

Oregon Ballast Water Program

*PACIFIC BALLAST WATER GROUP MEETING
FEBRUARY 2012
SEATTLE, WA*



*Rian v. Hooff
Department of Environmental Quality
Portland, Oregon*



Oregon Ballast Water Program

Program Overview

- Regulatory program established in 2001.
- Funding/Staff resources allocated by 2007 Legislature.
 - 1.0 FTE – General Fund
- Activities/Responsibilities include;
 - Monitoring of vessel arrivals and reporting compliance
 - Communication & Outreach
 - Vessel Inspections
 - Enforcement Actions
 - Policy Development
- Program development in consultation with the Oregon Task Force on Shipping Transport of Aquatic Invasive Species.



Oregon Ballast Water Program

Statutory Requirements (ORS 783.620 -640; 783.990-992)

- **Regulated Vessels:** > 300 gross tons equipped with ballast tanks.
- **Reporting of Ballast Management**— at least 24 hours prior to entering waters of the state.
- **Management requirements for discharged ballast:**
 - Transoceanic transfer: 200 nm. offshore / 2000 m. depth (MOE), or
 - Coastwise transfer: 50 nm. offshore / 200 m. depth (COE), or
 - USCG approved treatment.
- **Exemptions**
 - Common Waters (40°N – 50°N of NE Pacific)
 - Vessel or Crew Safety
- **Civil Penalties**
 - Civil: Up to \$25,000 penalty per violation
 - Criminal



Oregon Ballast Water Program

2011 Highlights

- SB 81 (2011)
 - Established \$70/arrival fee to support program objectives.
 - Authorized additional ½ FTE support for program activities.
 - Reduced program reliance on General Fund.
- Administrative Rulemaking
 - Clarified recordkeeping requirements and inspection activities.
 - Enhanced protections related to safety exemption discharges and sediment management.
 - Adopted by EQC in April 2011.
- Revised Enforcement Guidance
- Biofouling Management White Paper

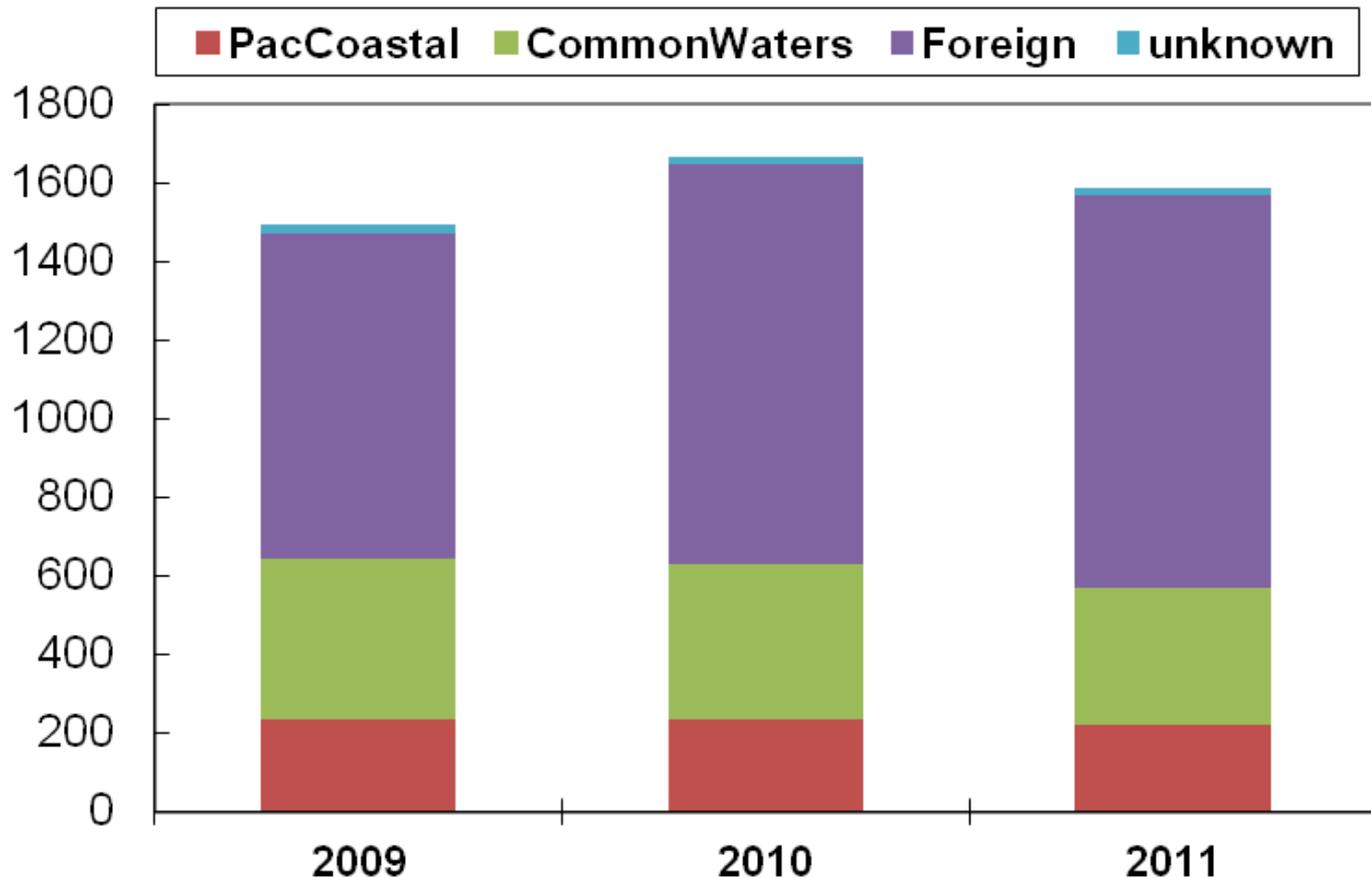


Shipping Trends

Qualifying Arrivals (2009-11)

60% arrive from foreign ports; 24% from common waters zone; 15% from Pacific Coastal Zone

945 unique vessels accounted for 1587 arrivals to Oregon in 2011

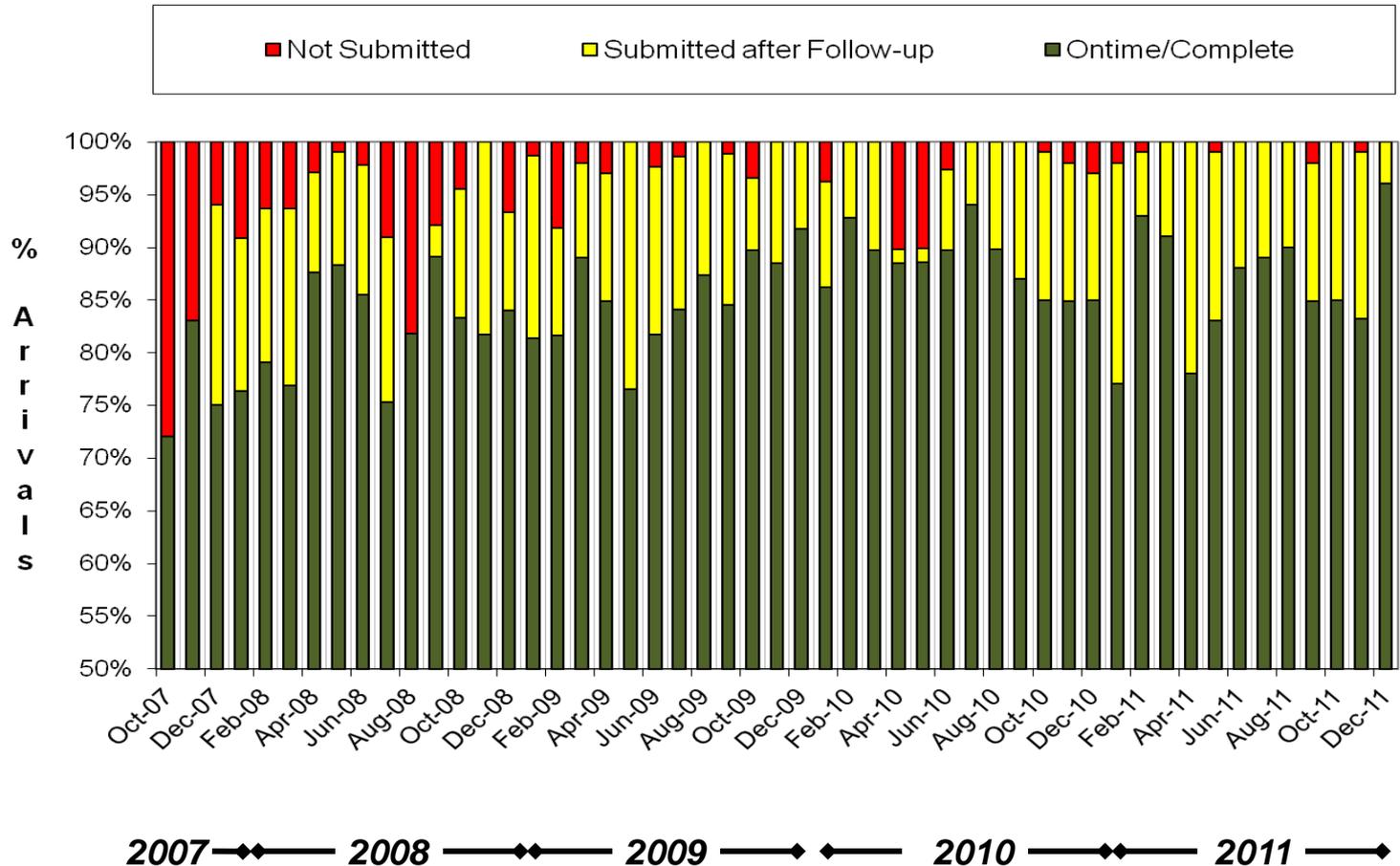




Ballast Reporting Compliance

2007 – present

Reports filed for 99.5% of arrivals (OR ports) in 2011



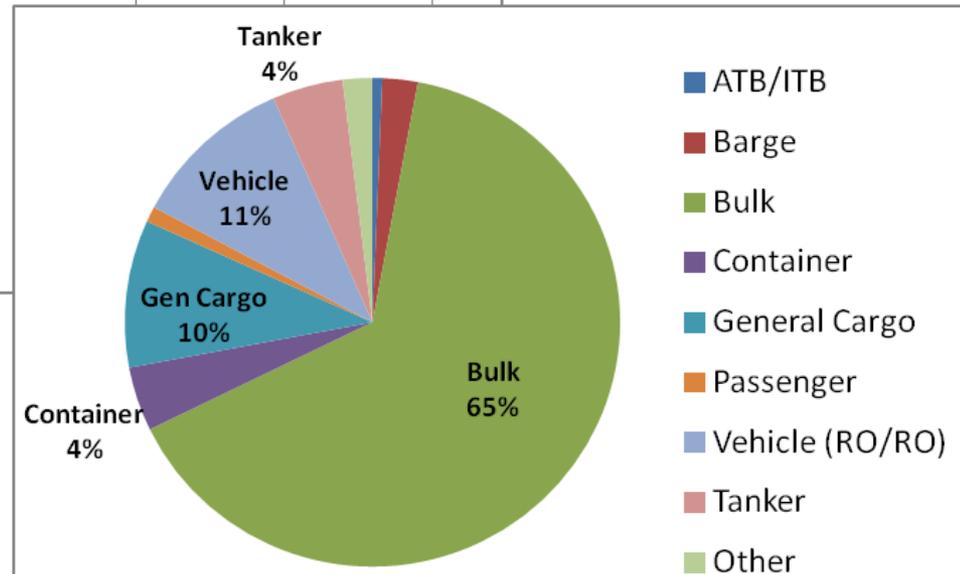
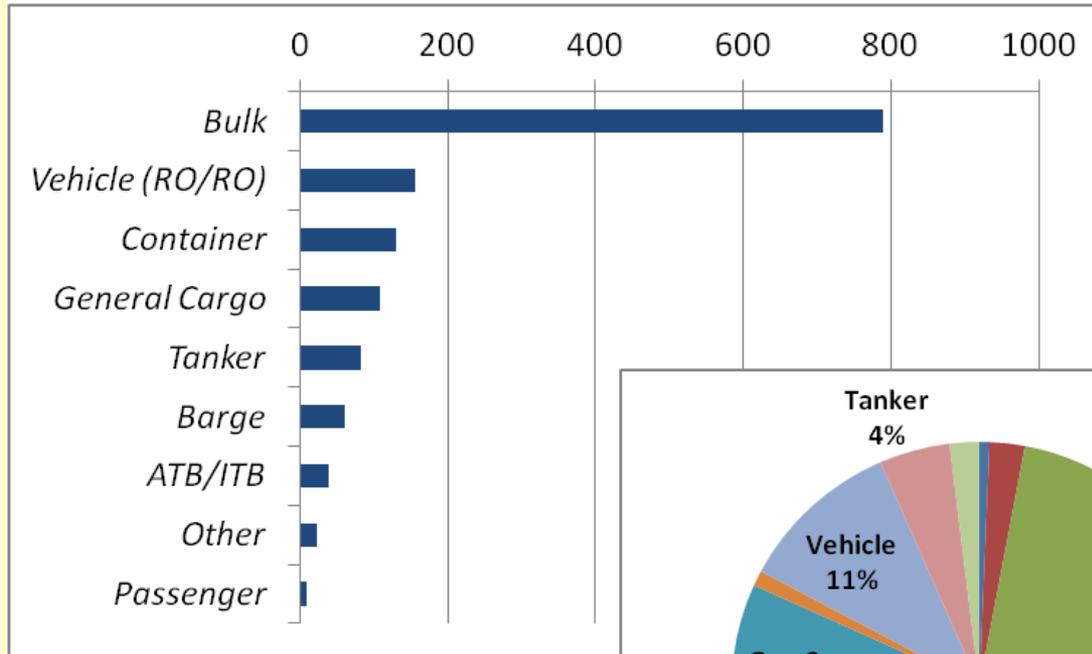


Shipping Trends

Arrivals - Vessel Types (2011)

Bulk carriers account for 57% of arrivals (n=1587)

About 950 unique vessels per year



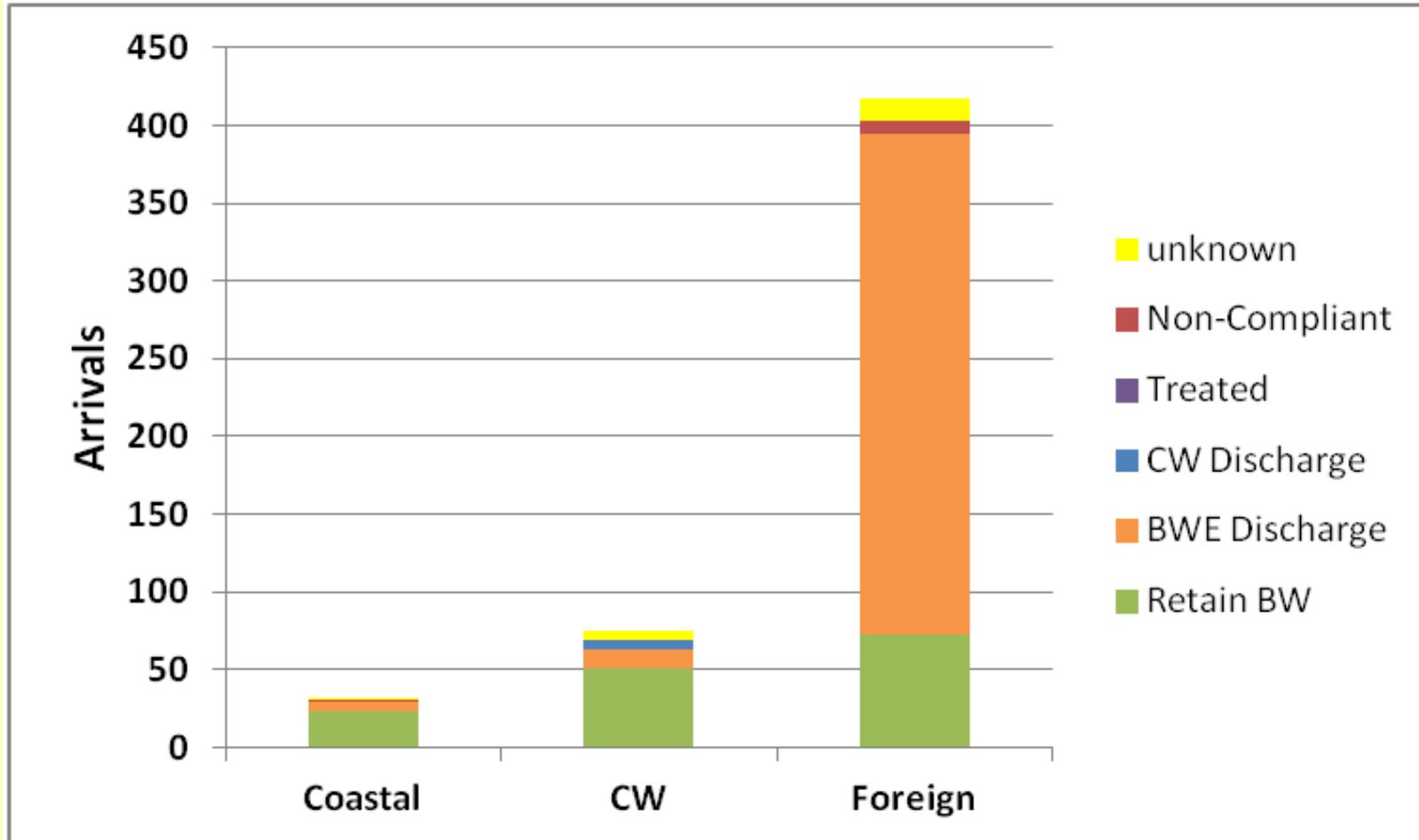


Shipping Trends & Ballast Water Management

First Time Arrivals to Oregon (2011)

34% arrivals are first timers to OR

Of the first time arrivals; 72% are bulk carrier vessels



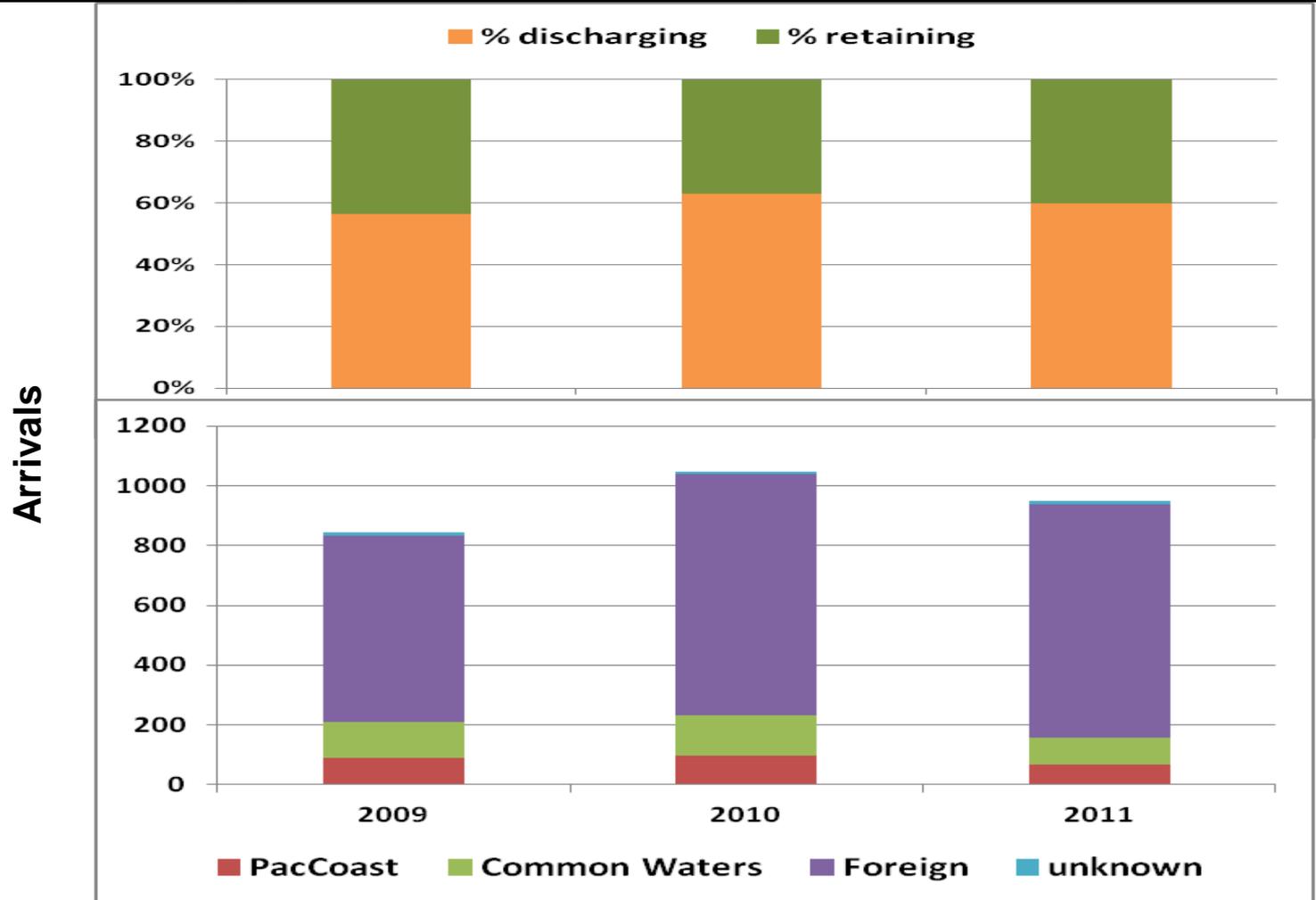


Ballast Management Characteristics

Discharge Behavior (2009-11)

60% of Oregon arrivals discharge ballast water

Of those discharging; 78% arriving from foreign ports



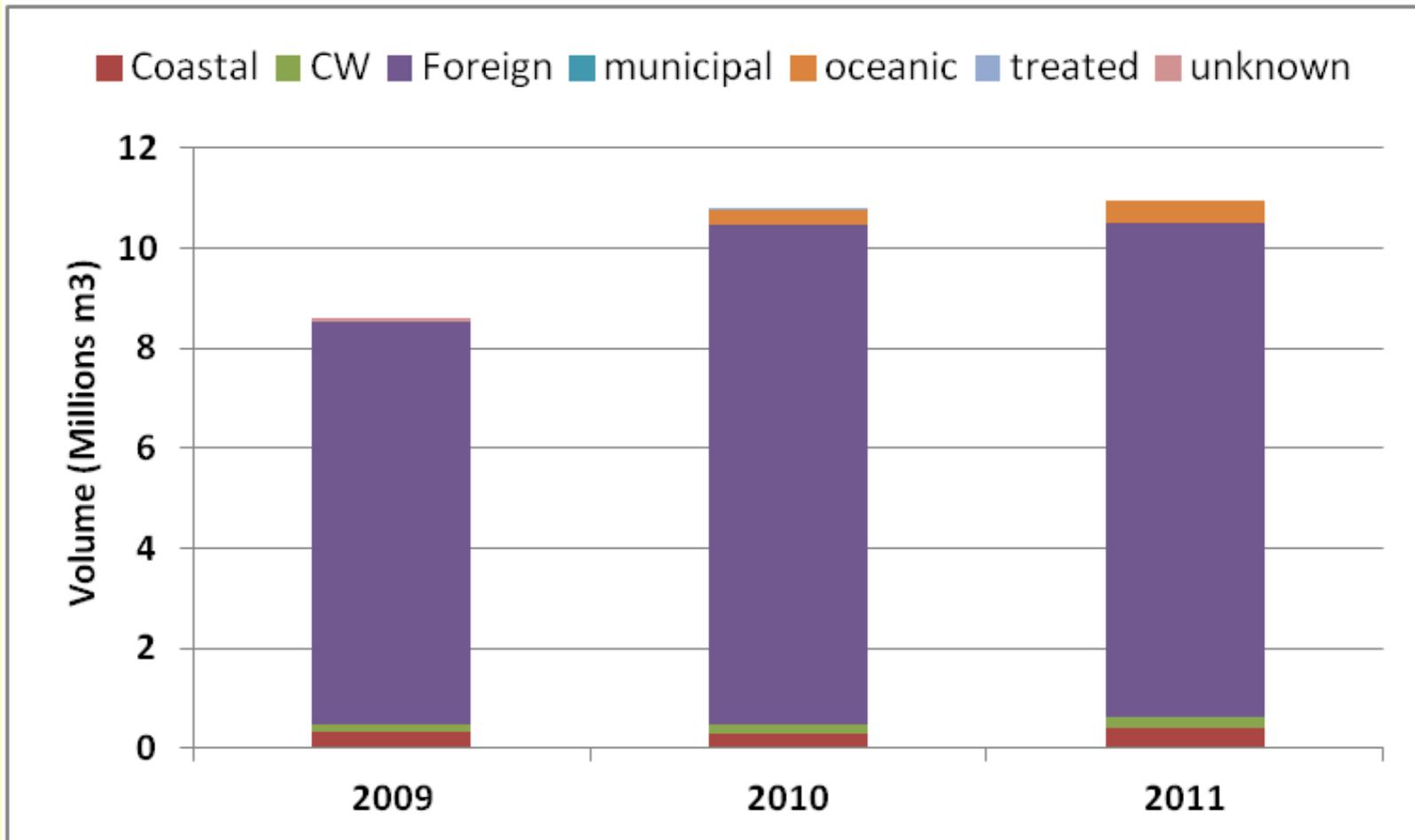


Ballast Discharge Trends

Total Discharge Volume (2009-11)

Total discharge to
OR waters in
2011 was
10.9 Million m3

92% of discharge
was originally
sourced from
foreign regions;
3% from Pacific
Coastal Ports.



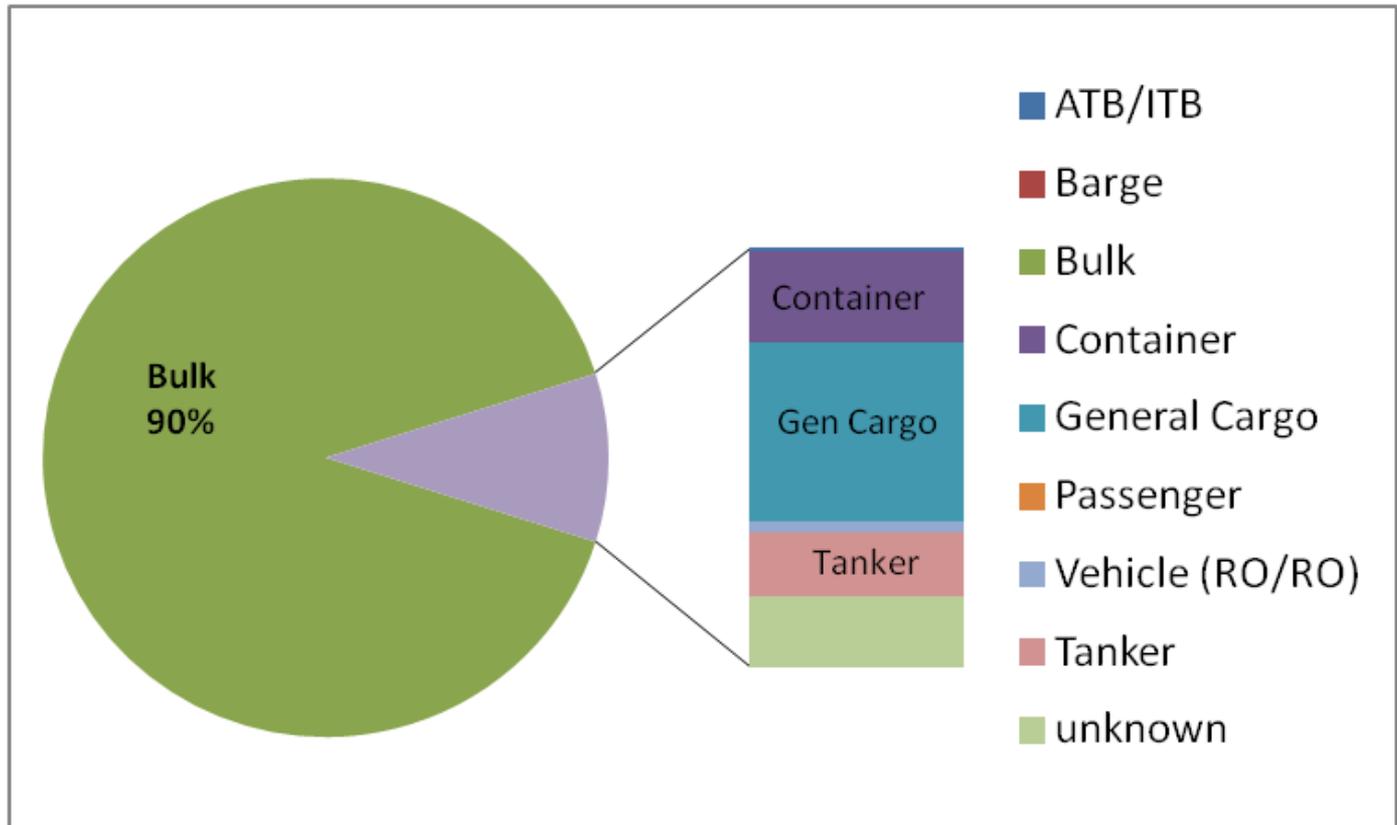


Ballast Discharge Characteristics

Discharge Volume per Vessel Type (2011)

90% of discharge to Oregon waters is from bulk carrier vessels

The 'average' bulker transiting OR waters discharges > 9k m³ per visit.



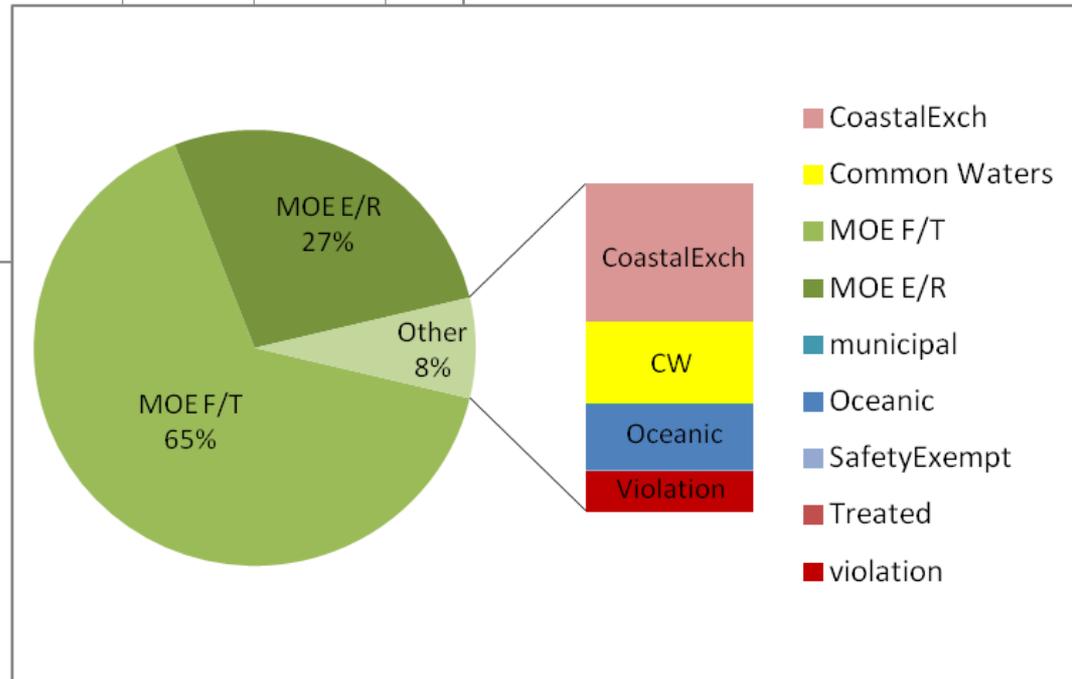
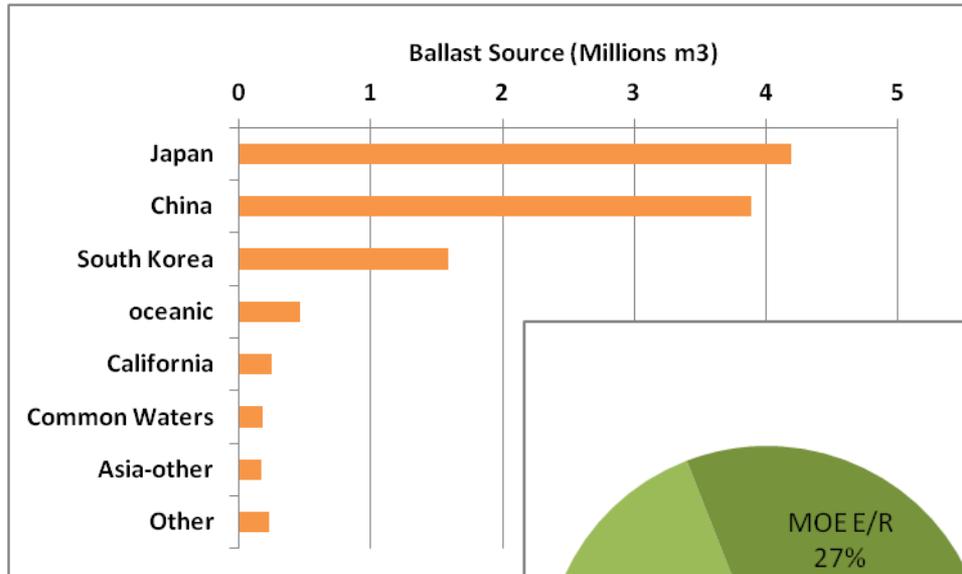


Ballast Discharge Characteristics

Discharge: Source & Management (2011)

88% of discharged ballast originally sourced from East Asia

65% of discharged ballast exchanged using flow-thru method



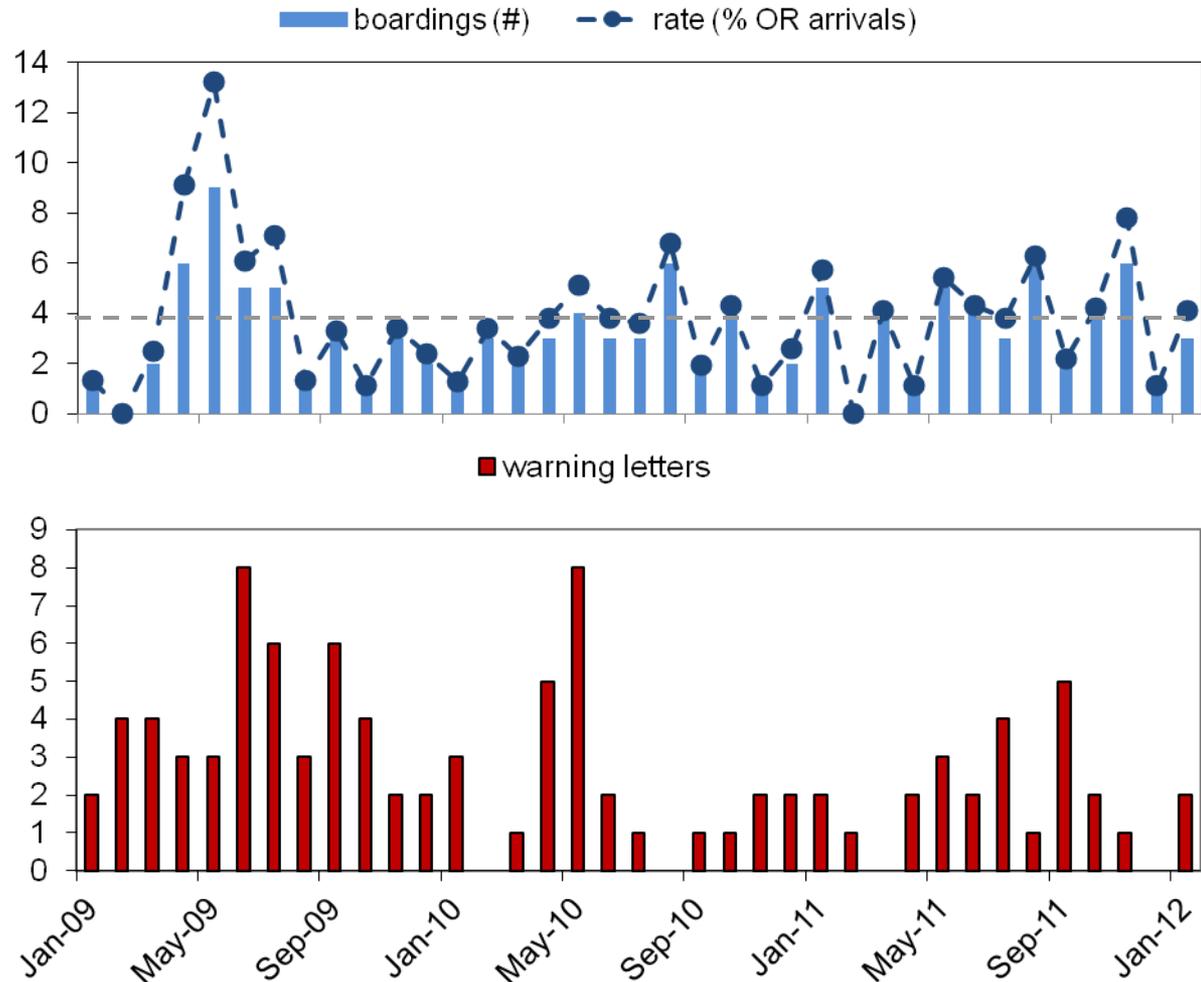
- CoastalExch
- Common Waters
- MOE F/T
- MOE E/R
- municipal
- Oceanic
- SafetyExempt
- Treated
- violation



Vessel Inspections & Enforcement

Monthly Program Activities (2009-present)

Average
Monthly
Boarding Rate
in 2011: 4%



Bio-fouling Threats Associated with Shipping Traffic to Oregon Waters

***Michael Paul
Oregon Sea Grant
Natural Resources Policy Fellow (2010-11)***





Summary of past studies assessing vessel fouling threats to Oregon waters

- High degree of variability in magnitude and frequency of hull-fouling: by vessel type and port location.
- Vessels operating solely within salt water or within freshwater, and vessels that had not been cleaned within the last two years, haven shown high levels of fouling.
- Vessels that commonly traversed a range of salinity conditions (such as barges that frequent the Lower Columbia River) have shown minimal fouling.
- NIS propagule pressure to OR waters is not a limiting factor
- Environmental characteristics of the Lower Columbia River provide some protection.
- However, the mouth of the lower Columbia River may be at high risk of inoculation by AIS (particularly if future research confirms that changes in salinity and temperature are cues to spawning).
 - Lower Columbia River benthic communities revealed that they are dominated with organisms that can survive in diverse habitats and tolerate a range of salinity levels



Hull-Husbandry Survey Data

- **Hull-Husbandry Reporting Form (HHRF)**
 - First developed by CSLC TAG
 - Eleven question survey that asks about:
 - Hull-husbandry practices
 - Voyage characteristics
 - State task force recommended using HHRF for voluntary survey effort beginning in 2009 for OR arrivals.



State of Oregon
Department of Environmental Quality

Hull-Husbandry & Maintenance Practices Survey

Vessel Reporting Form

Vessel Name:
Official / IMO Number:
Responsible Officer's Name and Title:
Date Submitted (Day/Month/Year):

Hull Husbandry Information

1. Since delivery, has this vessel ever been removed from the water for maintenance?
 Yes No

a. If Yes, enter the date and location of the most recent out-of-water maintenance:

Last date out of water (Day/Month/Year):		
Port or Position:	Country:	

b. If No, enter the delivery date and location where the vessel was built:

Delivery date (Day/Month/Year):		
Port or Position:	Country:	

2. Were the submerged portions of the vessel coated with an anti-fouling treatment or coating during the out-of-water maintenance or shipbuilding process listed above?

Yes, full coat applied <input type="checkbox"/>
Yes, partial coat <input type="checkbox"/> Date last full coat applied (Day/Month/Year)
No coat applied <input type="checkbox"/> Date last full coat applied (Day/Month/Year)

3. For the most recent full coat application of anti-fouling treatment, what type of anti-fouling treatment was applied and to which specific sections of the submerged portion of the vessel was it applied?

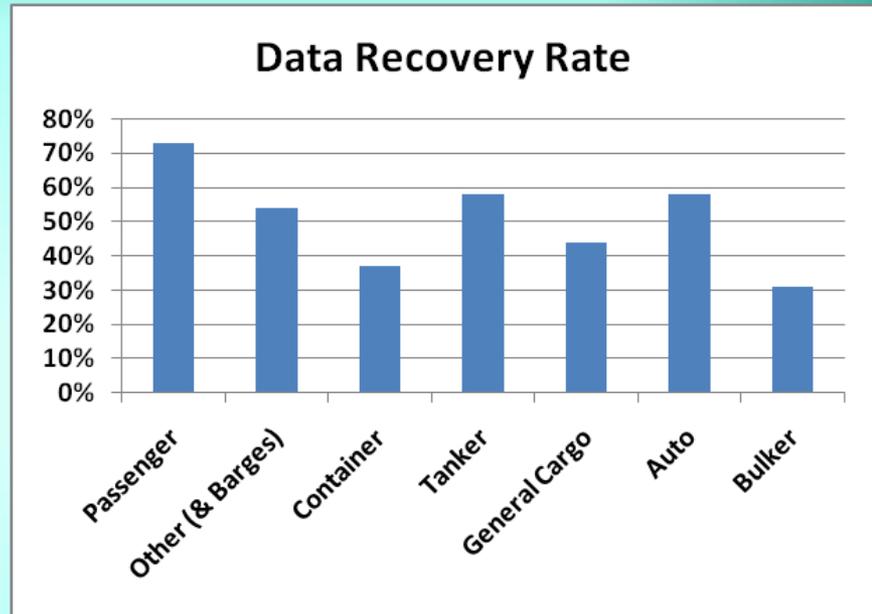
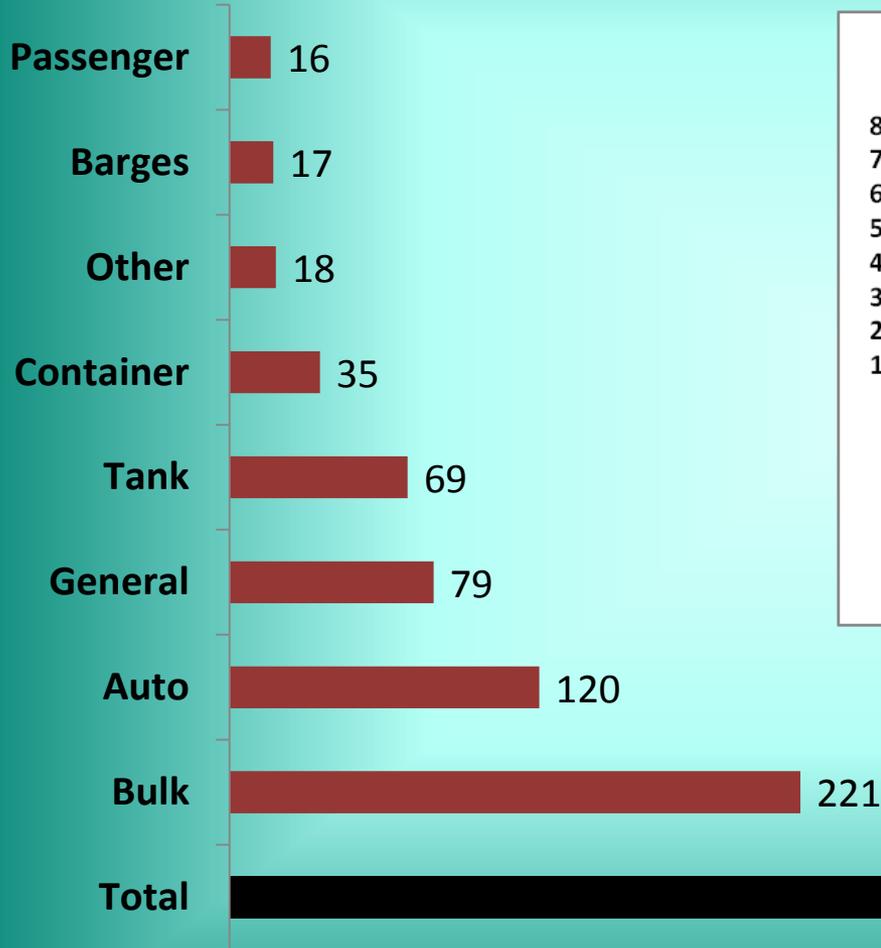
Manufacturer/Company:
Product Name:
Applied on (Check all that apply): Hull Sides <input type="checkbox"/> Hull Bottom <input type="checkbox"/> Sea Chests <input type="checkbox"/> Sea Chest Gratings <input type="checkbox"/> Propeller <input type="checkbox"/> Rope Guard/Propeller Shaft <input type="checkbox"/> Previous Docking Blocks <input type="checkbox"/> Thrusters <input type="checkbox"/> Rudder <input type="checkbox"/> Bilge Keels <input type="checkbox"/>

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Oregon DEQ – Vessel Survey Form 4/20/2009



Oregon HHRFs Collected (2008-09)

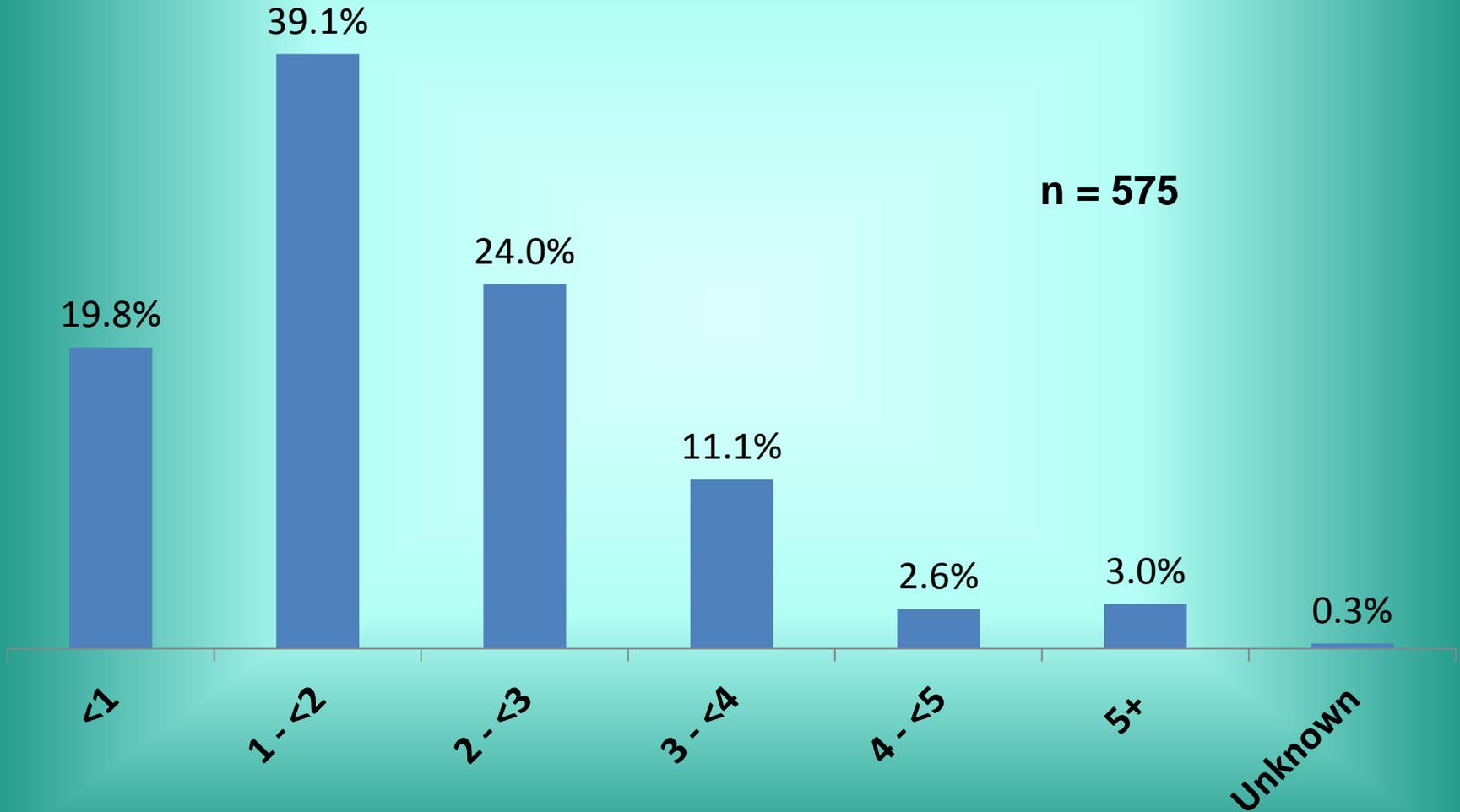


N = 575

**Overall Data Recovery Rate = 41%
(of 1395 unique vessels)**

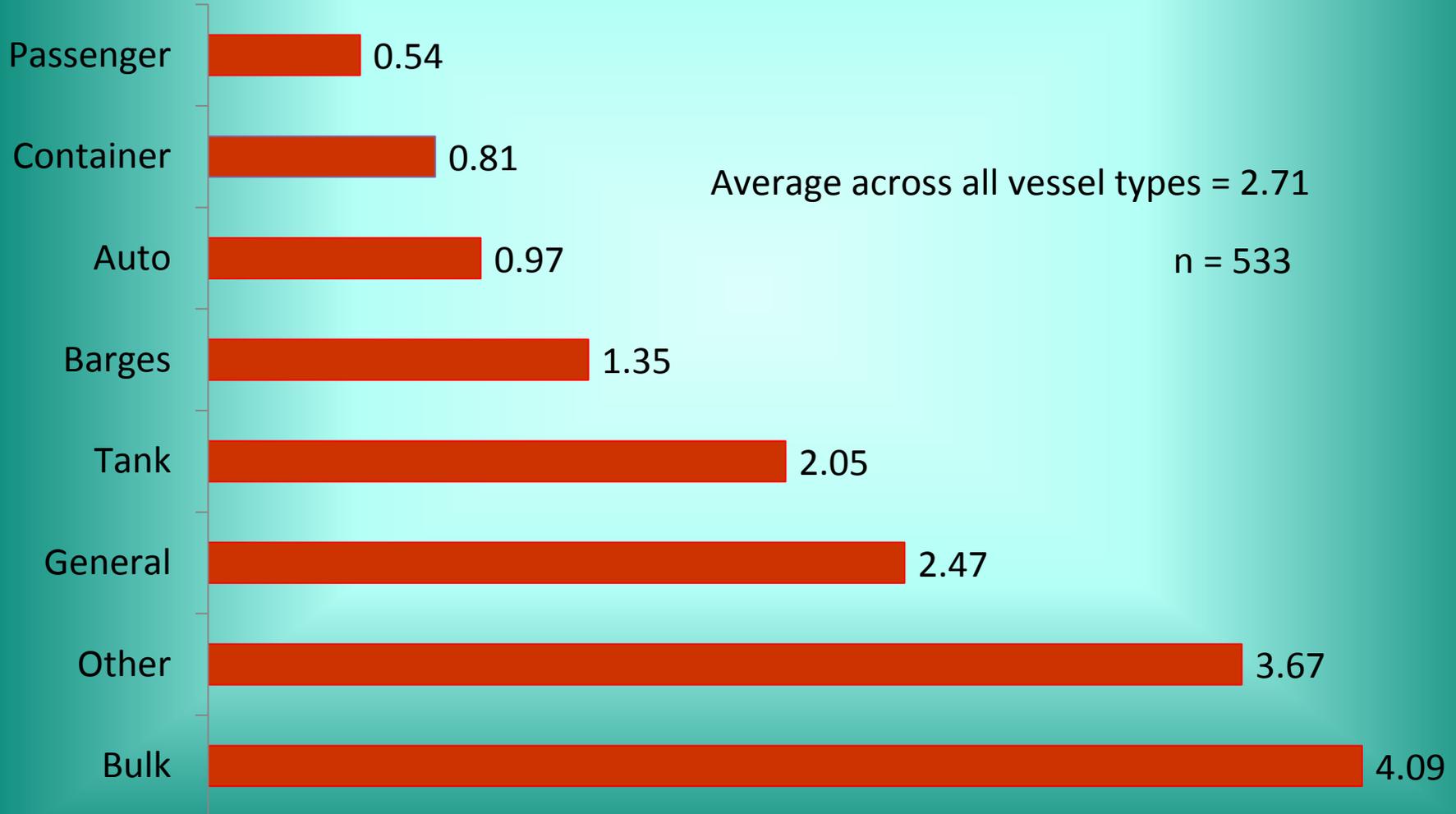


Years Since Most Recent Dry Docking or Delivery



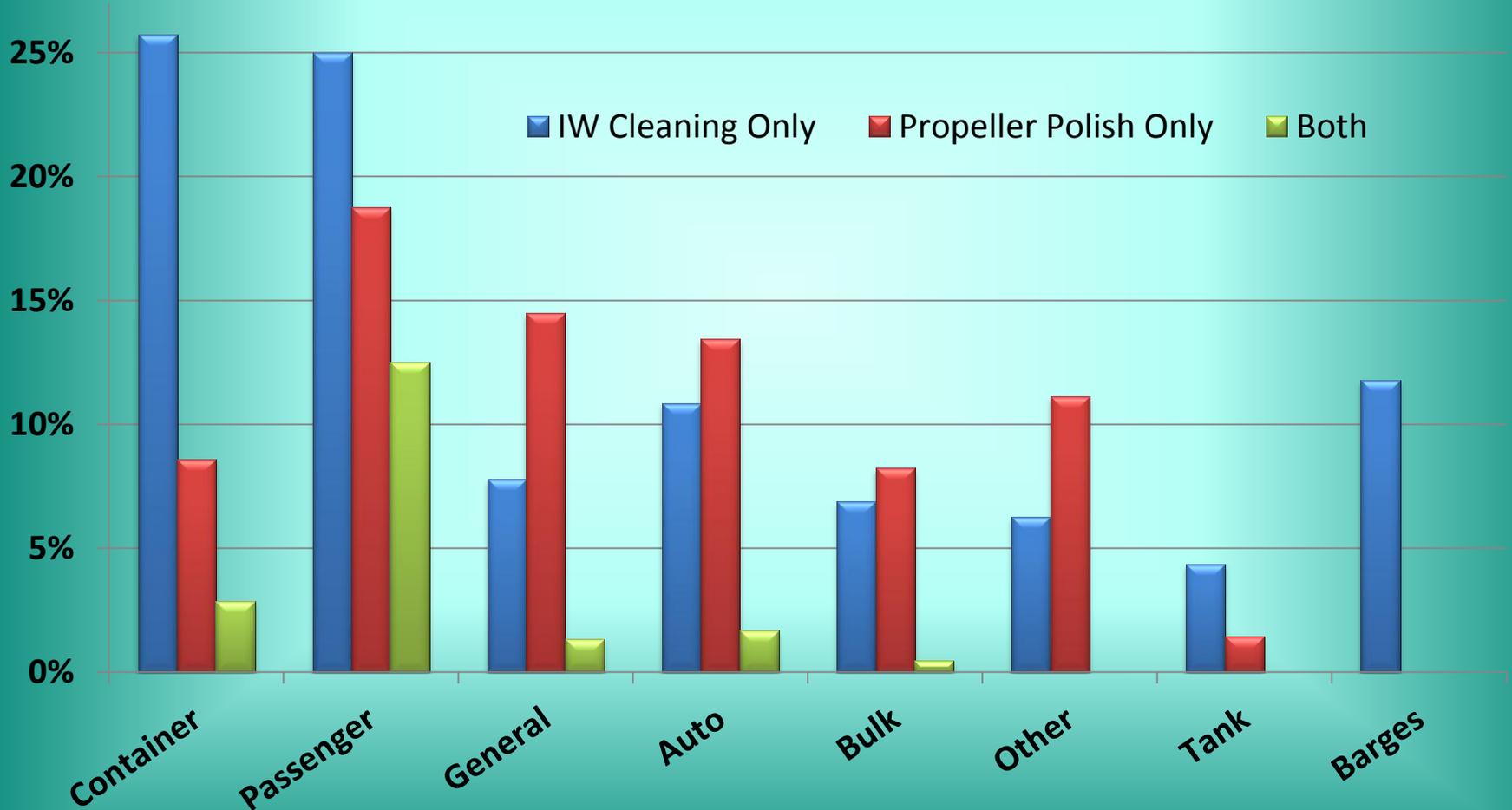


Mean Port Residency (days)





In-Water Cleaning and Propeller Polishing



Interpreting the Results

❖ Data Limitations:

- Data only represents 41% of Oregon fleet (575 vessels out of 1395).
- Representation/returns from bulker fleet particularly low (31%).
- Oregon's merchant fleet is generally well maintained
 - Nearly 83% of vessels had been drydocked for paint application within 3 years of being surveyed.
 - Most vessels had short sedentary periods and entered dry dock within the last three years.
 - Container, auto carriers, and passenger vessels generally present a lower risk (higher travel speeds; shorter residency periods; and MPGS use).
- However,
 - Roughly 50% of the fleet does not employ use of MGPS to control fouling in the sea chest and internal pipe network.
 - Over 4 years since most recent drydock/cleaning/AF paint application for ~6% of the fleet.
 - Bulkers, Barges, General Cargo, and 'others' have below average traveling speeds and/or longer port residency times.

Recommendations

- ❑ **Generally:**
 - *Support efforts to coordinate policy development and support for regulatory consistency.*
 - *Seek guidance and leadership from the scientific community and STAIS Task Force for appropriate next steps and strategies to address bio-fouling pathway concerns in Oregon.*

- ❑ **Update legal instruments to clarify DEQ authority for commercial vessel bio-fouling prevention:**
 - *Specify DEQ authority with ORS 783.620 (Ballast Water Program) for management of commercial vessel bio-fouling.*
 - *Amend reporting requirements to include mandatory annual reporting on maintenance practices and other hull fouling related behaviors.*
 - *Establish regulations that enables DEQ to target management at high-risk vessels.*

- ❑ **Establish and promote BMP's through outreach to vessel operators, including barge operators that may transport equipment between states along the west coast, as well as equipment that may be transferred between ports within the state.**

- ❑ **Encourage research and monitoring efforts to evaluate antifouling coating efficacy and potential tradeoffs between biofouling management strategies and water quality concerns.**



Oregon Ballast Water Program

Looking Forward....

- Increased Staffing Resources
 - April 2012?
 - Increase vessel inspections to >12% of Oregon arrivals
- Expedited Enforcement Options
- VGP 401 Certification



Oregon Ballast Water Management Program

Questions or Comments?

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