

# California's Marine Invasive Species Program

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# 2015 Update on MISP Activities

- ▶ Biennial report to the California Legislature
- ▶ Treatment technology assessment report
- ▶ Funded research
- ▶ Biofouling management regulations – Chris Scianni
- ▶ Enforcement regulations – Chris Brown



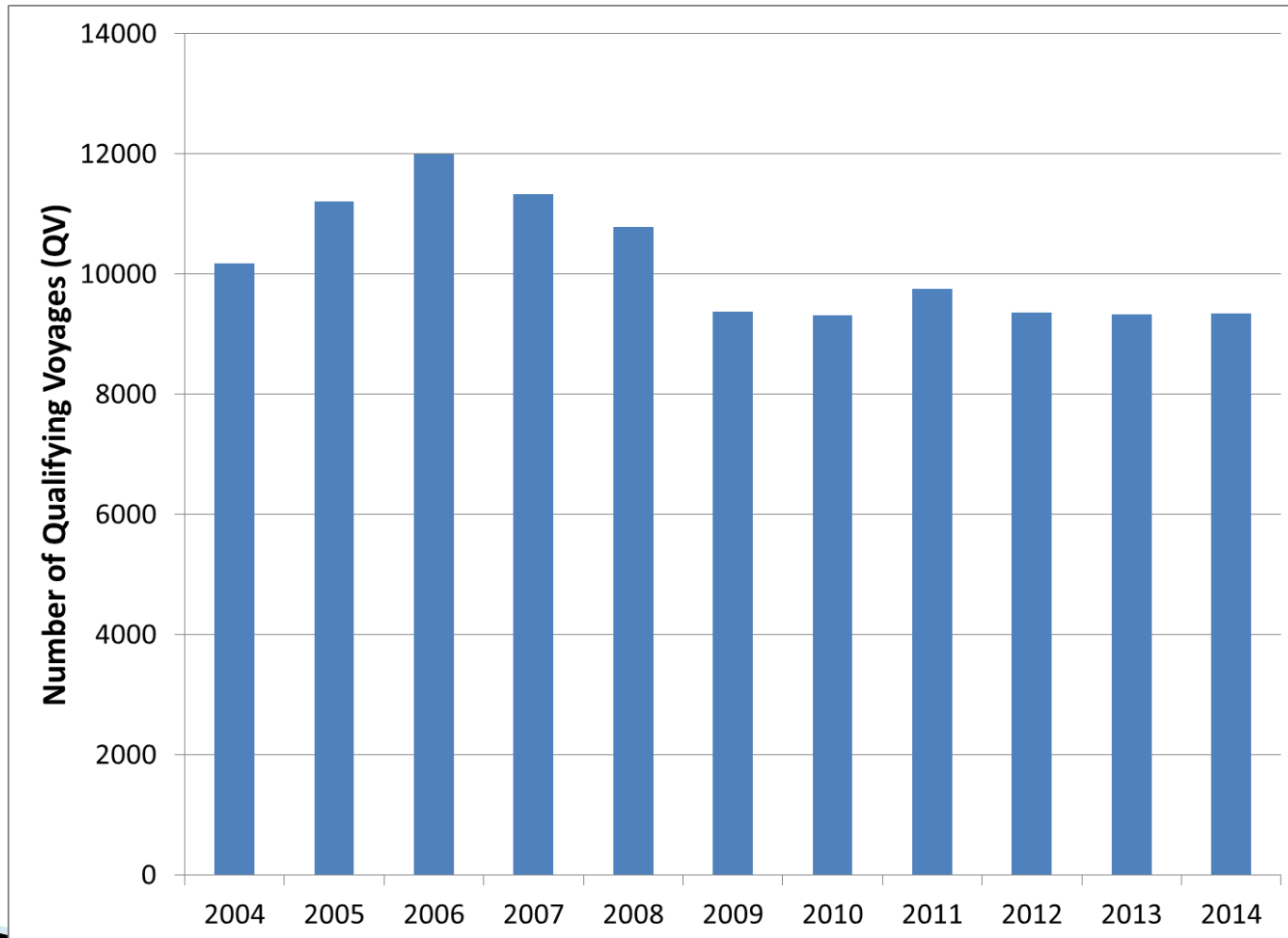
# **2015 Biennial Report on the California Marine Invasive Species Program**



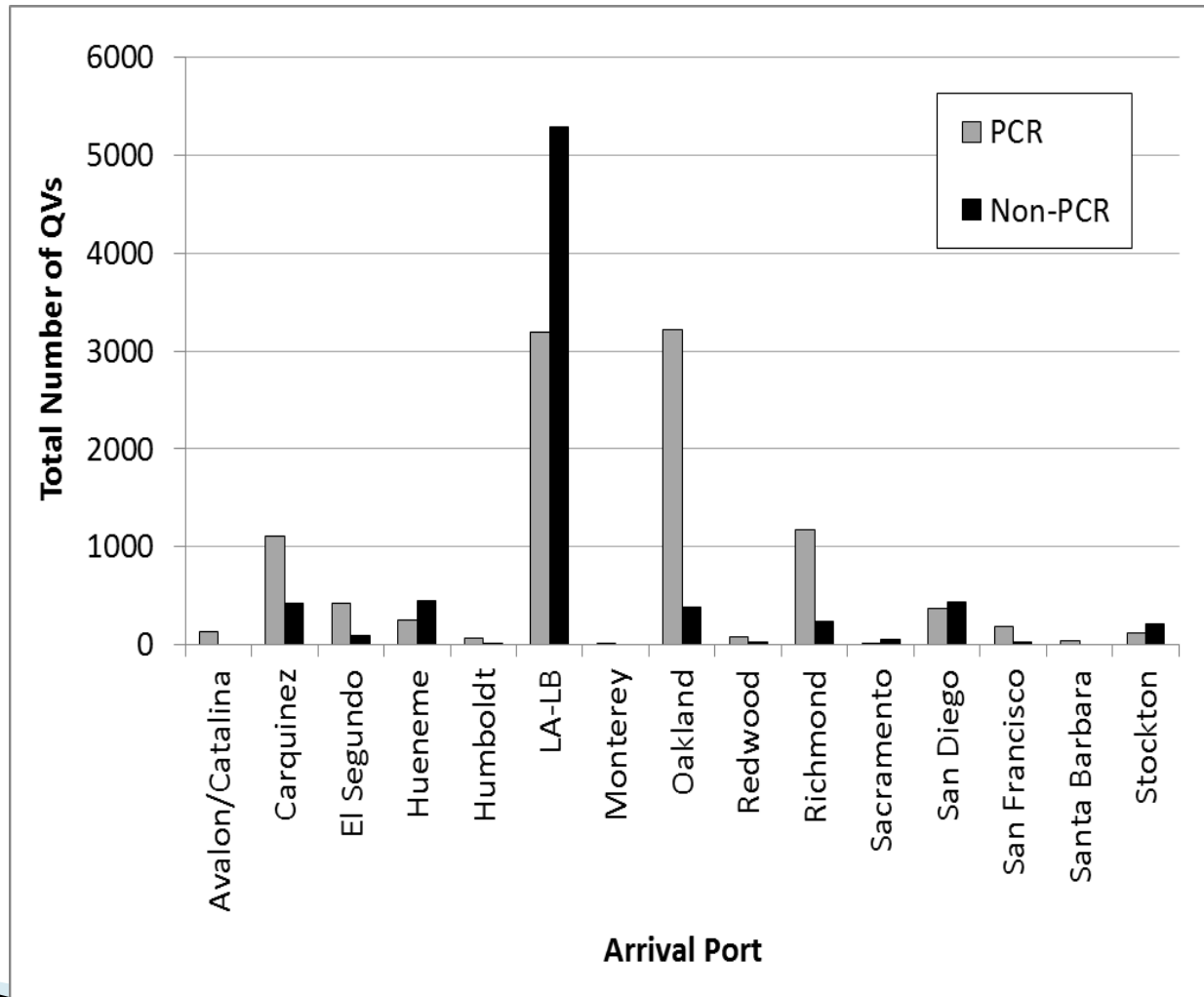
# MISP Biennial Report

- ▶ Two year period July 1, 2012 – June 30, 2014
- ▶ 7<sup>th</sup> biennial report on the MISP
  - Copies at [www.slc.ca.gov](http://www.slc.ca.gov)
- ▶ Contents
  - Origins and overview of the MISP
  - Analysis of vessel arrivals patterns, vessel-reported data on ballast water and biofouling management
  - Inspection and compliance statistics
  - Overview of external and funded research

# Qualifying Arrivals at CA Ports

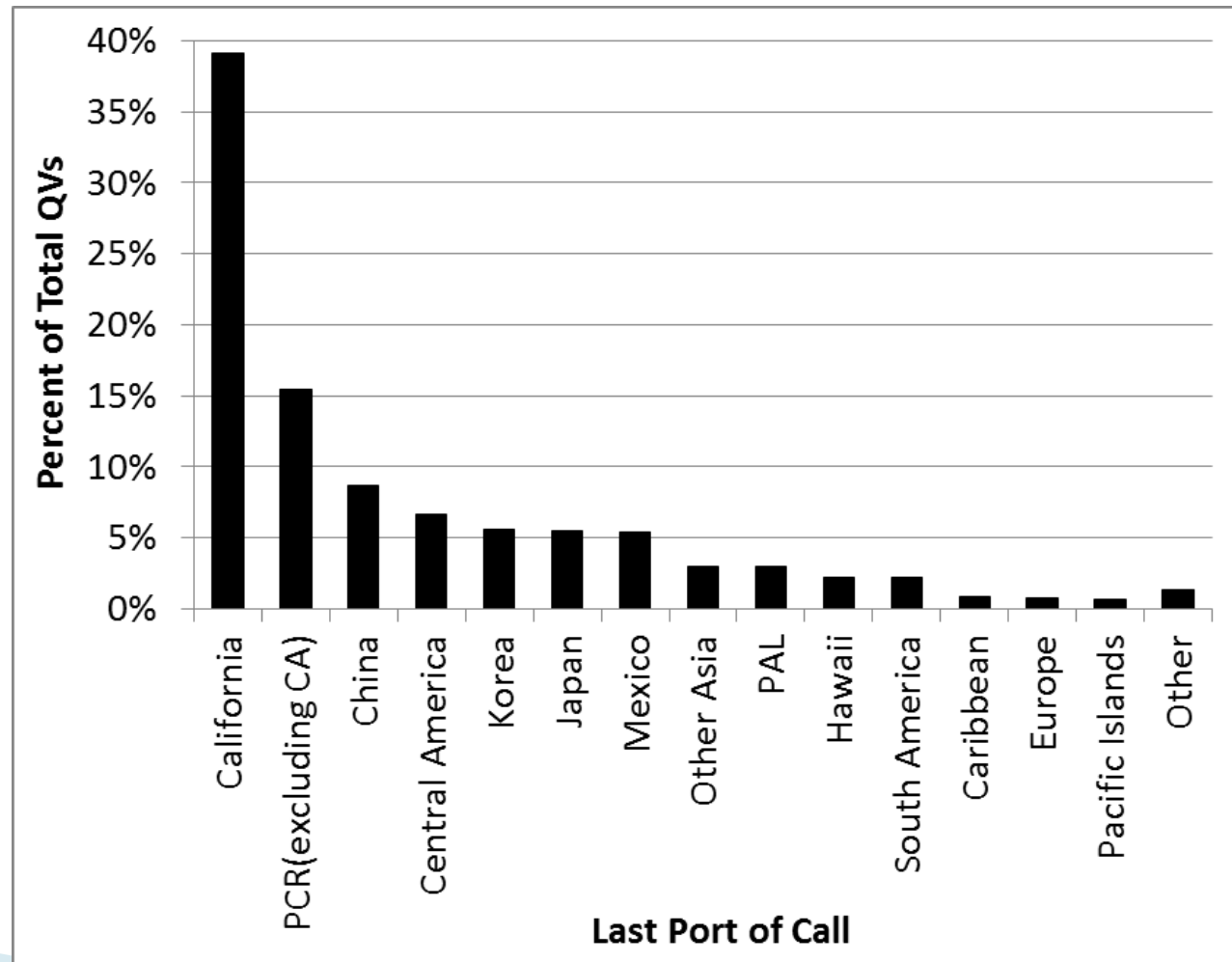


# Arrivals by Port

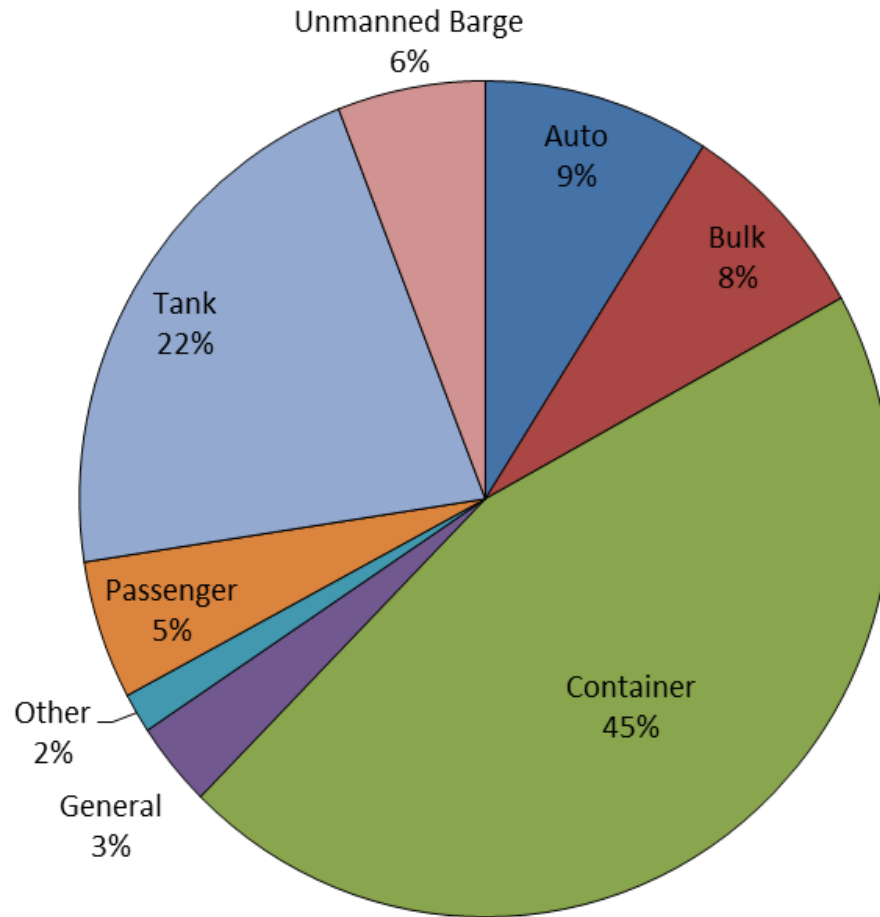




# Last Port of Call

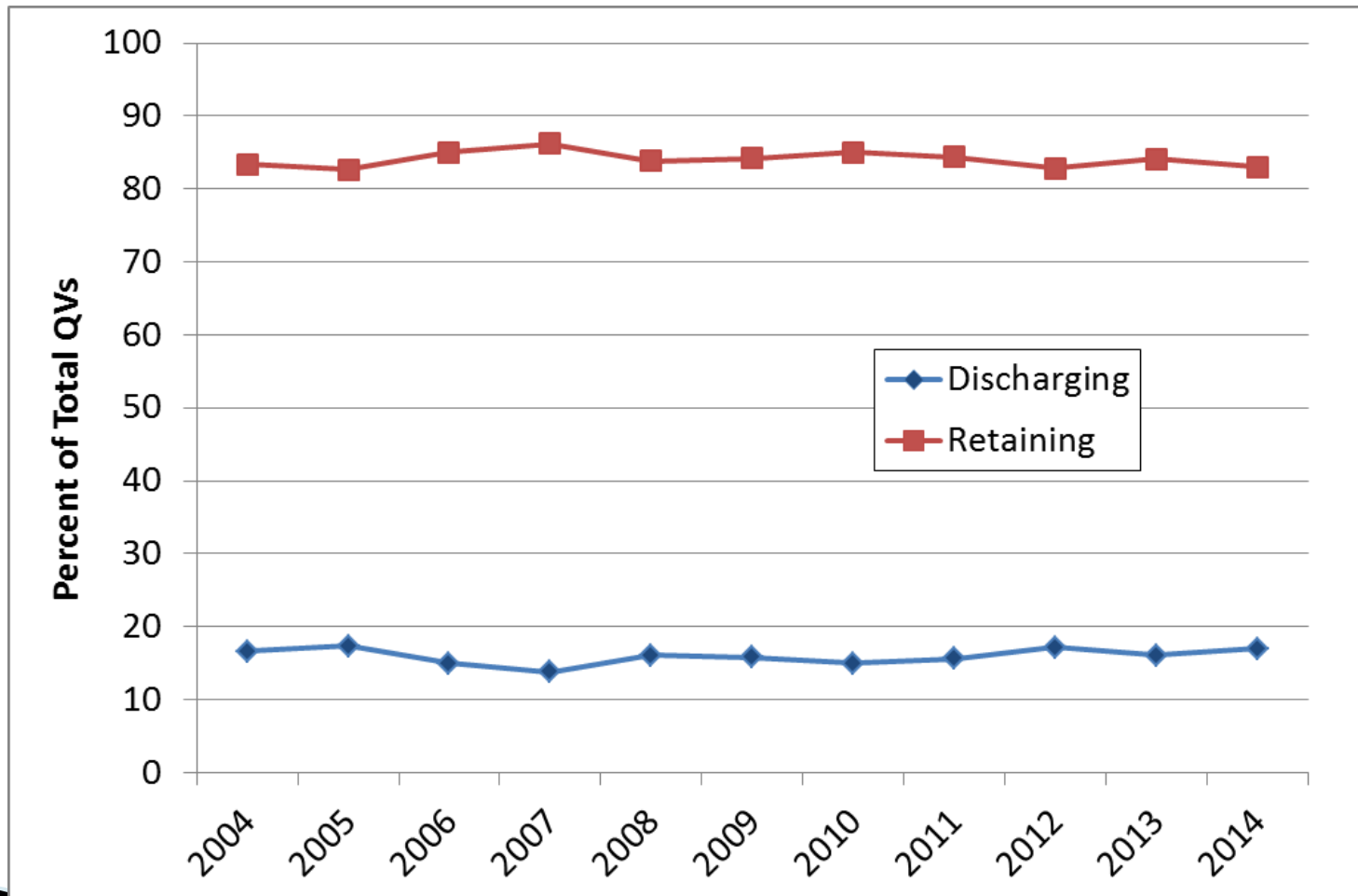


# Arrivals by Vessel Type

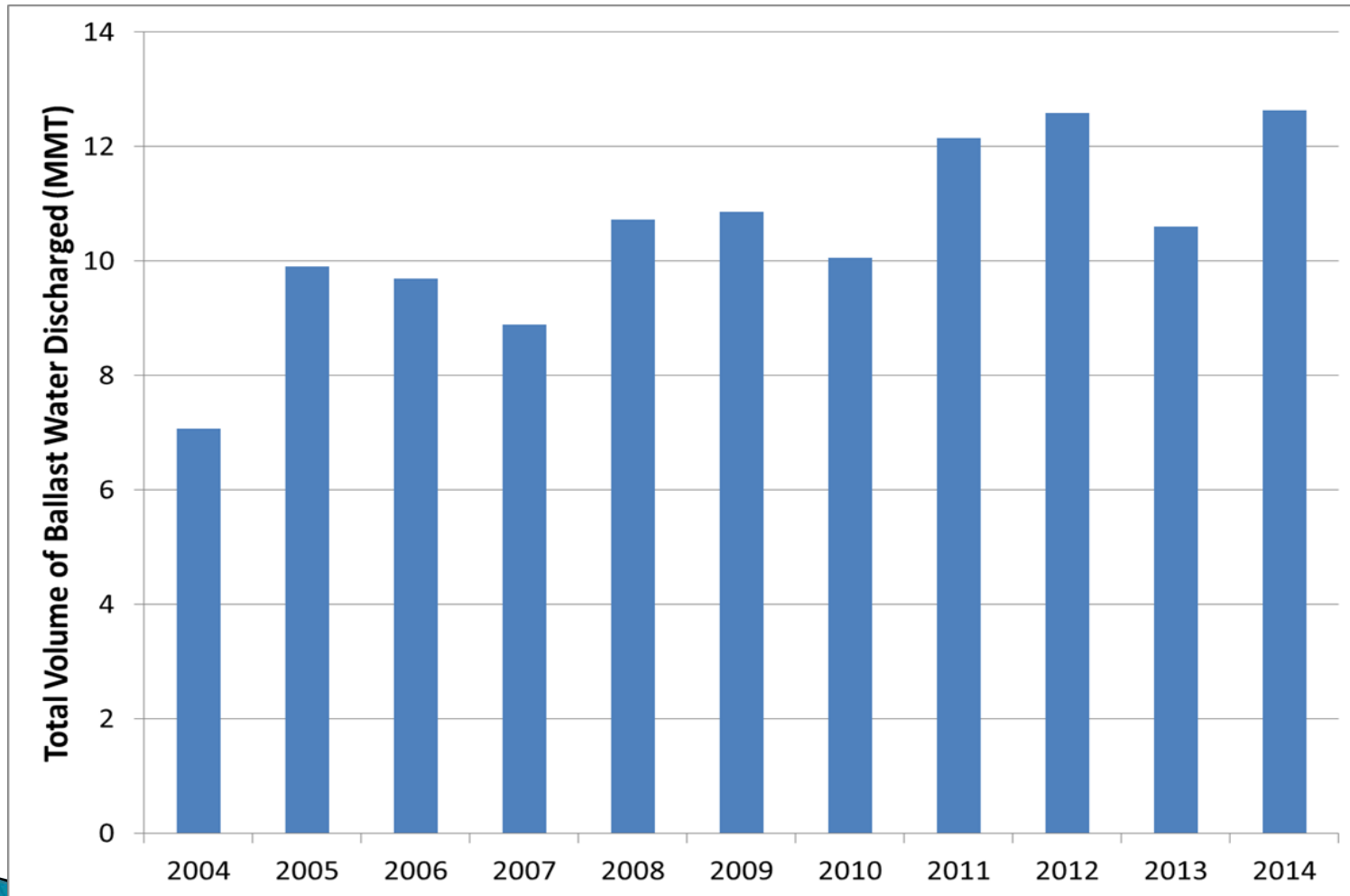




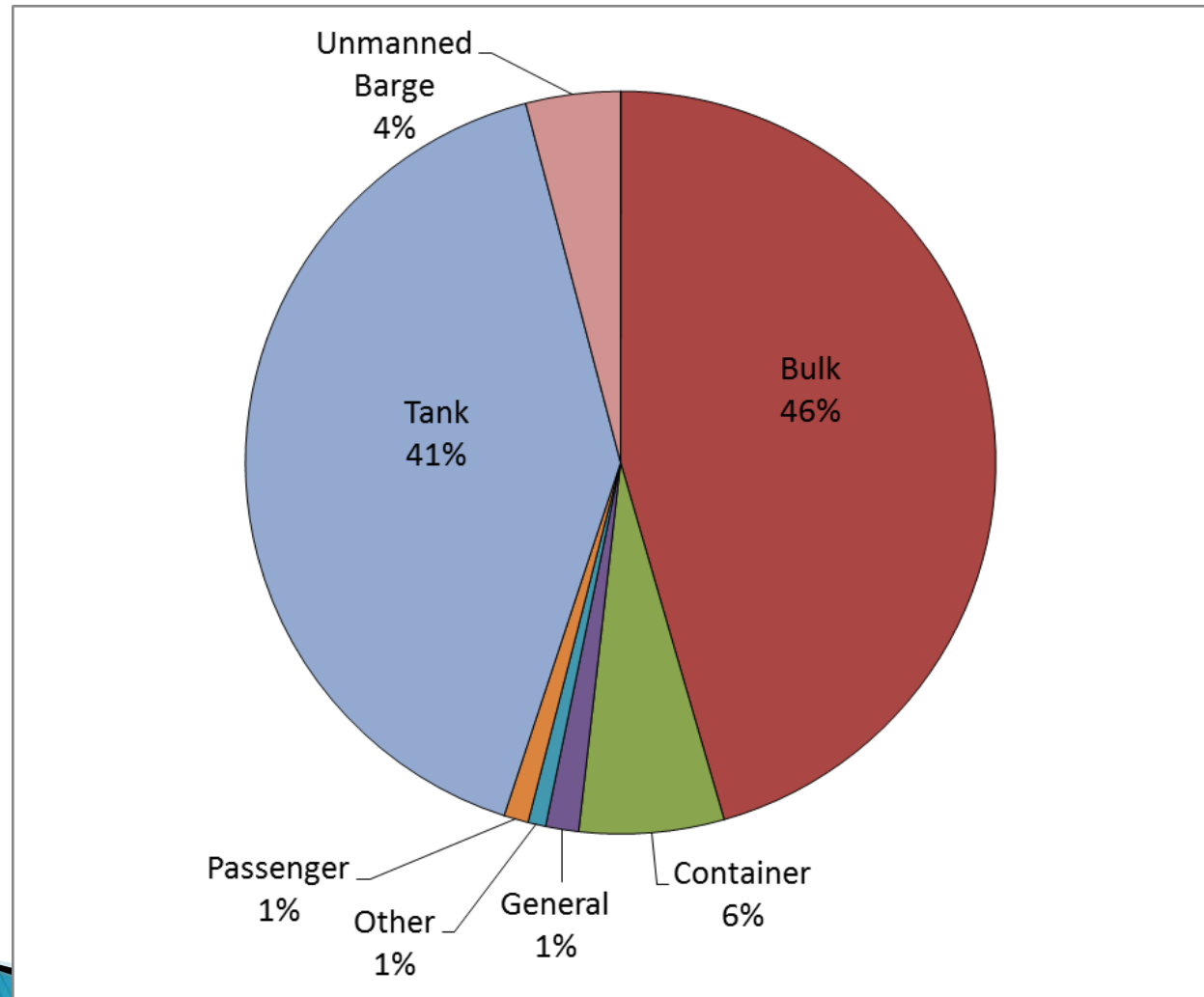
# BW Management



# Volume Discharged Ballast Water



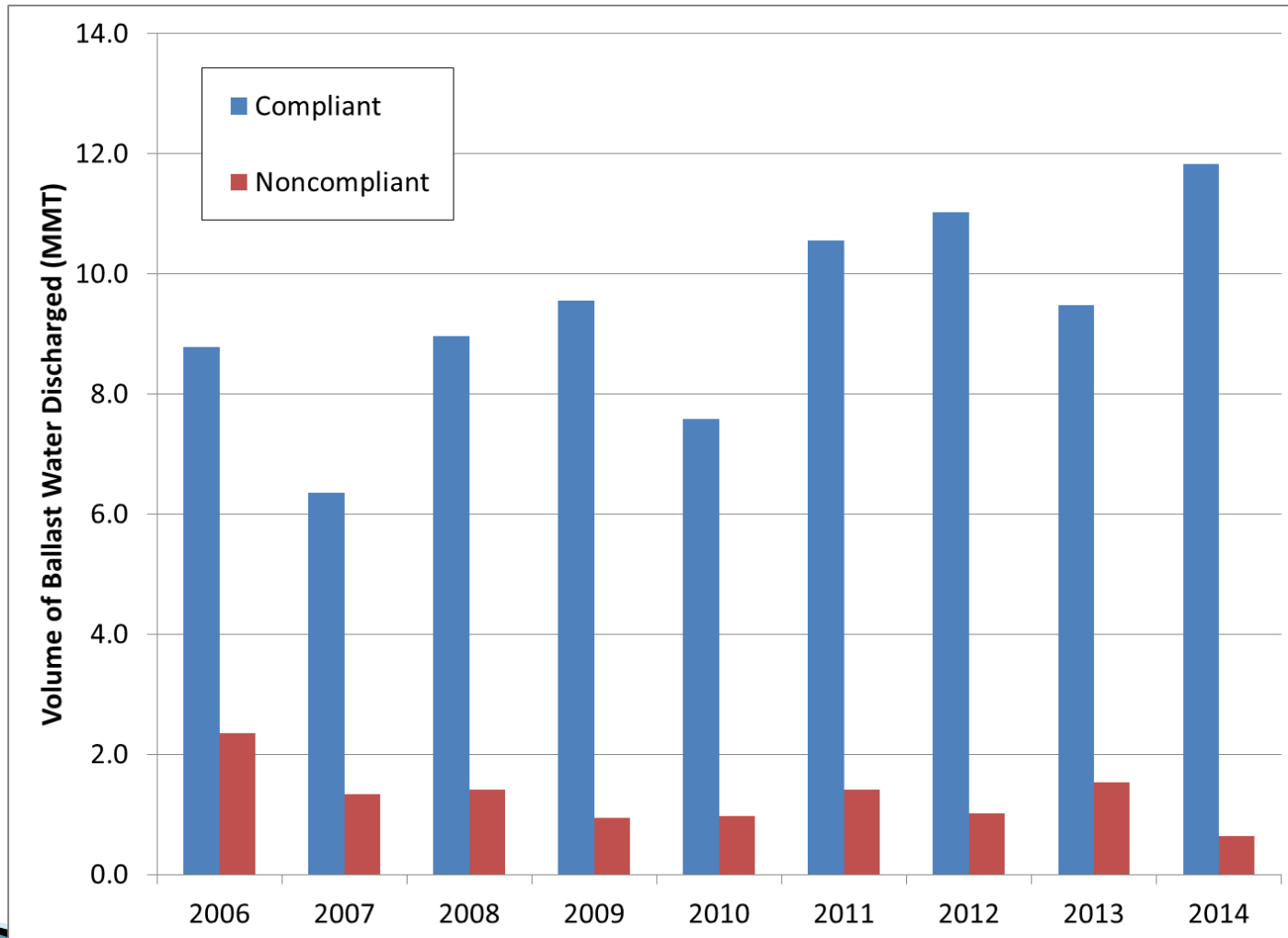
# Discharge Volume by Vessel Type



## Arrivals

Barge 6%  
Bulk 8%  
Container 45%  
Tank 22%

# Compliance of Discharged Ballast

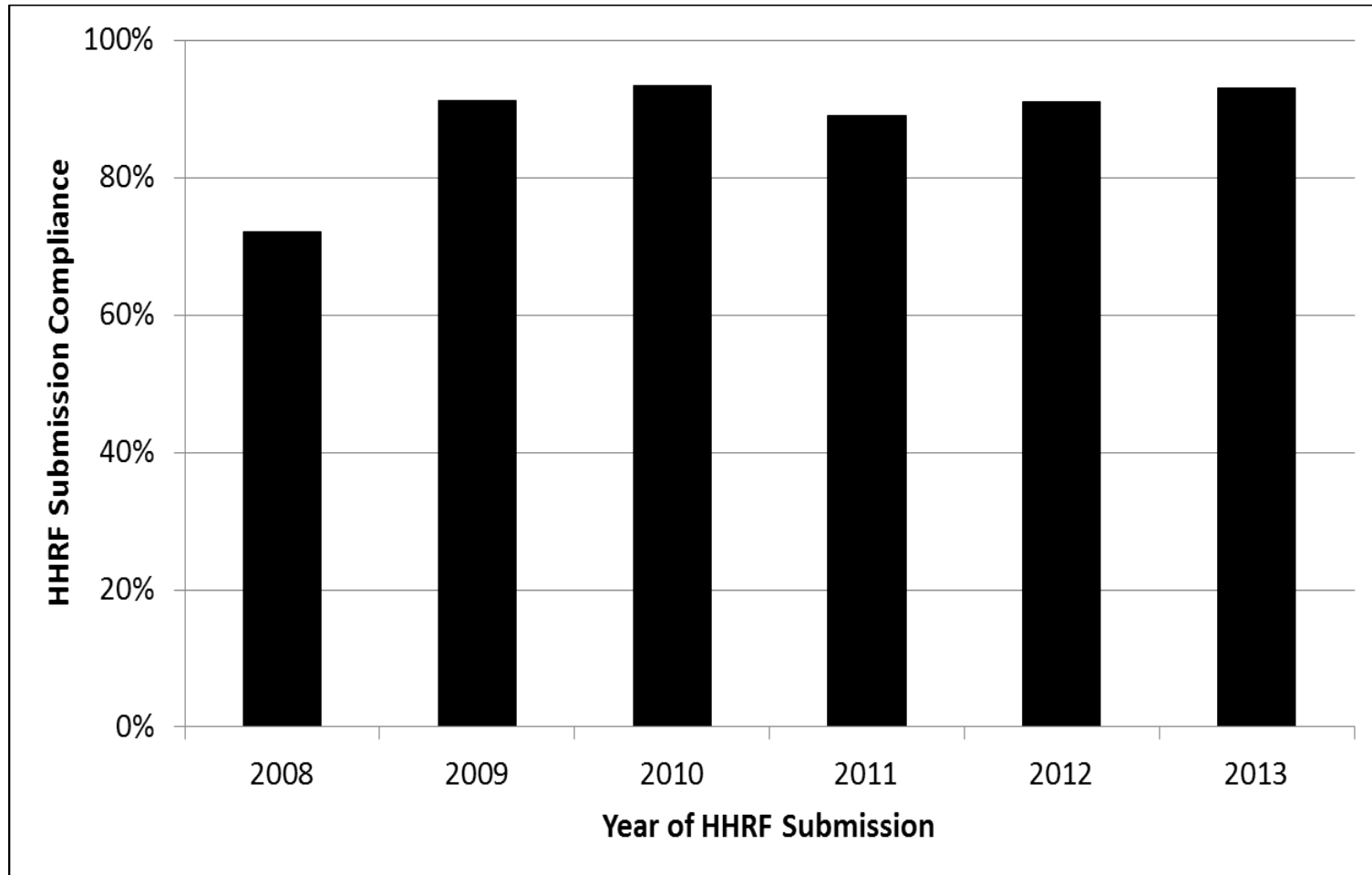


# Vessel Inspections

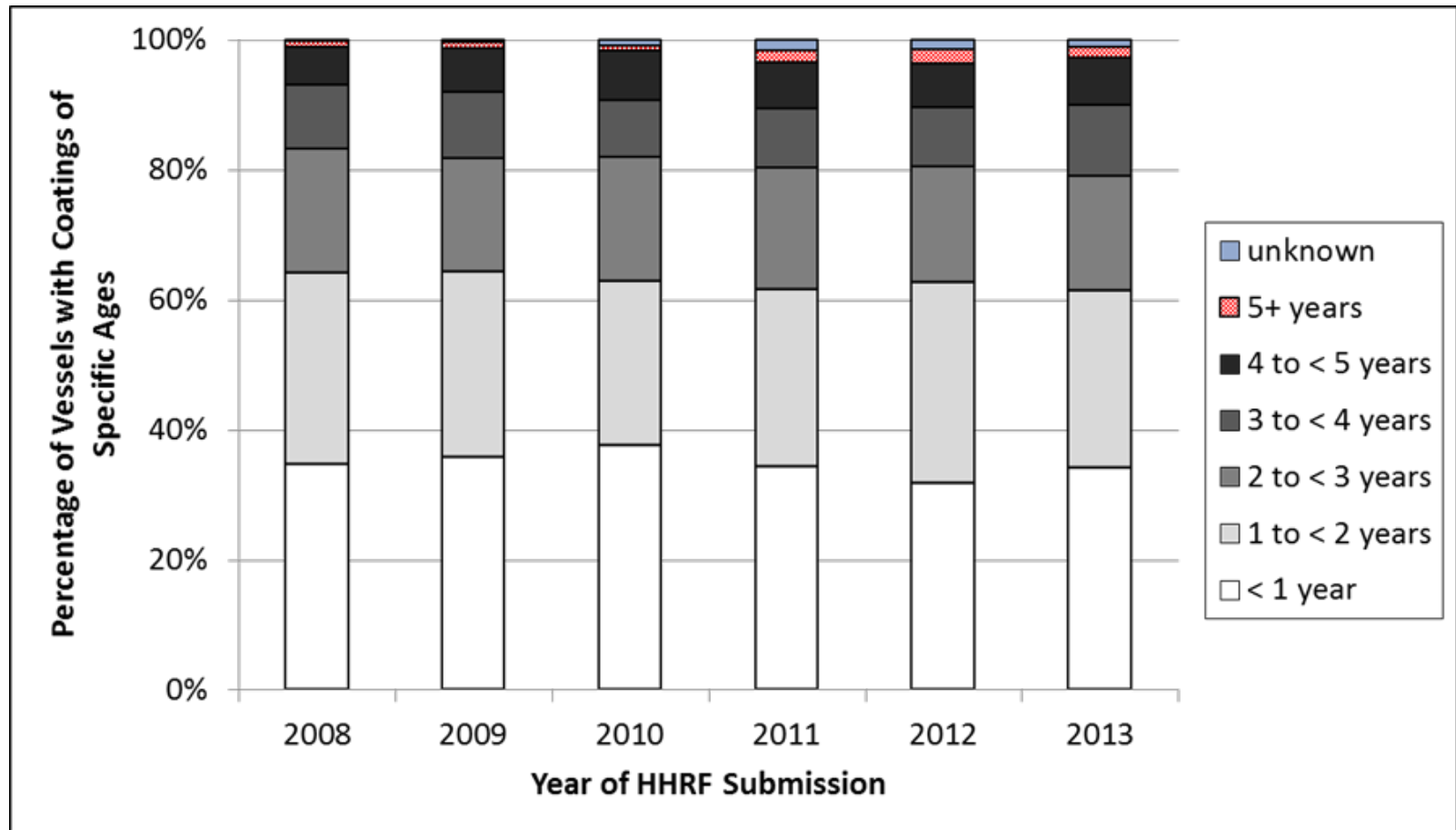
	2012b	2013a	2013b	2014a
Number Qualifying Voyages	4762	4578	4751	4648
Number Inspections	1057	1023	1176	1317
Percent of QVs Inspected	22.2%	22.3%	24.8%	28.3%
<b>Total Violations (Percent of Inspected)</b>	<b>36 (3.4%)</b>	<b>23 (2.2%)</b>	<b>19 (1.6%)</b>	<b>36 (2.7%)</b>
Administrative	19	10	11	22
Operational	17	13	8	14

Mandate = 25%

# HHRF Submission Compliance

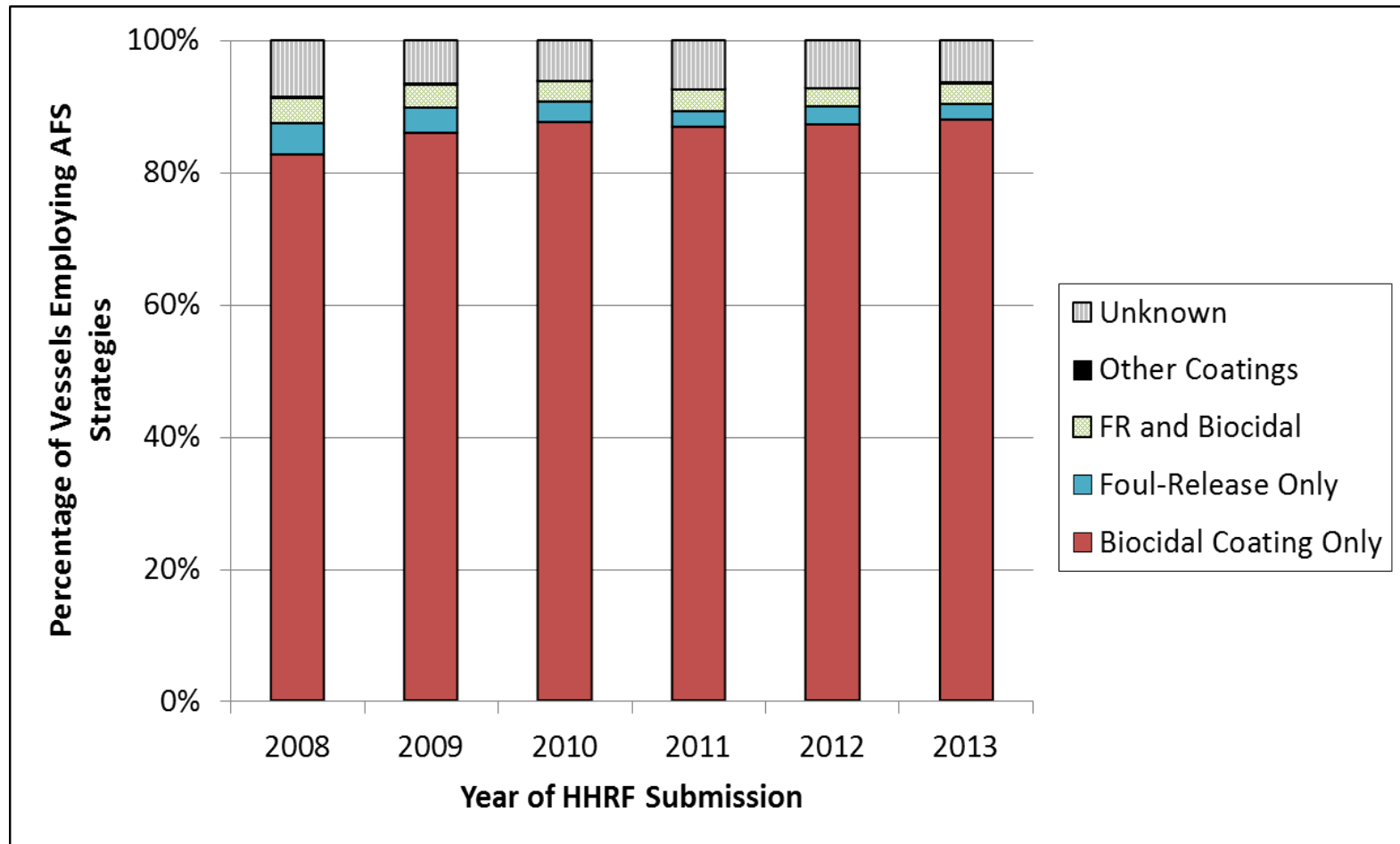


# Age of Antifouling Coatings





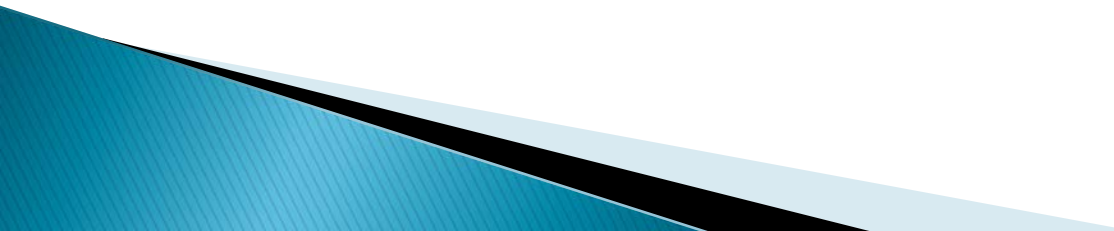
# Antifouling Coating Use



# Use of BW Treatment Technologies

Vessel Type	Treatment Method	2012b	2013a	2013b	2014a
Container	electrochlorination				12,837
Bulk	ultraviolet radiation				6,119
Bulk	ultraviolet radiation				10,066
Passenger	ultraviolet radiation				392
Passenger	ultraviolet radiation			367	
Bulk	electrochlorination				33,296
Bulk	electrochlorination				23,603
Other	biocide	563		2,971	4,928
Passenger	ultraviolet radiation				2,322
Tank	electrochlorination				4,858
Bulk	ultraviolet radiation		6,147		
General	ultraviolet radiation				2,378
<b>Total Volume Discharged (MT)</b>		<b>563</b>	<b>6,147</b>	<b>3,338</b>	<b>100,799</b>

# Next Steps

- ▶ Improve compliance with ballast water management laws
    - Draft Enforcement Regulations
  - ▶ Reduce discharge of “high risk” BW in California
  - ▶ Work towards implementation of BW performance standards
  - ▶ Biofouling management
  - ▶ Track federal bills that could impact Commission authority
- 

# Update Inspection and Compliance Program

- ▶ Reviewing existing inspection protocols for marine safety personnel
  - Safety – confined spaces
  - Re-evaluate priority boarding matrix
  - Consistency of training and operation in field
  - Regulatory landscape increasingly complex
    - Inspectors primary source of outreach to vessels
    - Prepare for biofouling management regulations and implementation of performance standards



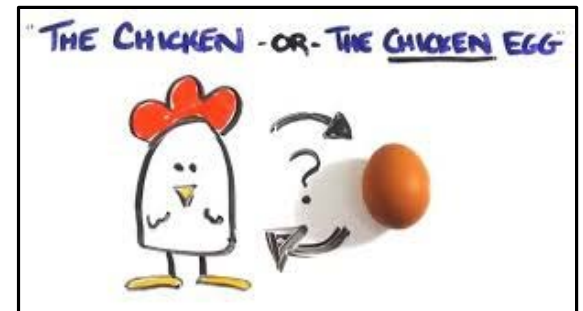
**2014 Assessment of the Efficacy, Availability,  
and Environmental Impacts of Ballast Water  
Treatment Technologies  
for Use in California Waters**

# Conclusions

- ▶ No shipboard treatment system can meet all of the California performance standards
  - Efficacy data does not demonstrate that systems can meet all CA standards (with multiple caveats)
- ▶ No shore-based ballast water treatment facilities in U.S.
  - Commission funded study of feasibility of shore-based ballast water treatment in California (early 2016)

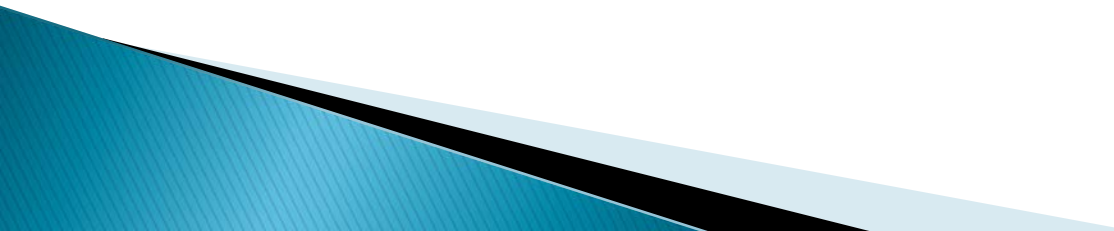
# Challenges

- ▶ Lack of data on in-service operation of treatment systems
  - How to take a sample?
    - Sample tool development with Glosten
- ▶ No USCG type approved systems available
  - CA does not require use of USCG type approved systems, but...
- ▶ Type approval testing (USCG, IMO) does not address CA standards
- ▶ Limits of detection/methods for select standards
  - 10-50, total living bacteria, total living viruses
- ▶ Absence compliance assessment protocols
  - Chicken and egg situation remains





# Assembly Bill 1312

- ▶ Standards remain the same
  - ▶ Proposed change in implementation date to 2020
  - ▶ Extend date for application for use of experiment treatment systems
  - ▶ Additional items
    - Clean-up provisions
    - Biofouling sampling and enforcement authority
    - Move BW management for vessels from LPOC outside of the PCR to regulations
- 



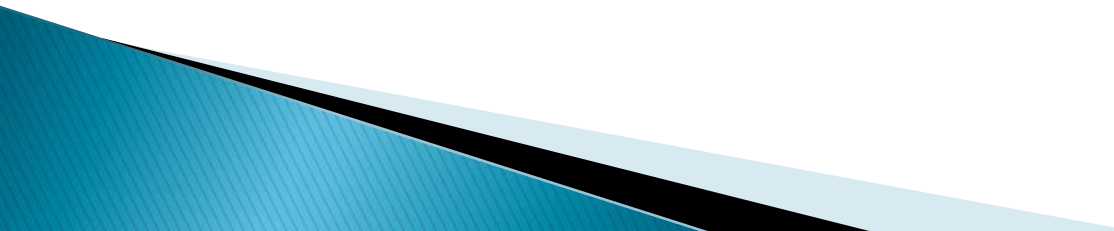
# Research

# Funded Research

- ▶ FDA bulk viability assay
  - Dr. Nick Welschmeyer, Moss Landing Marine Laboratories
- ▶ Shore-based treatment feasibility study
  - Managed by Delta Stewardship Council
  - Expected completion early 2016
- ▶ Ballast Responder
  - Cal Maritime



# Additional Research/Projects

- ▶ Indicative tests of ballast water treatment system performance
  - ▶ Ballast water discharge sampling
  - ▶ Virus identification and enumeration (pending)
  - ▶ Biofouling on ships' waterlines, coatings information
    - CSU COAST intern – summer 2015
  - ▶ Database upgrade
- 



# Questions?

**For more information**

<http://www.slc.ca.gov>

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