

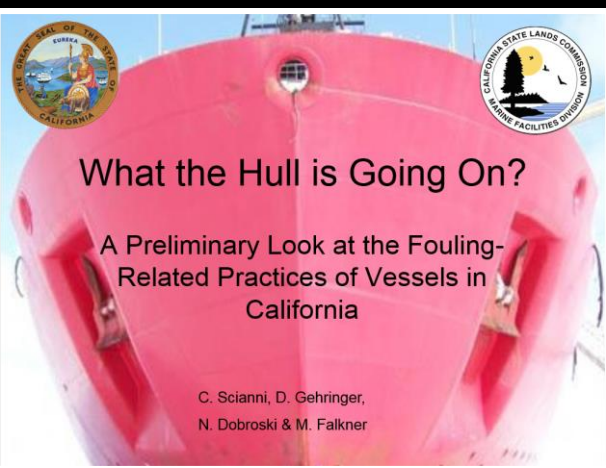
# Two Halves Make a Whole: Adding Biofouling Regulations to the Mix to Manage the Entire Vessel as a Vector...

...Eventually



Chris Scianni  
CSLC – Marine Invasive Species Program  
Pacific Ballast Water Group  
March 29, 2016 – Sacramento, CA





## What the Hull is Going On?

A Preliminary Look at the Fouling-Related Practices of Vessels in California

C. Scianni, D. Gehringer,  
N. Dobroski & M. Falkner



## California's Path Towards Managing Commercial Vessel Fouling

Chris Scianni

California State Lands Commission  
PBWG January 12, 2010



## California's Path Towards Managing Commercial Vessel Fouling

Chris Scianni

California State Lands Commission  
PBWG March 8, 2011



## Update on Development of CA Biofouling Management Regulations

Chris Scianni

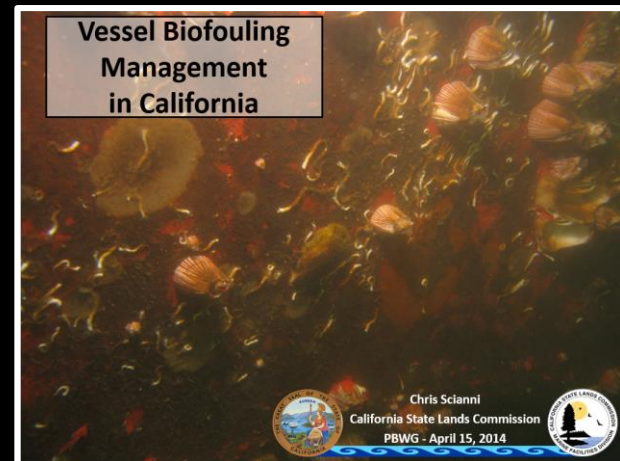
California State Lands Commission  
PBWG February 15, 2012



## Vessel Biofouling Management in California

Chris Scianni

California State Lands Commission  
PBWG - April 16, 2013



## Vessel Biofouling Management in California

Chris Scianni

California State Lands Commission  
PBWG - April 15, 2014



## Biofouling management in CA:

Recent practices, research, proposed regulations, and future goals

Chris Scianni

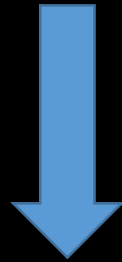
CSLC - Marine Invasive Species Program  
Pacific Ballast Water Group  
April 15, 2015 - Seattle, WA

May 1, 2015 → Initiate Public Rulemaking

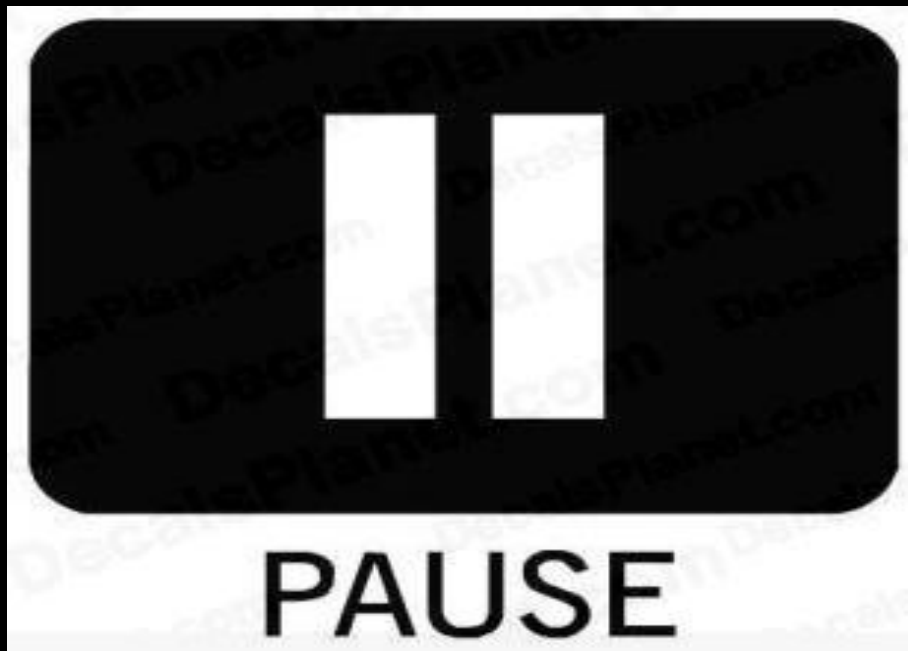
December 18, 2015 → CSLC Approval

Last remaining hurdle: Procedural review

Development



Approval











**RECYCLE**

# Making Policy Sausage

A Behind-The-Scenes Look at the Development of Biofouling Management Regulations For the State of California

Chris Scianni

ICMCF – June 27, 2012

CA State Lands Commission

Marine Invasive Species Program

Policy

Policy

Policy

Policy



The opinions expressed are those of the presenter and do not necessarily represent the position of the California State Lands Commission

# Phase 5

Phase 1: Assess the Problem

Phase 2: Science/Data Collection

Phase 3: Stakeholder Input

Phase 4: Public Process

**Proposed  
Regulations**

**...then what?**





# Phase 5: Sales Pitch

Decision  
makers have  
to approve



Regulation



Subject to review by CA Office of  
Administrative Law to ensure compliance  
with Administrative Procedures Act

# Rulemaking Byproducts

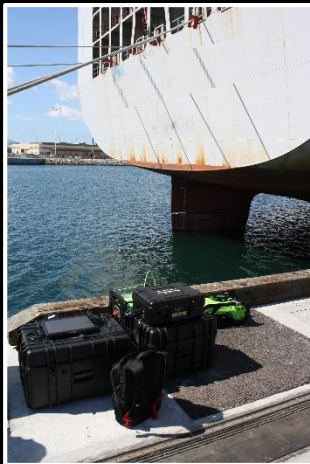
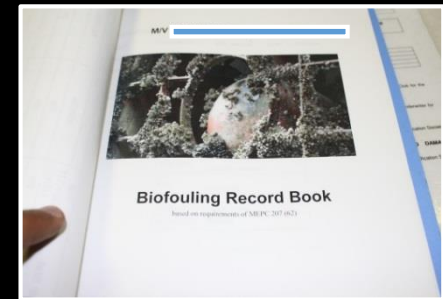
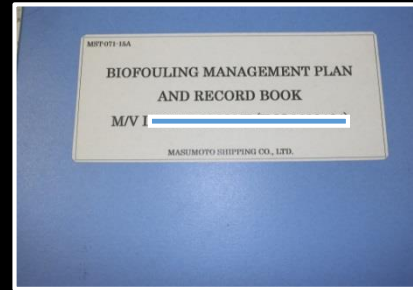


- Lengthy, complicated, frustrating process
  - For everyone involved
- But absolutely necessary
  - Every voice and concern is important
  - Every consideration needs to be made
- Likely that everyone involved will be happy with certain components, and unhappy with others

# Quick updates from 2015 presentation: Biofouling Management Regulations

- Reintroduce rulemaking action

- Protocols



- Regulatory guidance document



# Quick updates from 2015 presentation: Biofouling research

- Copper-tolerance



- ROV surveys of long residency vessel



# Quick updates from 2015 presentation: Manuscripts

BIOFOULING, 2016  
VOL. 32, NO. 4, 411–428  
<http://dx.doi.org/10.1080/08927014.2016.1149572>

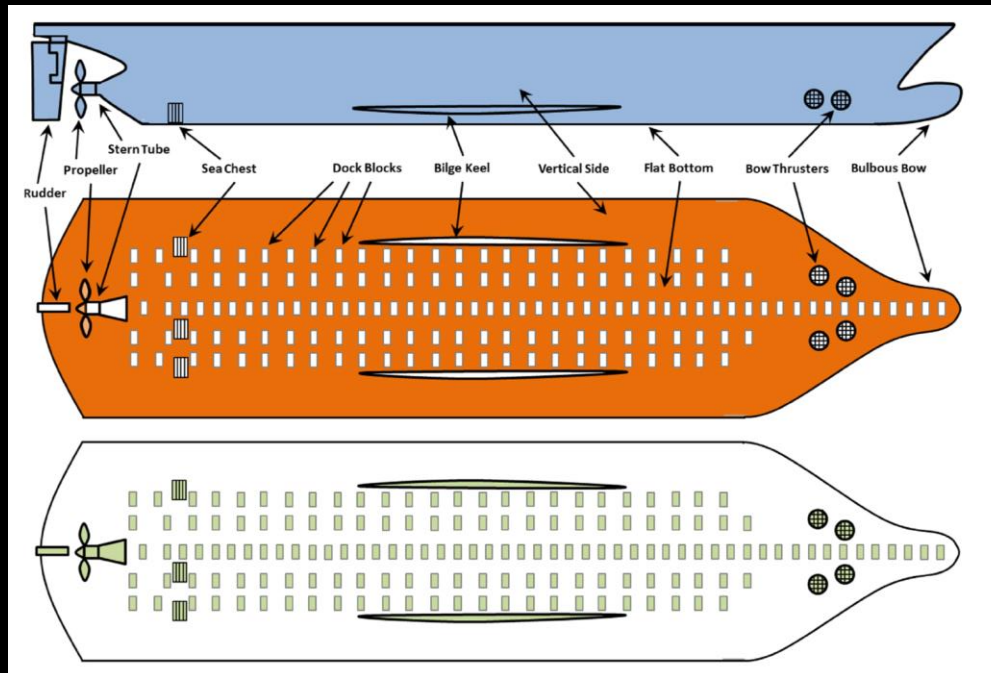


## REVIEW

### Mini-review: Assessing the drivers of ship biofouling management – aligning industry and biosecurity goals

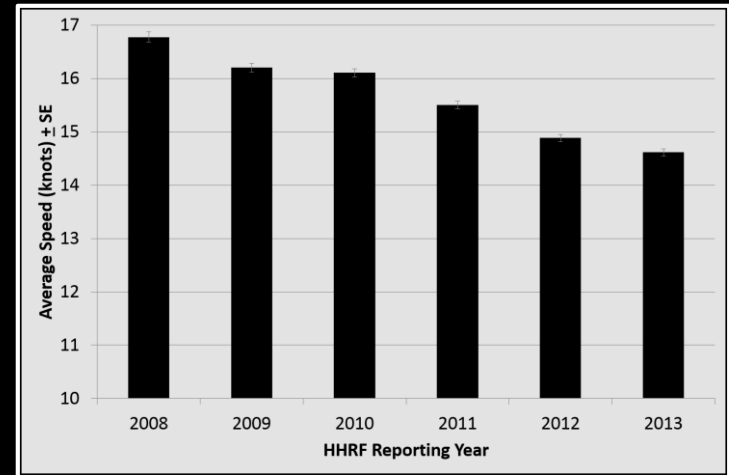
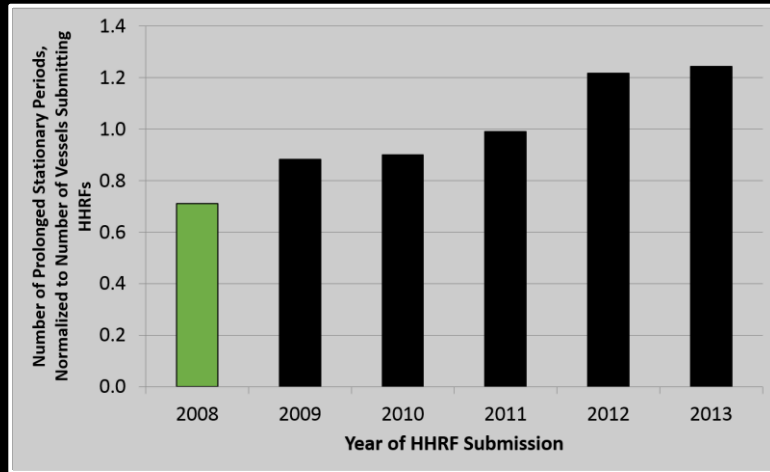
Ian Davidson<sup>a</sup>, Christopher Scianni<sup>b</sup>, Chad Hewitt<sup>c</sup>, Richard Everett<sup>d</sup>, Eric Holm<sup>e</sup>, Mario Tamburri<sup>f</sup> and Gregory Ruiz<sup>a</sup>

<sup>a</sup>Smithsonian Environmental Research Center, Edgewater, MD, USA; <sup>b</sup>Marine Invasive Species Program, California State Lands Commission, Sacramento, CA, USA; <sup>c</sup>School of Science, University of Waikato, Hamilton, New Zealand; <sup>d</sup>Environmental Standards Division, United States Coast Guard, Washington, DC, USA; <sup>e</sup>Carderock Division, Naval Surface Warfare Center, West Bethesda, MD, USA; <sup>f</sup>Chesapeake Biological Laboratory, University of Maryland Center for Environmental Science, Solomons, MD, USA



# Quick updates from 2015 presentation: Manuscripts

- Great Recession impacts on NIS introduction risk (in prep)



- Antifouling/Foul-Release coatings use
  - \*\*See Raya Nedelcheva's talk tomorrow!!!\*\*

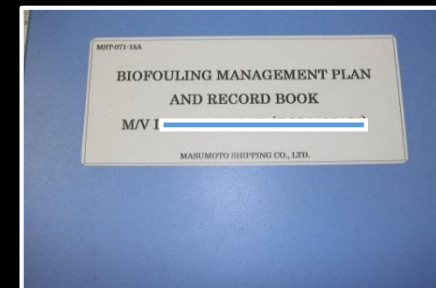
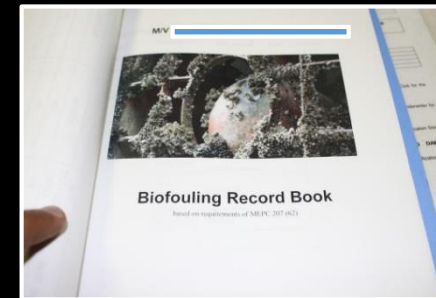
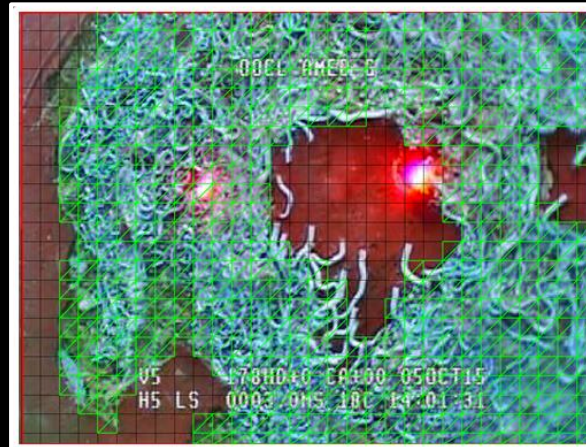


# Quick updates from 2015 presentation

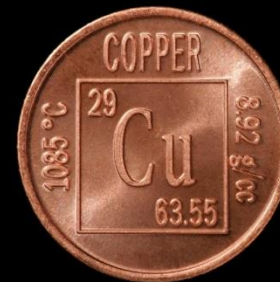
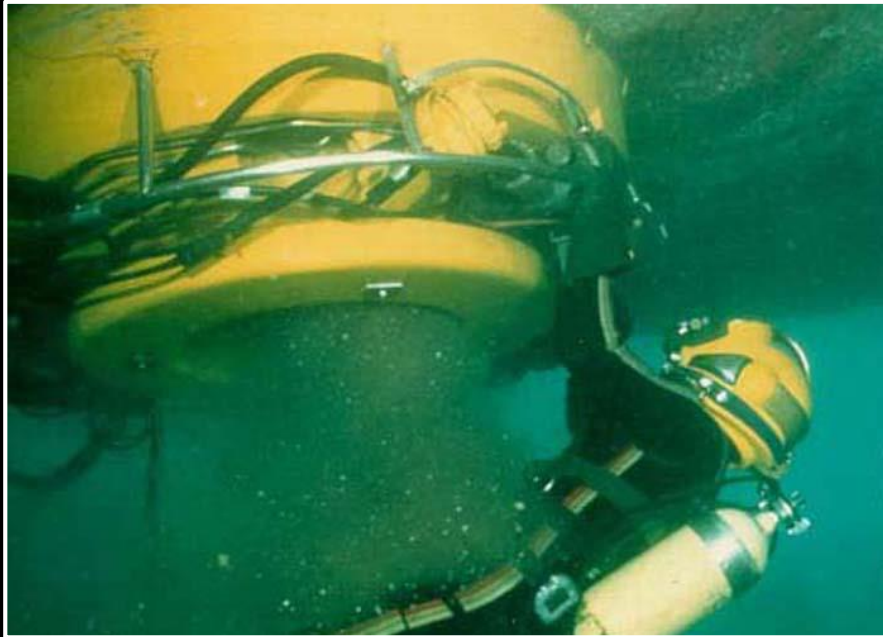
- CSU COAST Internship projects
  - Waterlines



- Biofouling Management Plans/Record Books
- Process ROV video



# In-Water Cleaning



CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY  
SAN FRANCISCO BAY REGIONAL WATER QUALITY CONTROL BOARD

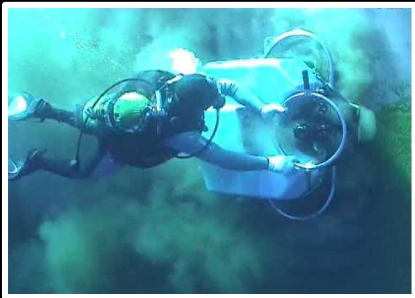
CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY  
LOS ANGELES REGIONAL WATER QUALITY CONTROL BOARD

CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY  
SAN DIEGO REGIONAL WATER QUALITY CONTROL BOARD



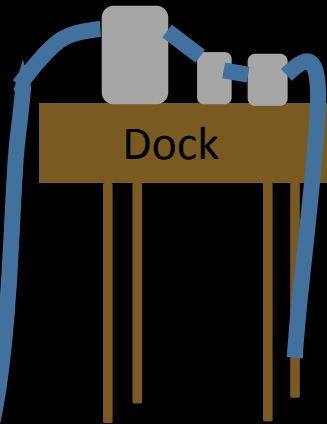
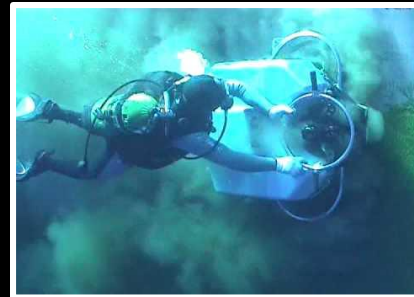
# In-Water Cleaning: Who owns the discharge?

Discharge is covered under  
Vessel General Permit



Discharge is NOT covered under  
Vessel General Permit

- Now essentially the IWC company's commercial discharge
- IWC company needs NPDES permit



Disclaimer: This slide represents my understanding of the situation, after conversations with EPA staff. I do not represent nor speak for the EPA.



# Moment of Zen

Fortune Cookie - February 24, 2012

**You will make many changes  
before settling satisfactorily.**

# Thank You



**Chris Scianni**  
**California State Lands Commission**  
**Marine Invasive Species Program**

[chris.scianni@slc.ca.gov](mailto:chris.scianni@slc.ca.gov)