Oregon Ballast Water Program

PACIFIC BALLAST WATER GROUP MEETING
MARCH 2016
SACRAMENTO, CA

Rian v. Hooff
Department of Environmental Quality
Portland, Oregon
Oregon Ballast Water Program

- Regulations established in 2001
- Program activities include:
  - Monitoring vessel arrivals for pre-arrival BWMR compliance
  - BWMR screening to identify high-risk arrivals
  - Vessel inspections & compliance verification sampling
  - Outreach & technical support
  - Enforcement actions
  - Stakeholder engagement & policy development
- Program funding:
  - Initial funding level of 1.0 FTE (2007) was increased to 1.5 FTE following implementation of new fee in 2012
  - Effective Jan 2016 fee is $88 per qualifying voyage
  - 50/50 cost share between fee revenue and GF allocation
BWRF required 24-hr prior to arrival in state waters

Reports filed for 99.6% of arrivals in 2015
2015
768 unique vessels for 1438 QV's
31% 1st timers
97% Col. R.
3% Coos Bay

Vessel Arrival Trends
Qualifying Voyages (QV) per year

<table>
<thead>
<tr>
<th>Year</th>
<th>Foreign</th>
<th>Pac. Coast Region</th>
<th>Common Water</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>1000</td>
<td>50</td>
<td>500</td>
</tr>
<tr>
<td>2009</td>
<td>1100</td>
<td>60</td>
<td>300</td>
</tr>
<tr>
<td>2010</td>
<td>1200</td>
<td>70</td>
<td>200</td>
</tr>
<tr>
<td>2011</td>
<td>1300</td>
<td>80</td>
<td>100</td>
</tr>
<tr>
<td>2012</td>
<td>1400</td>
<td>90</td>
<td>50</td>
</tr>
<tr>
<td>2013</td>
<td>1500</td>
<td>100</td>
<td>40</td>
</tr>
<tr>
<td>2014</td>
<td>1600</td>
<td>110</td>
<td>30</td>
</tr>
<tr>
<td>2015</td>
<td>1700</td>
<td>120</td>
<td>20</td>
</tr>
</tbody>
</table>

62% 61% 64% 29% 30% 9% 9% 13%
59% of Oregon arrivals discharged ballast to state waters in 2015
Ballast Water Discharge Trends

2015
12.2 Million m³ discharged to Oregon waters

94% CR
6% Coos Bay
86% of discharged ballast managed via mid-ocean exchange (MOE)

Reported Ballast Management Status of 12.2 M m³ discharged in 2015

- Mid-Ocean Exchange: 86%
- Coastal Exchange: 3.4%
- Common Waters: 2.7%
- Oceanic: 2.5%
- Other: < 1%
- Treated: 2.1%
- Non-Compliant: 2.9%
### BWM Paradigm Shift: BWE ➔ BWT

<table>
<thead>
<tr>
<th>Year</th>
<th>BWT Discharge</th>
<th>Proportion Total BWD</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>15,892 m³ (n = 1)</td>
<td>4%</td>
</tr>
<tr>
<td>2014</td>
<td>32,593 m³ (n = 3)</td>
<td>5%</td>
</tr>
<tr>
<td>2015</td>
<td>256,854 m³ (n = 19)</td>
<td>6%</td>
</tr>
</tbody>
</table>

**BWT Discharge:**
- 2016: ? M m³
Inspection Objectives:

1. Outreach & Technical Service
2. Audit of Shipboard Records
3. Compliance Verification via Sampling of Ballast water salinity
4. Assist with Corrective Action
Enforcement Actions
(number per month)

Enforcement Guidance Policies initiated beginning January 2013
## Ballast Program Enforcement Actions

<table>
<thead>
<tr>
<th>Enforcement Action</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Warning Letters</td>
<td>76</td>
<td>61</td>
<td>30</td>
</tr>
<tr>
<td>Expedited Enforcement Offers Issued (Field Ticket)</td>
<td>23</td>
<td>9</td>
<td>3</td>
</tr>
<tr>
<td>Formal Enforcement Actions Issued</td>
<td>1</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Combined Penalties</td>
<td>$23,250</td>
<td>$70,600</td>
<td>$12,000</td>
</tr>
</tbody>
</table>

Base Penalty Values revised in January 2014
Recent Policy Developments

- STAIS Task Force
- Report to the OR Legislature
- 2015 Legislation
- Rulemaking Development

2014

2015

2016
Objectives:

- Support implementation of federal BWDS, but mitigate concerns with locally tailored solutions that are globally compatible.
- Ensure that implementation of federal BWDS strategies do not result in increased risk of introductions to low-salinity ports in Oregon.
- Develop ballast management strategy for freshwater ports that could facilitate west coast regional consistency.
- Solicit advisory committee input to ensure that rules are adequately protective, practical and feasible.
Efficacy of IMO D2 BWDS is questionable for protecting freshwater ports

SW Source → SW Port
(coastal marine organisms = high-risk)

End-of-pipe discharge following:

- BWE: 1000’s per m3
- BWT: <10 per m3

FW Source → FW Port
(freshwater organisms = high-risk)

End-of-pipe discharge following:

- BWE: 1000’s per m3
- BWT: <10 per m3

(Adapted from Briski et al 2015)
The combined BWE + BWT strategy targets two factors in the invasion process: propagule pressure and environmental tolerance.

- Shipboard results demonstrate that BWE + BWT tanks contained mostly lower risk marine taxa unlikely to survive in recipient freshwater ecosystems.
- Can be strategically applied to target high-risk voyages.

“BWE plus BWT proved to be more effective at reducing invasion risk to freshwater recipient systems than BWT alone.”

Briski et al. (2015) Combining ballast water exchange and treatment to maximize prevention of species introductions to freshwater ecosystems. *Environmental Science & Technology* 49, 9566–9573
Primary discussion points regarding OR BWE+BWT proposal

- Consistency with policy criteria established in other jurisdictions
  - EPA VGP regulations for Great Lakes, or
  - State regulations established by MA, MI, MN, NY, RI, or
  - West Coast consistency (i.e. Canada proposal).

<table>
<thead>
<tr>
<th>BWE+BWT Policy</th>
<th>BW Source Salinity</th>
<th>Receiving Port</th>
<th>Voyage Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPA (GL)</td>
<td>&lt; 16 ppt</td>
<td>St. Lawrence / GL</td>
<td>fr/ outside EEZ</td>
</tr>
<tr>
<td>MA/MI/MN/NY/RI</td>
<td>all</td>
<td>all</td>
<td>fr/ outside EEZ</td>
</tr>
<tr>
<td>CANADA*</td>
<td>all</td>
<td>&lt; 2 ppt</td>
<td>fr/ outside EEZ</td>
</tr>
<tr>
<td>Oregon</td>
<td>?</td>
<td>?</td>
<td>?</td>
</tr>
</tbody>
</table>

* Tentative - based on Transport Canada IMO Implementation Plan
**Primary discussion points regarding OR BWE+BWT proposal**

Oregon BWD (volume) – Source Environment

(12.5 Million m$^3$ per year)

- BWD - marine: 75.0%
- BWD - FW/Brackish: 17.6%
- BWD - source unknown: 3.0%
- CWE: 4.4%

(Adapted from Noble 2007)

Oregon BWD (annual arrivals) – Source Environment

(n= 1550 per year)

- ~ 10.4% of vessel arrivals to state waters (~ 162 per year) may be subject to BWE + BWT requirement

** - based on EPA VGP criteria for GL: affecting BW <18 ppt
Primary discussion points regarding OR BWE+BWT proposal

Oregon BWD (volume) – Source Environment
(12.5 Million m³ per year)

Oregon BWD (annual arrivals) – Source Environment
(n= 1550 per year)

~ 57% of vessel arrivals to state waters (~ 880 per year) may be subject to BWE + BWT requirement

* - based on ‘Transport Canada’ implementation criteria for all BWD to ports < 2 ppt
Primary discussion points regarding OR BWE+BWT proposal

- Consistency with criteria/policies established in other jurisdictions
  - EPA VGP regulations for Great Lakes, or
  - State regulations established by MA, MI, MN, NY, RI, or
  - West Coast consistency (i.e. Canada proposal)

- Exemptions
  - Use of BWT that meet BWDS higher than IMO/D-2
  - BWT design that can’t accommodate BWE (e.g. short voyages)

- Outreach to vessel operators (non-compliance implications)

- Sunset Date?
Next Steps:
1. Complete internal review of Advisory Committee input
2. Release proposed rule for public comment (April/May)
3. Prepare final rule to be considered for adoption by the Environmental Quality Commission
Oregon Ballast Water Management Program

Questions or Comments?

Contact Info:
(503) 229-6865
rian.hooff@state.or.us
webpage: http://www.deq.state.or.us/lq/cu/emergency/ballast.htm

Photo credit: B. Bjorndal