Ballast Water and Invasive Species in the Northeast: The Current Situation and Policy Recommendations

Jennifer Mehaffey J.D.
Sea Grant Law Fellow, Roger Williams University School of Law, marineaffairs@rwu.edu

Follow this and additional works at: https://docs.rwu.edu/law_ma_seagrant

Part of the Law Commons

Recommended Citation
https://docs.rwu.edu/law_ma_seagrant/3
Ballast Water and Invasive Species in the Northeast: The Current Situation and Policy Recommendations

Jennifer Mehaffey, J.D.
Sea Grant Law Fellow
Main Topics…

- Current Situation in the Northeast
- Current Federal Situation
- International
  (IMO Ballast Water Convention)
- Treatment Technologies
- Policy Recommendations
The introduction of invasive species is considered one of the top four threats to marine ecosystems. Results in environmental, social and economic problems. Ballast water is the primary vector for non-native invasive species. It is estimated over 10,000 species being carried in ballast tanks daily. Currently, Ballast Water Exchange is the only internationally accepted technology.
Ballast Water Exchange (BWE)

USCG (33 CFR 151.2025) defines BWE as replacing the ballast water by either

(a) Flow through exchange: flush out ballast water by pumping mid-ocean water at the bottom of the tank and overflowing the tank from the top until three full volumes of water have been changed

(a) Empty/Refill Exchange: pump out water taken on in ports (until tank is empty) and flushing with mid-ocean water – should pump out as close to 100% ballast water as is safe to do

Problems:
Safety
Operations
Effectiveness
Compliance monitoring
The 2004 IMO Ballast Water Convention: Performance Based Technology Standards

(Regulation D-1) Ballast Water Exchange: 95% volumetric exchange at least 200nm from land in water 200m deep

(Regulation D-2) Concentration performance based standard

(D-2.1) Viable Organisms: allowable limits discharged in ballast water defined by maximum number and size per cubic meter

(D-2.2) Indicator Microbes: allowable limits defined by type and maximum colony forming unit per 100 milliliters

Concentration based standard will apply to all ships between 2009 and 2016
- Depends on the size, class and construction date of the ship
- Between 200-500 ships expected to be subject to the 2009 date
- All ships expected to meet D-2 standards by 2016
Northeast

- **Canada**
  - Transport Canada TP 13617 E (2006) require BWE 200 miles from shore or if unable must use best management practices and/or alternative zones
  - List specified actions for vessels declaring no ballast onboard or unable to manage their ballast water
  - Follow IMO concentration based standards for ballast water discharge

- **Northeast United States**
  - R.I. Gen Laws Sec. 46-17.3-2 (2007) set forth plan to develop ballast water management program
  - Maine, Vermont, New Hampshire, Massachusetts, Connecticut, and New York have several general laws addressing invasive species, but none specifically for ballast water management
## Shipping Patterns in the Northeast: 2000-2005

<table>
<thead>
<tr>
<th></th>
<th>Arrivals</th>
<th>BW Discharge</th>
<th>Not treated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maine</td>
<td>902</td>
<td>73</td>
<td>11</td>
</tr>
<tr>
<td>New Hampshire</td>
<td>86</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>795</td>
<td>28</td>
<td>15</td>
</tr>
<tr>
<td>Rhode Island</td>
<td>227</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Connecticut</td>
<td>213</td>
<td>11</td>
<td>1</td>
</tr>
<tr>
<td>New York</td>
<td>4801</td>
<td>555</td>
<td>242</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>7024</td>
<td>676</td>
<td>271</td>
</tr>
</tbody>
</table>
Great Lakes and the West Coast

**Great Lakes**

- Require all ocean going vessels to obtain a permit for discharging ballast water
- Michigan DEM issued first ballast water permits in March, 2007

**West Coast** (apply to vessels >300 tons entering state waters either from beyond EEZ or coastal travel)
- California (2006): 0% emissions by 2020 – phase out safety exemption
  - Management approach: Exchange, retain on board, treat or shore side treatment
  - Internal transfer of ballast water must be logged
  - Biological surveys must be conducted evaluate effectiveness
- Oregon (2002)
  - Management approach: exchange
- Washington (2007)
  - Management approach: exchange or treatment
  - Requires consistency with IMO and USCG
Federal


USCG manages ballast water at national level
- 33 CFR Part 151, Subparts C & D
- Submit ballast water reports to National Ballast Water Information Clearinghouse (NBIC)
  - joint Smithsonian /USCG clearinghouse implemented under NISA
- Made mandatory in 2004

Act to Prevent Pollution from Ships (as amended 2001)
- Implement MARPOL 73/78
- Question of invasive species as “pollution”?
Pending Federal Actions…

Pending in 110th Congress

- **S. 725 (Sen. Levin) 3/1/07**
  - Aquatic Invasive Species Task Force develop management plan
  - EPA, Nat’l Fish and Wildlife and NOAA to implement a national system of ecological surveys for rapid early detection and monitoring of invasive species.
  - Establish emergency rapid response fund
- **HR 889 (Rep. Miller, MI) 2/7/07**
  - Within one year of enactment, “shall” promulgate regulations for alternative BW treatment technology to meet IMO standards
  - Urge international cooperation
- **HR 2423 (Rep. LaTourette, OH) 5/22/07**
  - Alternative BWM evaluation and demonstration programs

Clean Water Act, 40 C.F.R. Sec. 122.3(a) (?)

- **Northwest Environmental Advocates v. EPA (N.D. Cal, 2006)**
  - Appeal filed Nov. 16, 2006 / Oral arguments in mid-August 2007
  - If Court’s order stands – the regulatory exclusion allowing for the discharge of pollutants incidental to the normal operation of vessels without an NPDES permit will be vacated by September 2008
  - Ballast water will be regulated under CWA Sec. 301(a)
- **Problem:** EPA ill-equipped to handle the huge impact the Order will have
  - (2005) 8,400 vessels with ballast water tanks reporting 86,000 port calls
  - 13 million State-registered recreational boats; 81,000 commercial fishing vessels; and 53,000 tank and freight barges operating in U.S. waters
Organizations Involved in Ballast Water Management

- National Estuary Program (est. 1987)
- Aquatic Nuisance Species Task Force
- National Invasive Species Council
- Smithsonian Environmental Research Center (SERC)
- Interagency Committee on the Marine Transportation System (2005)
- EPA/USCG
  - Programmatic Environmental Assessment (PEA) for USCG’s Mandatory Ballast Water Management Program
  - Environmental Technology Verification (ETV) Program
  - Office of Wetlands, Oceans, and Watersheds (OWOW) Invasive Species Strategy
- Various Local and Regional Programs
(1997) Adopted Resolution A.868(20) Invites States to implement national legislation on ballast water management
- Currently US, Argentina, Australia, Canada, China, Chile, Israel, UK and New Zealand
- But...calls for future action “based on a globally applicable regulation”

(2000) Globallast formed to assist less developed countries address ballast water problems
- Pilot sites represent the six main developing regions of the world

- Port Stats directed to apply Convention to non-Party ships – condition of port entry
- Right of flag/port States to inspect (without need for “clear ground”) / Specific sanctions left to be determined by national law
- If invasive species are defined as “pollution” under UNCLOS – greatly increase the scope of the BWC
- Explicit provision allowing States to implement more stringent measures than in Convention (“sovereign right”)
- Technology based concentration based standards
- 15 IMO Guidelines for the uniform implementation of the Convention currently adopted or under development
## Ballast Water Management Overview

<table>
<thead>
<tr>
<th>Provisions</th>
<th>IMO</th>
<th>Federal</th>
<th>Canada</th>
<th>Cal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mandatory open Ocean Exchange</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Safety and other exemptions</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Applies to domestic coastal voyages</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Allows alternative treatment (if approved)</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Offers incentives for alternative treatment</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Includes Fees to support program</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Requires BW Management Plan</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

### Reporting

<table>
<thead>
<tr>
<th>Reporting</th>
<th>IMO</th>
<th>Federal</th>
<th>Canada</th>
<th>Cal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required at each port of call</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Electronic submission form</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Verification and Enforcement

<table>
<thead>
<tr>
<th>Verification and Enforcement</th>
<th>IMO</th>
<th>Federal</th>
<th>Canada</th>
<th>Cal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boarding of Vessels to verify</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Penalty for non-reporting / non-compliance</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
New Technology

**IMO:** Encourage technological development
- 5 year waiver offered if participate in programs testing prototype ballast water treatment technologies
- Globallast sponsor research and development symposiums

**United States:**
- ETV and USCG National Ballast Water Management program developing protocol for testing new technologies (Naval Research Lab in Key West, FL)
- ETV and USCG Research and Development Center develop protocol and testing for BWE screening technology (Groton, CT)
  - BEAM technology (Dakota Technologies, Inc.)
- NOAA/Maritime Administration/Fish and Wildlife 2007 Ballast water Technology demonstration Program Competitions
- (Great Lakes, California, Washington) Encourage development of new technologies in their ballast water management plans / Demonstrations and competitions
Problems…

- Question of federal pre-emption (commerce vs. environmental concerns)
- There is currently no ballast water management program for Northeast ports
- Problems with BWE
  - Inspectors often do not understand the technical realities of ballast water exchange (can cause hull stress and instability)
  - Ballast water exchange cannot be performed during high seas conditions
  - Often inspections are a cursory glance at paperwork – not really effective
- No uniform standards for shipping industry to work towards
Policy Recommendations

- Northeast Ballast Water Management Program
  - Need stable source of funding
  - Effective coordination and management of Program for state agencies
  - Clearly state treatment requirement (technology based standards)
  - Provide incentives for alternative treatment technologies (cut port fees vs. punitive sanctions?)
  - Align state laws with national and international ballast water regulations (need for uniformity)
  - Include requirement of environmental monitoring to evaluate effectiveness of Program

- Model for Federal Ballast Water Management?
  - Australia’s requirements incorporate the Ballast Water Decision Support System (BWDSS) - a computer application that can provide vessels with a risk assessment of their ballast water and deem it to be acceptable for discharge or otherwise. Use of the BWDSS is not mandatory.