Chris Scianni

California State Lands Commission

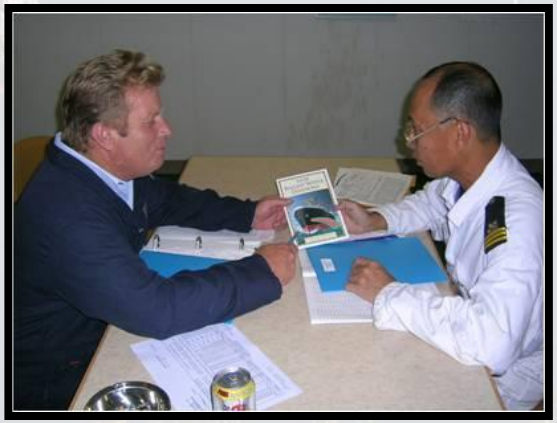
California's Ballast Water Performance Standards

Chris Scianni
California State Lands Commission
June 7, 2012 – Oakland, CA
BPC Ballast Water Briefing

California's BW Performance Standards

- Adopted by CA Legislature in 2006
  - Coastal Ecosystems Protection Act of 2006

- CSLC role is to implement the law, provide outreach and inspect to ensure compliance



IMO & CA Standards Comparison

Organism Size Class	IMO standard	CA standard	IMO:CA ratio
> 50 µm	<10 /m3	no detectable living organisms	not comparable
10-50 µm	<10 /ml	<0.01 /ml	1000
bacteria	--------	<1000 /100ml	not comparable
E. coli	<250 cfu /100ml	<126 cfu /100ml	2
intestinal enterococci	<100 cfu /100ml	<33 cfu /100ml	3
toxicogenic *Vibrio cholerae*	<1 cfu /100ml	<1 cfu /100ml	1
viruses	--------	<10000 /100ml	not comparable

CA Role in Regional NIS Introductions

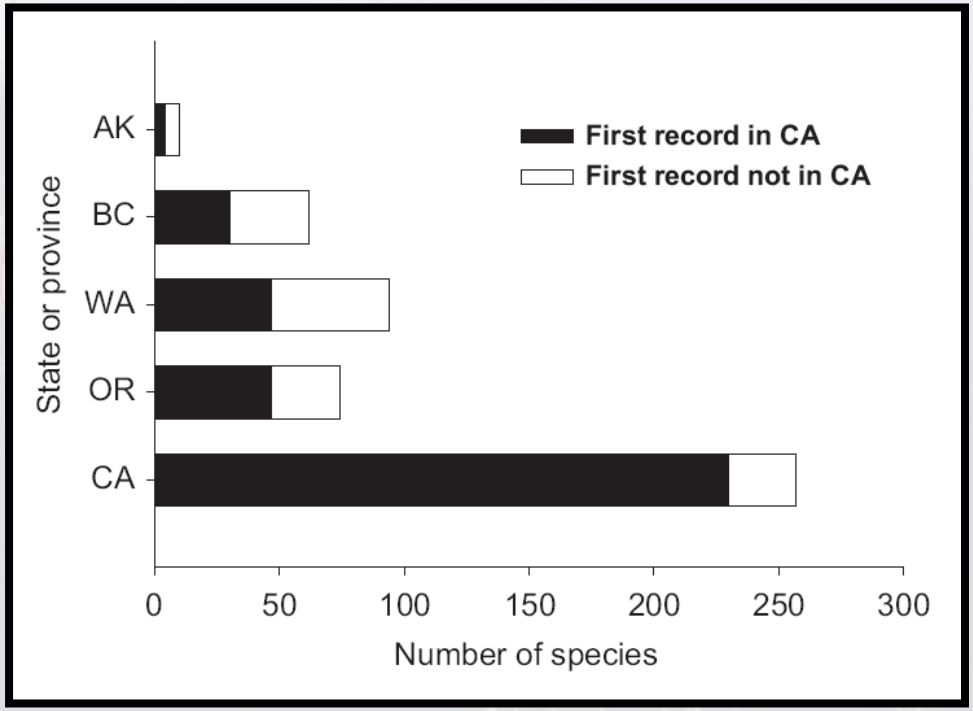
Diversity and Distributions, (Diversity Distrib.) (2011) **17**, 362–373

BIODIVERSITY RESEARCH

Marine invasion history and vector analysis of California: a hotspot for western North America

Gregory M. Ruiz[1,2]*, Paul W. Fofonoff[1], Brian Steves[1,2], Stephen F. Foss[3] and Sharon N. Shiba[3]

- 48-81% of CA's 257 established NIS were shipping-mediated
- 89% of west coast NIS occur in CA
- 79% of west coast NIS first recorded in CA



Eugene Bromley

EPA-Region 9

Ballast Water Regulation under the EPA Vessel General Permit (VGP)

Bay Planning Coalition
Ballast Water Briefing
June 7, 2012

Eugene Bromley

EPA Region 9

VGP Overview

- Existing VGP:
  - First issued in December 2008
  - Expires December 2013
- Reissuance proposed December 2011
  - VGP for vessels 79 feet or greater
  - Small VGP (sVGP) for vessels less than 79 feet
  - New ballast water requirements
- Reissuance by November 2012
- New permits take effect in December 2013

Ballast Water Requirements of the 2008 VGP

- Incorporated Coast Guard management requirements and mid-ocean exchange requirements
- Pacific nearshore voyages must conduct exchange more than 50 nm from shore

- Mandatory salt water flushing for vessels with residual ballast water and sediment

Ballast Water Studies

- EPA's Science Advisory Board (SAB) (July 2011); assessed status of ballast water treatment technology in meeting different discharge standards; conclusions:
  - International Maritime Organization (IMO) D-2 standard is achievable now
  - Standard more stringent than IMO not practical at this time – issues of detection/quantification below IMO
- National Academy of Sciences (NAS) (June 2011); assessed risks of invasive species from ballast water discharges as a function of organism concentration; conclusions:
  - IMO standard is an improvement over mid-ocean exchange but existing data do not allow a clear answer of what a safe concentration would be.
  - Provides suggestions for further studies to answer the question

Ballast Water Numeric Limits 2011 Proposed VGP

- Numeric limits equal to IMO standards (same as US Coast Guard Phase I limits)

Large organisms (>50 microns)	Small organisms (>10 and ≤50 microns)	Toxigenic Vibrio Cholerae	E. Coli	Intestinal Enterococci
<10 per m^3	<10 per ml	<1 cfu/100 ml	<250 cfu/100 ml	<100 cfu/100 ml

Numeric Ballast Water Requirements - Applicability

- Proposed VGP – numeric limits apply to all vessels except:
  - Oceangoing and inland vessels with less than 8 m^3 ballast capacity
  - Unmanned, unpowered barges
  - Vessels engaged only in "short" distance voyages (less than 10 nm) or staying in one Coast Guard "Captain of the Port" (COTP) zone
  - Confined "lakers" (vessels staying within the Great Lakes)
- Coast Guard regulations of March 2012
  - Oceangoing and coastal vessels traveling thru more than one COTP zone and are greater than 3,000 gross tons
- BMP requirements (similar to the 2008 VGP) would apply to vessels not subject to numeric limits.

Implementation Schedule

	Proposed VGP	Final Coast Guard Rule
New Builds	Vessels newly built as of January 2012 must meet limits on VPG effective date which will be December 2013	Vessels newly built as of December 1, 2013 must comply on delivery date
Existing vessels with ballast capacity of 1500 to 5000 m^3	1st scheduled drydocking after 2014	1st scheduled drydocking after 2014
Existing vessels with ballast capacity greater than 5000 m^3 or less than 1500 m3	1st scheduled drydocking after 2016	1st scheduled drydocking after 2016

Ballast Water Compliance Options -VGP

- Use a treatment device
- Onshore treatment
- Use potable water (U.S. and Canada only)
- No discharge

Monitoring Requirements

- Monitoring requirements if using a treatment device
  - Functional – test the system for proper operation (once/month)
  - Biological – E. Coli, enterococci and total heterotrophic bacteria (2 to 4 tests/year)
  - Active substance and residuals (for systems that use them), e.g. chlorine, ozone, peracetic acid (2 to 4 tests/year)
- Lower monitoring frequencies for a device with "high" quality type approval

Resources

- EPA's national VGP website:
  http://cfpub.epa.gov/npdes/vessels/vgpermit.cfm

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Steve Moore

State Water Resources Control Board

CA State Water Board / Ballast Water

* 1998 – CWA Sec. 303(d) list of Impaired Water Bodies,
  * SF Bay-Estuary Segments listed for "Exotic Species"
* 1999 – SWRCB – consultative role to CSLC on **Ballast Water**
* 2000 – SF Regional Water Board TMDL Analysis
* 2003 - Marine Invasive Species Act – role reauthorized
* 2008 – US EPA's Vessel General Permit (VGP)
  * CWA Sec. 401 Water Quality Certification by State Water Board (February 2009) incorporated into requirements
* 2011 – Statewide Ocean Plan updated Vessel Discharge Regulations (CSLC/US EPA) including **Ballast Water**
* 2013 – US EPA's VGP Reauthorization
  * Water Quality Certification by State Water Board

Lisa Swanson

Matson Navigation

Ballast Treatment Experience

- August 2000 - West Coast Regional Applied Ballast Management Research and Demonstration Project
- 2004 - Partnership with CSLC and Ecochlor, Inc. to demonstrate a chlorine dioxide treatment system onboard the bulk carrier *Moku Pahu*.
- 2008 - *Moku Pahu* becomes 1 of first 3 vessels approved under the USCG Shipboard Technology Evaluation Program (STEP)
- Newer containerships use fresh water ballast

Industry Perspective on Ballast Water Regulations

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- Advocate for uniform international standards
- 2005 California Advisory Panel on Ballast Water Performance Standards: Minority report issued by 3 industry members recommended alignment with IMO and USCG standards
- Approximately 84% of vessel arrivals comply with California's requirements by retaining ballast water on board
- Vessels and company operations vary significantly and regulations should offer flexibility
- Adoption of USCG regulations will bring much needed consistency
- Will need to see how quickly and efficiently the technology certification program can be implemented

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Q&A

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