

From Paper to Policy Implementing California's Marine Invasive Species Act



December 2, 2009

California State Lands Commission

AIS Vector Management: A Prevention Solution Workshop

Marine Invasive Species Act

Legislative History

California Ballast Water Management for Control of Nonindigenous Species Act (1999)

- Ballast water management – Arrivals outside the EEZ
- Ballast water reporting
- Exempted tankers in domestic trade

Marine Invasive Species Act (2003)

- Reauthorization/renewal
- Recommend performance standards
- Recommendations for other commercial vessel mechanisms
- Ballast water management for arrivals from Pacific Coast Region
- Removed tanker exemption



Marine Invasive Species Act Legislative History Continued

Ecosystem Protection Act (2006)

- Implementation of performance standards
- Assess ballast water treatment technologies

Assembly Bill 740 (2007)

- Requires “regular” removal of fouling
- Submission of Hull Husbandry Reporting Form
- Recommend management in 2012

Assembly Bill 1781 (2008)

- Alters implementation date for standards

Assembly Bill 248 (2009)

- Reporting and record keeping related to treatment systems



Components of the CSLC's Marine Invasive Species Program

Program Management

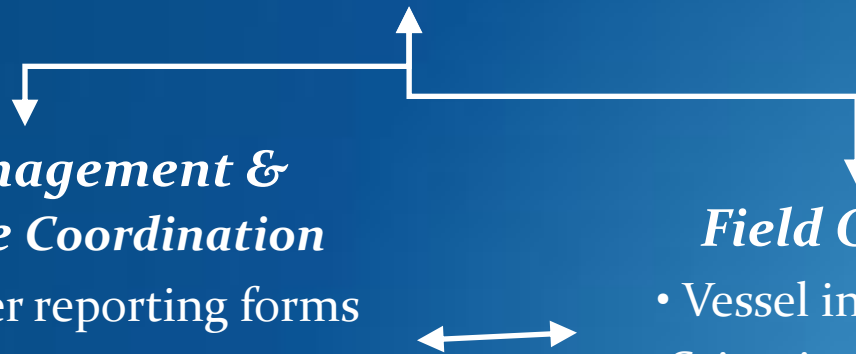
- Policy development
- Stakeholder coordination (regulators, scientists, sister agencies, environmental organizations, etc...)
 - Technical Advisory Group facilitation
 - Support Research
 - Outreach

Data Management & Field Office Coordination

- Ballast water reporting forms
- Field office coordination
- Vessel & agent point of contact
 - Outreach

Field Offices

- Vessel inspections
- Scientist facilitation
 - Outreach



MISA Laws and Regulations

Apply To Vessels

- 300 GRT or larger
- Capable of carrying ballast
- Operating in California waters

Exempted Vessels

- Armed forces
- Innocent passage

General Requirements

- Ballast Water Management
- Ballast water reporting form submission
- Recordkeeping
- Fouling Removal
- Hull Husbandry Reporting
- Fee



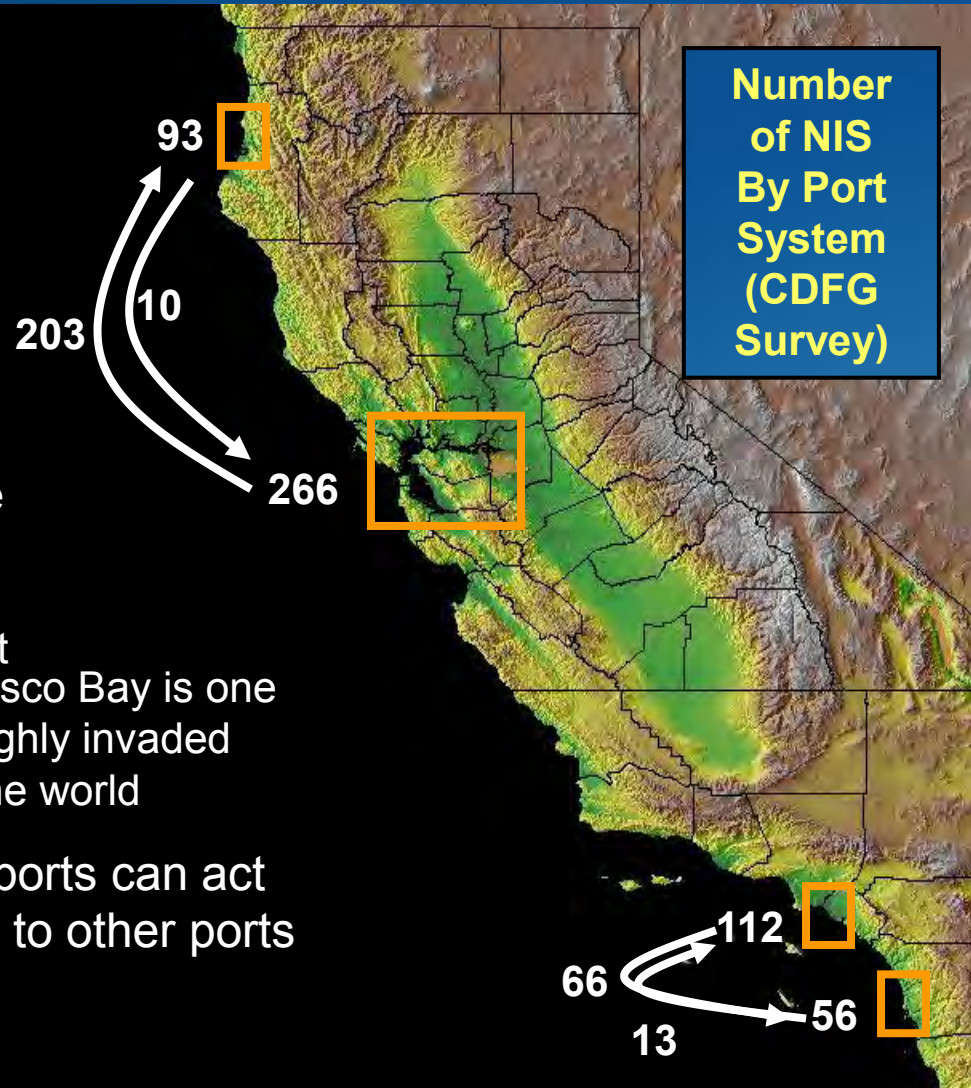
Developing Coastal Exchange Regulations

Why The Concern?

- ❖ Shorter voyages = better survival (more organisms in better condition)

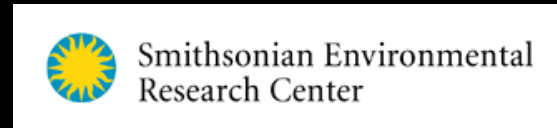
- ❖ Established organisms can survive under local conditions

- ❖ “Hop-Scotch” effect
 - San Francisco Bay is one of the most highly invaded estuaries of the world
 - Invaded ports can act as “sources” to other ports

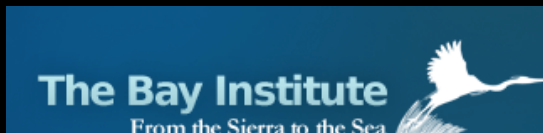


Technical Advisory Group/Panel

State • Federal • Academic/Research • Shipping Industry



BISHOP MUSEUM



California Environmental Protection Agency
STATE WATER RESOURCES CONTROL BOARD

Technical Advisory Panel

Information Sharing

Workshop #1 March 2002

Presentations:

Participants included physical oceanographers. Participants compiled information on physical oceanography of west Coast

Product:

Draft Report

Development of Key Considerations

Workshop #2 January 2003

Presentations:

Physical Oceanography
Marine Biology
Biological surveys
Maritime Industry Practices

Discussion:

Identify consensus points

Recommendation Development

TAG meeting July 2004

Discussion:

Coastwise transport of ballast water significant threat.
Program should be a uniform regional program and consistent with federal and international regulations
Interim program should move forward.
Panel recommendations

Public Meeting April 2005

Regulations based on TAG recommendations adopted.

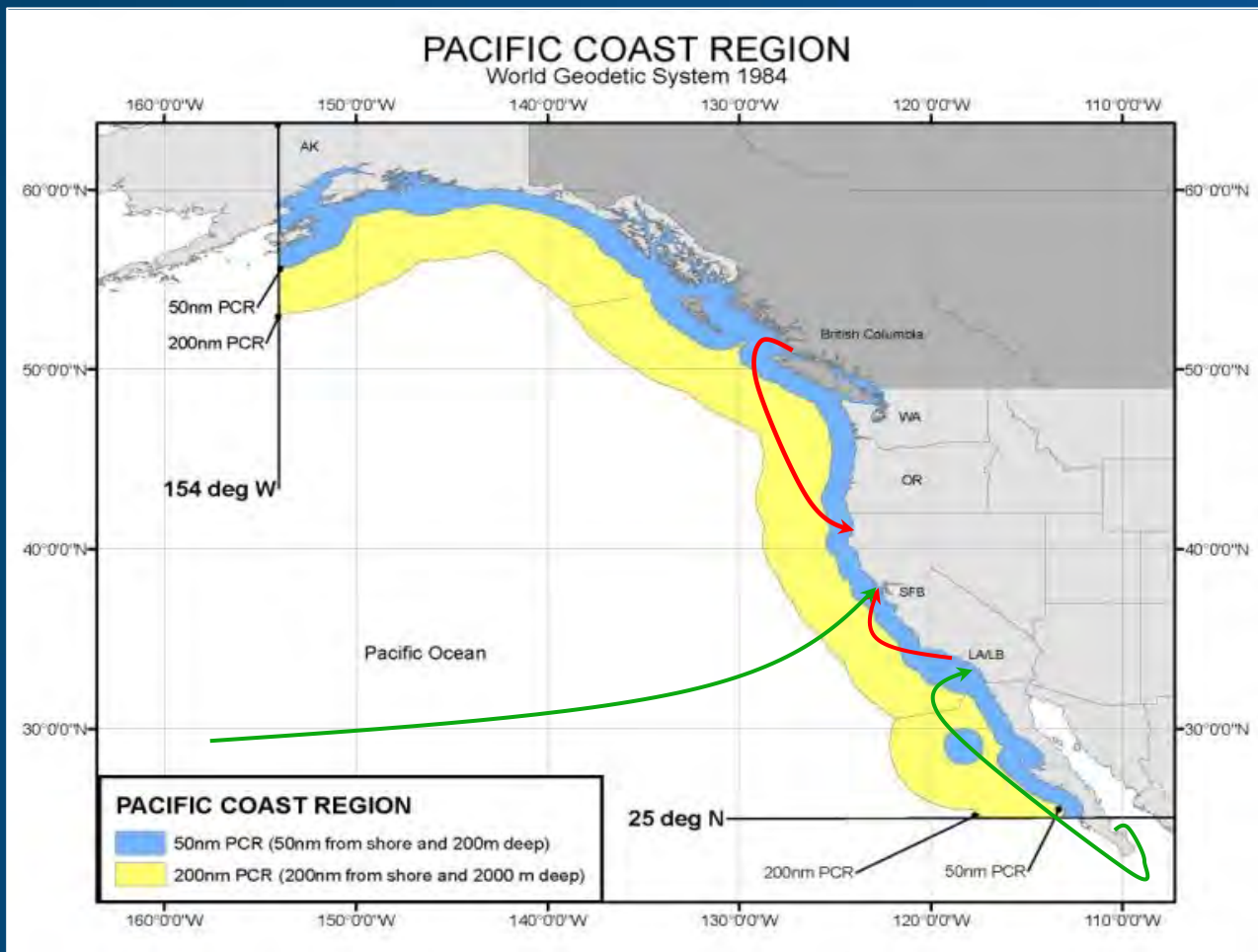
Current BW Exchange Requirements

Rationale: Flushes coastal organisms

Legal exchange distance from shore depends on:

- LPOC (in/out of Pacific Coast Region)
- Origin of ballast water

Pacific Coast Region (PCR):
East of 154° W and north of 25° N



Developing Performance Standards

Why?

- Variable efficacy of exchange
- Safety
- Deviation & delay
- Slow advancement of technologies



Mandates

- Protect beneficial uses of affected waters
- Consult with USCG, Water Board, Technical Advisory Panel
- Best available technology economically achievable

Technical Advisory Panel

**Information
Sharing**

**Development of
Key Considerations**

**Recommendation
Development**

**Meeting #1
March 7, 2005**

Introductions

Orientation to Panel requirements as per P.R.C.

Discussion:

Panel information needs

**Meeting #2
April 27, 2005**

Presentations:

Ballast water data

R&D treatment technologies

Invasion rate theories

Water quality regulatory frameworks

Discussion:

Preliminary key considerations

**Meeting #3
June 22, 2005**

Discussion:

Prototype ballast treatment technologies

Economic considerations

Data on exchanged and unexchanged ballast water

Performance standards of other programs: Rationale

**Meeting #4
July 13, 2005**

Discussion:

Performance standards & implementation schedules of other programs: Suitability for CA

Economic considerations

Invasion rate theories

Framework for CA performance standards

**Meeting #5
August 8, 2005**

Discussion:

Standards and implementation schedule for CA

Panel recommendations

CA's Performance Standards (for BW Discharge)

What are they?

Numerical limits on the number of organisms that may be released in a volume of discharged ballast water

Why implement them?

- Ballast water exchange is variable
- Better protection

When do they go into effect?

It depends on..

- If the vessel is newly built or existing
- Ballast water capacity of the vessel

Organism Size Class	California's Standards
Greater than 50 microns	No detectable living organisms
10 – 50 microns	< 0.01 living organisms per ml
Smaller than 10 microns	< 10 ³ bacteria/100 ml < 10 ⁴ viruses/100 ml
<i>Escherichia coli</i>	< 126 cfu ³ /100 ml
Intestinal enterococci	< 33 cfu/100 ml
Toxicogenic <i>Vibrio cholerae</i> (O1 & O139)	< 1cfu/100 ml or < 1cfu/gram wet weight zoological samples

Ballast Water Capacity	Implementation date for new vessels	Implementation date for existing vessels
< 1500 MT	2010	2016
1500 – 5000 MT	2010	2014
> 5000 MT	2012	2016

Funded Technology Development Projects

CSLC-Princess Cruise

Installation of treatment technology on Sea Princess - completed



CSLC-Matson Navigation I

Installation of treatment technology on the R.J. Pfeiffer - completed



CSLC - Matson Navigation II

Installation of treatment technology on the ITB Moku Pahu



CSLC - APL

Installation of treatment technology onboard the APL England



CSLC - Glostten/CMA

Dockside technology research & testing facility

Hull Fouling – the next big issue?



Fouling Vector in CA

- Fouling as sole vector:
 - SF Bay = 20.1%¹ - 27%² of NIS
 - LA/LB = 53.4%¹ of NIS
- Fouling as sole vector or one of multiple potential vectors
 - SF Bay = 62.2%¹ of NIS
 - LA/LB = 90.3%¹ of NIS

¹ Davidson et al. in prep

² Cohen and Carlton
1995



Fouling Vector in CA continued

Limited baseline information on vessel fouling across vessel types that regularly operate in CA

Limited information on effects of voyage characteristics on accumulation of fouling organisms

Limited information on husbandry practices regarding niche areas

Voluntary hull husbandry reporting form developed for 2006

Technical Advisory Group (TAG) TAG Meeting Framework

Information Sharing

Recommendation Development

Workshop
May 11, 2005



Meeting #2
August 3



Meeting #3
October 13



Meeting #4
December 19

Initial
information
sharing
inclusive
of recreational
fouling

Preliminary
scoping of
potential
management
frameworks

Discussion:
focus on
commercial
vessels

Fouling risk
factors

Commercial
vessel
maintenance
frameworks

Potential
Management
Frameworks for
CA: Research?
Regulations?
Best Management
Practices?

Potential
Management
Framework

Areas of Agreement

Fouling Removal

Regular fouling removal as defined as any one of the following:

- By the expiration (or extension) of full-term Safety Construction Certificate
- By the expiration (or extension) of the USCG Certificate of Inspection
- 5 years since the most recent dry-dock



Hull Husbandry Reporting Form Submission

*Once each Calendar Year if
operating in California waters*

Replaced voluntary form

Why?

- Data will be combined with biological studies
- Information to develop regulations by 2012



Print Form

**California State Lands Commission
Marine Invasive Species Program
Hull Husbandry Reporting Form
Public Resources Code – 71205(e) and 71205(f)
June 6, 2008
Part I: 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

Yes, partial coat Date last full coat applied (Day/Month/Year):

No coat applied 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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Preliminary Findings

- Husbandry practices suggest that vessel owners are attempting to limit the amount of fouling organisms that can accumulate
- Voyage characteristics suggest the potential for reduced risk for some vessel types and increased risk for others

Funded Fouling Vector Research

CSLC – Portland State University

Phases I, II, & III

Assessing the risk of invasions from commercial vessel hull fouling



Looking Forward

- ✓ Technology Reporting Form – February 2010
- ✓ Technology Review Report – July 2010
- ✓ Biennial Report – January 2011
- ✓ Review and Analysis of Fouling data - 2011
- ✓ More Research



Questions?

For more information

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

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