for Vessels Entering the Great Lakes That Declare No Ballast Onboard; Environmental Assessment and Finding of No Significant Impact, 71 FR 4605 (Jan. 27, 2006).
[16] available at http://www.navcen.uscg.gov/lnm/d9/lnm0909.pdf .

identify alternative ballast water management methods, oceangoing vessels have only two options for complying with federal law – conduct an open ocean exchange or retain the ballast water onboard. If the vessel does not conduct an exchange and proceeds to discharge ballast water pursuant to a Michigan permit, that vessel will be considered in violation of federal law.

While it is not impossible to comply with both the federal and the Michigan laws, it might be quite a hassle for some vessels. Some vessels that need to discharge water in Michigan ports to take on cargo, may have to conduct an exchange to comply with federal law and then treat the exchanged ballast water before discharging in Michigan. For NOBOB's, compliance with both regimes will be quite simple. All those vessels need to do is retain the ballast water onboard.

**B. EPA**

The Clean Water Act (CWA) prohibits the discharge of pollutants from a point source into the navigable waters of the U.S. without a National Pollutant Discharge Elimination System (NPDES) permit. Although vessels are considered point sources, the EPA has by regulation exempted from the NPDES permit requirements discharges "incidental to the normal operation of a vessel."[17] The discharge of ballast water falls within this exemption.

In January 1999, a number of environmental groups petitioned the EPA to repeal § 122.3(a) claiming it conflicts with the CWA, which does not exempt incidental discharges from vessels. The EPA denied the petition in September 2003, citing policy considerations and Congress's preference that the Coast Guard regulate routine, operational discharges, as evidenced by NANPCA and the Act to Prevent Pollution from Ships.[18]

In its petition, EPA noted that states are not preempted by the CWA from acting to regulate discharges incidental to the normal operation of a vessel. States may operate a program with a greater scope of coverage than that required under the NPDES state program regulations.[19] States are not precluded by the CWA from adopting or enforcing "any standard or limitation respecting discharges of pollutants or "any requirement respecting control or abatement of pollution" as long as those standards are no less stringent than the federal standards.[20] "A NPDES-authorized State that identifies the discharge of invasive species in ballast water as a significant concern in its waters may act to address those discharges through its NPDES program."[21]

[17] 40 C.F.R. § 122.3(a).
[18] EPA, Decision on Petition for Rulemaking to Repeal 40 C.F.R. 122.3(a) (2003).
[19] 40 C.F.R. § 123.1(i)(2).
[20] 33 U.S.C. § 1370.
[21] EPA, Decision on Petition for Rulemaking at 9.

However, three pages later EPA makes the following statement:

> EPA reasonably interprets the CWA to authorize the exclusion of discharges incidental to the normal operation of a vessel because otherwise every vessel engaged in interstate commerce would be required to apply for and obtain a different, and potentially conflicting, NPDES permit for each of the various State waters through which they travel. There is no provision under the CWA that would enable EPA to issue any type of general permit to establish consistent, nationwide standards for vessels in State waters. Under Section 303 of the CWA, States have adopted varying water quality standards. 33 U.S.C. § 1313. Given the structure of the CWA permitting and standards provisions, and the nature of incidental discharges from vessels, the EPA's interpretation of the CWA not to require an NPDES permit for every discharge from a vessel that simply operates normally as a means of transportation in the navigable waters avoids the burden of different, and potentially conflicting, requirements from every State through which such a vessel passes.[22]

Read together, these passages suggest that EPA believes that ballast water discharges are better regulated by the Coast Guard, but recognizes that Congress has preserved state authority under the Clean Water Act.

A federal district court in California recently ruled that the EPA must regulate ballast water under the Clean Water Act (CWA). In *Northwest Environmental Advocates v. EPA*, 2005 U.S. Dist. LEXIS 5373 (N.D. Cal. March 30, 2005), the U.S. District Court for the Northern District of California ordered the EPA to repeal § 122.3, finding that ballast water discharges constitute a "discharge" of "pollutants" (because it can contain biological materials) into the navigable waters of the U.S. from a "point source." "Given the clear language of the CWA, the statute requires that discharges of pollutants from non-military vessels into the nation's lakes, rivers, and harbors occur only under the regulation of a NPDES permit." The court found that although NANPCA/NISA directed the Coast Guard, not the EPA, to oversee the development of regulatory requirements for ballast water, NISA was not intended to limit the CWA with respect to ballast water discharges. 16 U.S.C. § 4711(b)(2)(C) clearly states that "the regulations issued under this subsection shall . . . not affect or supersede any requirements or prohibitions pertaining to the discharge of ballast water into waters of the United States under the Federal Water Pollution Control Act." The court also pointed out that NISA only addresses AIS and not the other types of ballast water pollutants, such as sediment, rust, etc. and is therefore not comprehensive.

[22] *Id.* at 12.

The EPA also raised the issue of preemption by the Act to Prevent Pollution from Ships (APPS), which implements U.S. obligations under the International Convention for the Prevention of Pollution from Ships (MARPOL). The court rejected this argument as well, finding that although Congress delegated responsibility for implementing MARPOL to the Coast Guard, the APPS contains a savings clause that states "remedies and requirements of this chapter supplement and neither amend nor repeal any other provisions of law, except as expressly provided in this chapter."[23] Therefore EPA's authority under the CWA to regulate pollutants from vessels was preserved. The Court ordered the EPA to repeal 40 C.F.R. § 122.3(a).

On September 18, 2006 Judge Illston granted Northwest Environmental Advocates' motion for permanent injunctive relief and remanded the case to the EPA.[24] After refusing to limit the scope of her order to ballast water discharges only, Judge Illston set a two-year deadline for EPA action. The challenged regulation, 40 C.F.R. § 122.3(a), will be set aside as of September 30, 2008. Judge Illston dismissed the shipping industry's concerns regarding the impact of the ruling on global shipping as "dramatically overstated," finding they were based on the assumption that ballast water discharges would be absolutely and immediately prohibited. Judge Illston recognized that a two-year time frame is "ambitious," but concluded that it would not impose an undue burden on the EPA because the agency is intimately familiar with the ballast water problem and the Coast Guard already requires several measures the EPA could adopt. EPA filed an appeal to the Ninth Circuit Court of Appeals on November 16, 2006. Oral arguments are scheduled for August 14, 2007.

Despite its appeal of the district court decision, EPA issued a notice of intent on June 21, 2007 to develop a NPDES permit program for the discharge of pollutants incidental to the normal operation of vessels. Reflecting the scope of Judge Illston's ruling, the new program would not be limited only to ballast water as normal operational discharges also include bilge water, deck runoff, and gray water. The notice of intent reaffirmed state authority under the CWA, stating that "nothing in the CWA prevents states from independently regulating ballast water discharges under State law, should they chose to do so."[25] The comment period closed on August 6, 2007.

EPA's announcement stirred even more controversy than Judge Illston's opinion, due in part to the agency's announcement in a press release that approximately 143,000 commercial vessels, and potentially more than 13 million state-registered recreational boats could be affected by this rulemaking. H.R. 2550, currently pending in the U.S. House of Representatives, would exempt

[23] 33 U.S.C. § 1907(f).
[24] *Northwest Environmental Advocates v. EPA*, No. C 03-05760, Order Granting Plaintiffs' Motion for Permanent Injunctive Relief (N.D. Cal. Sept. 18, 2006).
[25] 72 Federal Register 34,241, 34,343 (June 21, 2007).

recreational boats from certain CWA requirements in an attempt to lessen the impact of any court-ordered regulations on the recreational boating community.

## III. State Authority to Regulate International Shipping

The Tenth Amendment to the U.S. Constitution states that "the powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved to the States respectively, or to the people." State governments have broad powers to legislate to protect the health, safety, and welfare of their citizens, commonly referred to as the police power. The state powers reserved under the Tenth Amendment, however, often overlap with the federal commerce and foreign relations clause powers. Federal law can preempt a validly enacted state law if it conflicts with federal law or interferes with interstate commerce. State regulation of commercial shipping operations is constrained by three constitutional principles: the Commerce Clause, the Supremacy Clause, and the Foreign Affairs Clause.

### A. Federal Preemption

The Supremacy Clause of Article VI of the U.S. Constitution provides that the Constitution, including laws and treaties made pursuant to it, are the supreme law of the land. It is within the police power of states to regulate areas affecting the health and safety of its citizens; however, pursuant to the Supremacy Clause, state laws that conflict with federal laws are generally preempted by federal law. Even if state laws do not actually conflict with federal law, states may be barred from regulating areas in which the federal government has regulated.

States have some authority to regulate international shipping. In 1960, the U.S. Supreme Court in *Huron Portland Cement Co. v. City of Detroit* (362 U.S. 440 (1960)) upheld a local smoke abatement ordinance which applied to ships. A Michigan vessel owner had challenged the constitutionality of Detroit's Smoke Abatement Code. Plaintiff's vessels had been inspected, approved, and licensed by the Coast Guard to operate in interstate commerce and were equipped with hand-fired Scotch marine boilers. The boilers, however, emitted smoke which exceeded the maximum standards of the Detroit code.

The Supreme Court found that the Detroit ordinance was enacted to promote the health and welfare of the city's inhabitants and therefore fell within the state's police power. "In the exercise of that power, the states and their instrumentalities may act, in many areas of interstate commerce and maritime activities, concurrently with the federal government." The Court noted that "evenhanded local regulation to effectuate a legitimate local public interest is valid unless preempted by federal action." "The mere possession of a federal license, however, does not immunize a ship from the

operation of the normal incidents of local police power, not constituting a direct regulation of commerce."

The plaintiff argued that the Detroit ordinance was preempted by the federal inspection program because it required vessels to replace equipment approved by the Coast Guard. The Court held that the ordinance was not preempted by the federal inspection program. While comprehensive, the court found that the inspection program was designed primarily to "insure the seagoing safety of vessels subject to inspection." In contrast, the court found that the primary purpose of the ordinance was the "elimination of air pollution" and "enhance[ing] the cleanliness of the local community." The Court therefore concluded that there was "no overlap between the scope of the federal ship inspection laws and that of the municipal ordinance here involved."

Two justices dissented, arguing that the requirements of the Detroit ordinance were squarely in conflict with the federal licensing statute. Even though the boiler had been approved by the Coast Guard, Detroit would not issue a certificate of operation. The dissenters would have held that the ordinance was preempted because "equipment approved and licensed by the Federal Government for use on navigable waters cannot pass muster under local law."

The Supreme Court has held that state laws attempting to regulate the design, size, and movement of oil tankers are preempted by federal law. In *Ray v. Atlantic Richfield*, 435 US 151 (1978), the Court invalidated Washington state laws regulating tankers in Puget Sound. The oil tankers were already regulated under the Port and Waterways Safety Act of 1972 (PWSA). The court found that the PWSA allowed states to regulate if the regulations concerned peculiarities of local waters that call for precautionary measures, and the Coast Guard had not adopted regulations on the subject or had determined that regulation is unnecessary or inappropriate. The Court found that the enforcement of some of the Washington state laws would frustrate the congressional intent to establish a uniform federal regime controlling the design of oil tankers. For example, one of the Washington laws required oil tankers operating in the Puget Sound to take on a state licensed pilot. This was in direct conflict with two federal laws that gave the federal government exclusive authority to regulate pilots on registered vessels and that precluded a state from imposing its own requirements.

However, the Court did allow certain provisions of Washington's law to stand, despite the federal regulation, finding that vessels must conform to "reasonable, nondiscriminatory conservation and environmental protection measures" imposed by a state. For example, one of the Washington rules required the tankers to be escorted by a tug when in Puget Sound. The Court upheld this provision, holding that a tug-escort is not a design requirement, but rather an "operating rule arising from the peculiarities of local waters that call for special precautionary measures."

State regulation of ballast water discharges has also passed muster, at least in the Ninth Circuit. In 1984, in *Chevron U.S.A. v. Hammond*, 726 F.2d 483 (9th Cir. 1984), the Ninth Circuit upheld an Alaska statute that prohibited oil tankers from discharging ballast water into state waters if the ballast had been stored in oil cargo tanks. Alaska was attempting to regulate ballast water discharges under its CWA authority and through its NPDES permit system.

Recognizing that the Supreme Court in *Ray* found that Congress had entirely occupied the field of tanker design, the Ninth Circuit construed the holding narrowly. The court stated that "there are significant differences between the subject matter regulated in *Ray* – vessel design features – and that regulated here – ocean pollutant discharges." The court found that the PWSA is only a small part of the overall federal marine environmental protection scheme, of which the CWA was at the heart. Under the CWA, "states maintain primary responsibility for abating pollution in their jurisdictions; they have authority to establish and administer their own permit systems and to set standards stricter than the federal ones."

The court found that the CWA demonstrates a "congressional intent that there be joint federal/state regulation of ocean waters within three miles of shore" which undermines the argument that Congress intended to occupy the field of regulating tanker pollution in a state's territorial waters." The court based its holding on the logic that "while design standards need to be uniform nationwide so that vessels do not confront conflicting requirements in different ports and so that the Coast Guard can promote international consensus on design standards, there is no corresponding dominant national interest in uniformity in the area of coastal environmental regulation."

The Ninth Circuit concluded that the potential effect of Alaska's statute on international trade was distinguishable from the effect of the tanker design provisions in *Ray*. "Once a ship is constructed, it cannot meet new or different design requirements in various ports. A ship's discharge of pollutants can, however, be varied according to environmental standards and conditions in different jurisdictions. Hypothetically, state regulation regarding the discharge of pollutants could possibly interfere with the establishment of nationally uniform design requirements. But, for the most part local environmental regulations can co-exist – as they do here – with federal regulations without impinging on the exclusively federal concerns of vessel design and traffic safety." The court highlighted the fact that no party asserted that it was impossible to comply with both the Coast Guard and the Alaska statute. Unlike in *Ray*, Alaska neither set nor sought to impose design features. "Alaska has left all designing of vessels and equipment to the Coast Guard and has only prohibited the discharge of polluted ballast."

In a footnote, the court gave the regulation of Marine Sanitation Devices (MSDs) as an example of the co-existence of state and federal regulation. Congress authorized the EPA through the CWA, after consultation with Coast Guard to promulgate federal standards of performance for MSDs.[26] The Coast Guard was directed to promulgate regulations governing the design, construction, installation, and operation of MSDs. After the effective date of the standards and regulations, no state may adopt or enforce a statute or regulation with respect to design, manufacture, installation or use. However, if a state determines that the protection and enhancement of the quality of some or all of the waters within a state require greater environmental protection, a State may completely prohibit discharge from all vessels of any sewage, whether treated or not. The prohibition, however, may not come into effect until the EPA determines there are adequate facilities for safe and sanitary removal of sewage are reasonable and available.

In a more recent Supreme Court case, *U.S. v. Locke*, 529 U.S. 89 (2000), the Court held that where state and federal laws have the same purpose, federal laws preempt state laws. The State of Washington had again adopted regulations for tanker design, equipment, reporting, and operations because of its concerns over oil spills. Tankers are regulated by a number of federal statutes, including the Tank Vessel Act and the PWSA. The PWSA consists of two titles. Title I concerns vessel traffic "in any port or place under the jurisdiction of the United States."[27] Title II requires the Coast Guard to issue regulations addressing the "design, construction, alteration, repair, maintenance, equipping, personnel qualifications, and manning" of tanker vessels.[28]

The Court began its analysis by stating that "state laws now in question bear upon national and international maritime commerce, and in this area there is no beginning assumption that concurrent regulation by the State is a valid exercise of police power. Rather we must ask whether the local laws in question are consistent with the federal statutory structure, which has as one of its objectives a uniformity of regulation for maritime commerce." The Court noted that states may regulate in areas covered by federal law only if the federal law contains a saving clause authorizing state regulation. In addition, states may regulate areas of unique local concern, unless the state law conflicts with federal law, and can regulate ports and waterways so long as regulation based on "the peculiarities of local waters that call for special precautionary measures." "Peculiarities of local waters" include such things as water depth and narrowness.

In *Locke*, the Court overturned the Washington state laws regulating tanker design, equipment, reporting, and operating requirements for oil tankers in state waters. The state's English language

[26] 33 U.S.C. § 1322.
[27] 33 U.S.C. § 1223(a)(1).
[28] 46 U.S.C. § 3703(a).

proficiency requirements, navigation watch requirements, and casualty reporting requirements were also preempted. The laws also included sanctions for non-compliance, which included restriction of the vessel's operation in state waters. The Court found that the laws were already covered by the Tank Vessel Act of 1936, the PWSA, and the Oil Pollution Act of 1990. The Court found that the state laws would frustrate Congress' intent to establish a uniform federal regime for the design of oil tankers.

The court stated that rules requiring tug escorts and local pilots are distinguishable from design requirements because they do not require a vessel to do anything different outside a state's jurisdiction. "A regulation within the State's residual powers will often be of limited extraterritorial effect, not requiring the tanker to modify its primary conduct outside the specific body of water purported to justify the local rule." The court summarized the preemption test as follows: "local rules not preempted under Title II of the PWSA pose a minimal risk of innocent noncompliance, do not affect vessel operations outside the jurisdiction, do not require adjustment of systemic aspects of the vessel, and do not impose a substantial burden on the vessel's operation within the local jurisdiction itself."

The above cases, although relevant to state regulation of international shipping and illustrative, are not a perfect factual match for the current situation. First, Michigan's law applies to all vessels, not just oil tankers, which removes it from the PWSA regime. In addition, Michigan is attempting to regulate ballast water discharges under its federally granted CWA authority, a statutory regime completely separate from the NISA regulation of ballast water. The preemption analysis is complicated by the fact that both NISA and the CWA contain provisions for joint federal/state regulation of the statutes' respective subjects, invasive species and water quality. A preemption finding under NISA is unlikely. First, a court is unlikely to find that NISA contains evidence of Congress' intent to occupy the entire field of ballast water regulation because it contains two separate savings clauses - one for state regulation of invasive species and one for regulation of discharges under the CWA.

As part of the field preemption analysis, however, a court should also consider whether the federal interest in regulating ships is so dominant that Michigan is precluded from regulation. Courts have traditionally held that creating uniformity in shipping regulations is an important federal interest. If a court determines that the Michigan laws affect the uniformity of the federal regulations, they may be subject to field preemption. If multiple states follow Michigan's lead and adopting permitting programs for ballast water, a strong argument could be made that the federal interest should dominate because of the need for national uniformity. The success of that argument, however, depends on convincing a court that very different state programs are imminent. If states in the region are committed to standardizing permitting conditions, such as treatment options, the need for federal dominance is lessened.

When it issued the final regulations to require Ballast Water Management practices for vessels entering the Great Lakes, the Coast Guard made the following preemption finding:

> "The authority to issue regulations requiring ballast water management practices for vessels entering the Great Lakes has been committed to the Coast Guard by the [NANPCA]. Standardizing the minimum requirements for vessels entering the Great Lakes after operating in waters beyond the EEZ is necessary to effectively help prevent additional introductions of nonindigenous species. Therefore, the Coast Guard intends this rule to preempt State and local regulations that are inconsistent with the requirements of this rule. These regulations were developed in consultation with the Task Force which is charged with coordinating action among, and providing technical assistance to, regional, State, and local entities regarding environmentally sound approaches toward prevention and control of aquatic nuisance species. Additionally, in accordance with the Act, the Coast Guard has consulted with the Government of Canada throughout the development of the guidelines and regulations in order to develop an effective international program."[29]

In 2004, when it issued mandatory ballast water requirements for U.S. waters, the Coast Guard did an about-face with respect to federal preemption of state regulation of ballast water. This time, the Coast Guard found that: "Congress clearly intended for a Federal-State cooperative regime and not for Federal preemption of State requirements. Thus, each state is authorized under NISA to develop its own regulations, including its own research programs, if it believes that Federal regulations or programs are not stringent enough."[30] The Coast Guard provides no explanation for this change of position.

The savings clause for state regulation of invasive species was present in the NANPCA. It was not added by NISA, so there was no change in the law between 1993 and 2004. 16 U.S.C. § 4725 states that "nothing in this title shall affect the authority of any State or political subdivision thereof to adopt or enforce control measures for aquatic nuisance species, or diminish or affect the jurisdiction of any State over species of fish and wildlife." The clauses preserving authorities under the CWA were also present in NANPCA. NISA states that Coast Guard regulations shall "not affect or supercede any requirements or prohibitions pertaining to the discharge of ballast water into waters of the United States under the [CWA]."[31]

## B. The Commerce Clause

[29] Ballast Water Management for Vessels Entering the Great Lakes, 58 FR 18330, 18334 (April 8, 1993).
[30] Mandatory Ballast Water Management Program for U.S. Waters, 69 FR 44952, 44959 (July 28, 2004).
[31] 16 U.S.C. § 4711(b)(2)(C).

Even if the Michigan laws are not preempted by federal law, state laws must still comply with the requirements of the commerce clause of the U.S. Constitution, which provides that Congress has the authority "[t]o regulate Commerce with foreign Nations, and among the several States, and with the Indian Tribes."[32] The negative implication of the commerce clause, sometimes called the "dormant commerce clause," is that the power of state and local governments to regulate interstate commerce is limited. State laws that affect interstate commerce will be invalid if they discriminate against non-residents or unduly burden interstate commerce. In determining whether a state's law unduly burdens interstate commerce, a court will balance the burden that the law places on interstate commerce with the benefits that the law provides the state.

The Michigan laws are non-discriminatory, since the laws apply equally to all ships in the Great Lakes. The Michigan laws do promote the state's legitimate interest of preventing the introduction of invasive species into its waters. Therefore, courts will uphold the regulation "unless the burden imposed on such commerce is clearly excessive in relation to the putative local benefits."[33]

For most vessels, like NOBOBs, only a minor financial burden will be imposed. Most vessels utilizing Michigan ports do not discharge ballast water because they are unloading, not loading, cargo. All these vessels need to do is pay a $75 application fee and a $150 annual fee and submit some additional paperwork. Even if a vessel wishes to propose an alternative treatment method, the fee is only $400.00 which seems reasonable giving the additional administrative effort involved. Increasing the cost of doing business by a couple of hundred dollars will not persuade a court that Michigan is unduly burdening commerce, especially in light of the extensive harm invasive species have wrought on the Great Lakes.

For a small number of vessels, an argument could be made that the application of the Michigan law is unduly burdensome to interstate shipping. For instance, if compliance with the general permit requires expensive retrofitting of the vessels and extensive crew training, interstate commerce may be unduly burden. The costs would have to be so prohibitive, however, that shipping companies would be forced to avoid Michigan ports. The shipping industry, in essence, must prove that it can no longer afford to do business in Michigan and that its avoidance of Michigan ports will have a disruptive impact on commercial transactions.

Concerns have also been raised regarding the potential impact of multiple state ballast water regimes in the Great Lakes. While hypothetical arguments could certainly be made that shipping companies

[32] U.S. Const., Art. I, sec. 8, cl. 3.
[33] *Huron Cement Co. v. Detroit*, 362 U.S. 440, 443 (1960).

would be extremely burdened if all of the Great Lakes states adopted permitting programs with different treatment standards, eight very different state ballast water programs are unlikely. The Great Lakes states have a long history of working together and the Michigan Legislature directed the MDEQ to facilitate the formation of a coalition to implement ANS-related water pollution laws on a basin-wide basis.

### C. Preemption by International Laws

Under the Constitution, the power to regulate international commerce lies with Congress. The United States has the right to allow ships to enter and leave its ports voluntarily and to impose terms and conditions on ships passing through its ports. The United States may enter treaties or conventions with other nations regarding maritime commerce. After Congress ratifies such treaties, they become the "supreme law of the land" under the Supremacy Clause. State laws that conflict with such conventions or treaties would probably be analyzed under the same principles used in the federal preemption cases.

Although the United States is not currently party to a convention or treaty regarding ballast water discharge, it may soon be. In 2004, the International Maritime Organization (IMO), an agency of the United Nations, adopted the International Convention for the Control and Management of Ships' Ballast Water and Sediments. The United States has not yet signed the convention, and the convention will not go into effect until 12 months after 30 countries have signed it. The IMO treaty mandates a ballast water discharge standard and would replace voluntary guidelines that recommend vessels exchange ballast water in mid-ocean. Ships must have and implement ballast water management plans. Vessels must maintain ballast water record books to record when water is taken on, treated, and discharged.

The Convention states that ballast water exchange should be conducted so that there is a 95 percent volumetric exchange, and occur at least 200 miles from shore in water 200 meters deep. If the vessel uses a "pumping through" method, pumping through three times the volume of tank will be considered as meeting the standard. If a ship can't comply, it must conduct exchange as far away as possible and no less than 50 miles from shore and 200 meters deep.

Starting in 2009, ships will have to treat their ballast water so that discharges contain fewer than 10 viable organisms greater than or equal to 50 micrometers in size per cubic meter and less than 10 viable organisms per milliliter less than 50 micrometers in minimum dimension and greater than or equal to 10 micrometers. If the United States signs the IMO treaty, it would become the "supreme law of the land" and the Michigan laws may be subject to preemption. The convention also contains specified maximum concentrations for indicator microbes such as toxicogenic *Vibrio cholerae*.

The Coast Guard's ballast water exchange requirements are already more stringent than the international standards (2,000 meters depth vs. 200), but there are no U.S. performance measures yet except for a requirement that at the conclusion of an exchange, tanks must have minimum salinity of 30 parts per thousand. The Coast Guard has been working on ballast water standards, although little progress has been made since the agency issued an advanced notice of proposed rulemaking in 2001.
Congress has indicated a preference for international cooperation in NISA. §4711((j) states that "The Secretary, in cooperation with the International Maritime Organization of the United Nations and the Commission on Environmental Cooperation established pursuant to the North American Free Trade Agreement, is encouraged to enter into negotiations with the governments of foreign countries to develop and implement an effective international program for preventing the unintentional introduction and spread of nonindigenous species." Section 4711(f)(3) states that "the Secretary shall revise regulations promulgated under this subsection to the extent required to make such regulations consistent with the treatment of a particular matter in any international agreement, agreed to by the United States, governing management of the transfer of nonindigenous aquatic species by vessel."

In *Locke*, the Supreme Court did not reach an analysis of the effect of international treaties on state law, because the state laws were preempted under federal law. The Court noted that the existence of international treaties indicates that Congress intended to have national uniformity. Justice Kennedy wrote, "The authority of Congress to regulate interstate navigation, without embarrassment from intervention of the separate States and resulting difficulties with foreign nations, was cited in the Federalist Papers as one of the reasons for adopting the constitution." Following this line of reasoning, it would seem to indicate that where Congress ratifies a treaty, states will not be allowed to regulate in ways that would affect international commerce.

## IV. Enforcement of State Laws

Under the CWA, the EPA may authorize states to assume control of wastewater discharge under its NPDES program. Michigan has assumed responsibility for the permitting program pursuant to 33 USC §1342(b). Once a state assumes authority, it promulgates its own statutes and regulations, which must meet minimum federal standards. The state then becomes the primary authority for issuing NPDES permits, not the EPA. As a precondition to assuming responsibility for the NPDES program, the state program must demonstrate that it has adequate authority to enforce permit requirements. Although the state is the primary permit enforcer, the federal government retains separate authority under the CWA to pursue civil, criminal, and administrative enforcement actions.[34] Therefore, the Michigan

[34] 33 U.C.S. § 1342(i).

ballast water laws may be enforced by Michigan or the EPA. If a ship discharges ballast water without such a permit, the person responsible for the vessel will be subject to possible civil fines and imprisonment by the state. The Michigan DEQ's compliance staff will have the authority to board vessels discharging ballast water in ports.

## V. Conclusion

Several bills have been introduced into Congress that would regulate ballast water discharge. The bills currently before Congress include: The Ballast Water Management Act of 2007 (H.R. 2423, S. 1578) and Prevention of Aquatic Invasive Species Act of 2007 (H.R. 889). The passage of these bills could affect Michigan and other states' ability to regulate ballast water discharge. For instance, Congress could add specific provisions to new legislation which would preempt state laws that are inconsistent or conflict with its provisions regarding ballast water exchange or treatment requirements.

The problem of ballast water discharges has not been ignored by the federal agencies responsible for managing vessel pollution. Although progress has been slow, there has been progress. Progress is hindered, however, by litigation. Each lawsuit filed against the EPA and the Coast Guard distracts the agencies and ties up valuable resources. Without further action by Congress clearly indicating an intent to preempt state regulation of ballast water through the Clean Water Act, Michigan's laws are likely to be upheld on the basis of preemption. If the implementation of Michigan's program proves overly burdensome to shipping companies, the laws could be struck down under the Commerce Clause. U.S. ratification of the IMO Ballast Water Treaty would also change the analysis as implementing legislation would evidence the need for national uniformity to meet international standards.

**Appendix C**

# LAKE CARRIERS ASSOCIATION'S SUPPLEMENTAL VOLUNTARY BALLAST WATER MANAGEMENT PLAN (BMP) FOR THE CONTROL OF VIRAL HEMORRHAGIC SEPTICEMIA (VHS) VIRUS 2008 EDITION

(Issued April 2008)

Operating exclusively within the **Enclosed Aquatic Ecosystem of the Great Lakes**, Lake Carriers' Association (LCA) members recognize their role in assisting the governments and concerned stakeholders of the United States and Canada in controlling the spread of invasive species and pathogens of aquatic animals. This supplemental BMP, developed following the VHS epizootic in the Great Lakes, is in addition to the general VHS BMP issued in March of 2007. Recognizing the need for vessels to use ballast water for stability and safe operations, LCA recommends its members take every reasonable measure to decrease the potential of moving fish from **KNOWN** affected areas (Lake Michigan, Lake Huron, Lake St. Clair, Lake Erie, Lake Ontario, the St. Lawrence River, and the Canadian Maritime Provinces) to areas where the pathogen has **NOT BEEN CONFIRMED** (Lake Superior). This supplemental BMP is being issued as a proactive effort to reduce the potential risk associated with one of a variety of possible vectors of this disease. We will continue to modify procedures as new science-based information warrants.

**Additional Best Management Practice recommendations to be implemented during an active fish kill.**

Notification to LCA members to initiate the following voluntary actions will be made by the USCG:

1) The temperature range in which the virus is known to replicate, and in which fish kills have been detected, is quite broad (37 F - 70 F [3-21 C]). Since this range encompasses the majority of water temperatures found in the Great Lakes throughout the year, LCA recommends following this supplemental BMP regardless of water temperatures.
2) In order for the disease to spread, an uninfected, yet vulnerable fish, must be exposed to an active virus, such as with exposure to the bodily fluids from an infected fish. The virus is most stable in a living fish. It can remain active in dead or macerated fish parts, but for a shorter time. Therefore LCA recommends its members take all appropriate actions to insure that fish or fish parts do not enter their ballast tanks. This is accomplished by inspecting the ½" openings screening the ballast water intakes and using pumps as macerators during uptake and discharge. These are also recommendations in the primary VHS BMPs (2007).
3) Fish populations are denser near shore and significantly less dense more than 3 miles from shore; therefore, LCA recommends its members, when and where possible, minimize uptake of ballast water in near shore locations. To further reduce risk, when possible:
a. Conduct a ballast water exchange in the deepest, warmest water prior to entering

Lake Superior (this practice would specifically preclude exchanging ballast water in Lake St. Clair and the western basin of Lake Erie).

b. If members are unable to conduct an exchange in the lower Great Lakes, consider doing an exchange in deep, remote waters of Lake Superior.

c. Although it is unlikely a live fish or larger fish particle could have entered the ballast system, consider exchanging ballast water within the ship or recirculating it within a ballast tank (pumps act as a macerator to reduce the possibility of discharging fish or larger pieces of fish).

d. Continue working with the U.S. Coast Guard and Council of Lake Committees to evaluate additional risk reduction actions.

**LCA appreciates the efforts of concerned stakeholders to help our members develop these supplemental best management practices. Please be cognizant that the use of chemicals on ballast water, or other treatment methods, must comply with U.S. Coast Guard regulations and must not violate any State, Provincial or Federal Law.**

**Appendix D**

Photo courtesy of clark.edu

# Lower Great Lakes Ballast Water Workshop

March 13 and 14, 2008
Tom Ridge Environmental Center
Erie, Pennsylvania

## Agenda

Workshop Objective:

- To bring researchers, policymakers and industry stakeholders together to create a document others can use as a tool to develop law, policy and regulations regarding the introduction of invasive species into the Great Lakes. This workshop will focus on ballast water as a method of delivery for invasive species.

### Thursday, March 13

Room 112

8:30-9:00 Registration and Coffee

9:00-9:10 Welcome: Mark Gorman -Workshop Facilitator

9:10-9:20 Opening Remarks: Bob Light - Pennsylvania Sea Grant

9:20-9:50 Jim Grazio Pennsylvania DEP
The impacts of invasives…Why should we care?

9:50-10:50 *Invaders From the Sea* (Big Green Screen-TREC)

**10:50-11:00 Break**

### Research Update

11:00-11:30 Dale Bergeron Minnesota Sea Grant
The history of ballast water

11:30 -12 noon Chuck O'Neil NY Sea Grant
Economic impact of aquatic Invasive Species on the Great Lakes

**12 noon Lunch**

1:00-1:30 Allegra Cangelosi Northeast-Midwest Institute
The Great Ships Initiative: A Results Engine for the Great Lakes Region

1:30-2:00 Dave Knight Great Lakes Commission

Ballast Treatment Technology

2:00-2:30 Sarah Bailey Fisheries and Oceans Canada

Evaluating current risk of introduction and spread of AIS to Great Lakes ports by foreign and domestic ships

**2:30-2:45 Break**

## Policy Update

2:45-3:15 Cdr. Tim Cummins United States Coast Guard

Ballast Water Discharge standard update, overview of the Joint Ballast Water Management Exam program

3:15-3:45 Jamie Schardt GLNPO/EPA

Rapid response protocols for invasive species

## Industry Viewpoint

3:45-4:15 Ivan Lantz Shipping Federation of Canada

Ballast Water Management and Control

4:15-4:45 Jim Weakley Lake Carriers Association

Overview of the Great Lakes shipping industry and its efforts to reduce the risk of spreading invasive species

4:45 Mark Gorman Charge for Day Two

## Friday, March 14

Room 112

8:15-8:30 Registration and coffee

8:30-8:40 Mark Gorman Welcome - goals for the day

## Legislation Update

8:40-9:oo Pat Harkins/John Hornaman Pennsylvania House of Representatives

House Bill 1736 update

9:00-9:30 Stephanie Showalter National Sea Grant Law Center

The authority of states to regulate ballast water

9:30-10:00 Jennifer Nalbone Great Lakes United

Current state of pending ballast water legislation-is it robust enough to stop the next zebra mussel?

10:00-10:30 John Jamian Seaway Great Lakes Trade Association

Economic impacts of policy on ports and carriers

10:30-10:45 Break

## Breakout Sessions

| | | |
|---|---|---|
| 10:45-11:45 | Breakout session | |
| Research | Room 112 | Facilitator: Jim Grazio |
| Policy/Legislation | Room 110 | Facilitator: Helen Domske |
| 11:45-12:15 | Mark Gorman | Breakout group wrap-up and ‘pulling it all together' |
| 12:15 | Adjourn | |

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