

A photograph of the Golden Gate Bridge in San Francisco, California. The bridge's iconic red-orange towers and suspension cables are prominent on the left side of the frame. The bridge spans across a body of blue water. In the lower right portion of the image, a large black container ship with "YANG MING LINE" written on its side is sailing. The sky is a pale blue with some light clouds. The overall scene is a classic view of the bridge from a high vantage point.

# California State Lands Commission's Marine Invasive Species Program:

Reducing vessel-mediated  
species introductions

Chris Scianni, CSLC MISP  
Marinas IACC, 7 September 2011

# Marine Invasive Species Program

- Purpose, as defined by legislature [PRC 71201(d)]  
...to move the state expeditiously toward elimination of the discharge of nonindigenous species into the waters of the state...



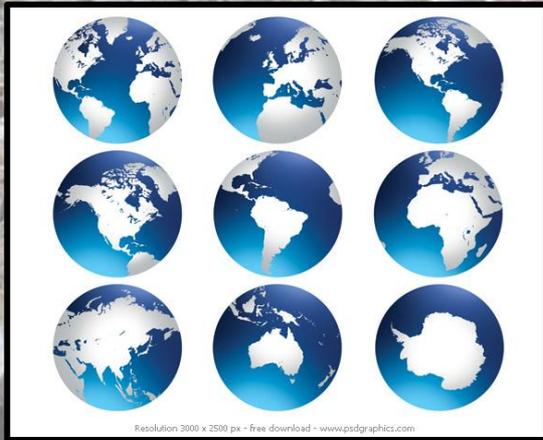
**\$120,000,000,000 per year in the US**

(Pimentel et al. 2005)

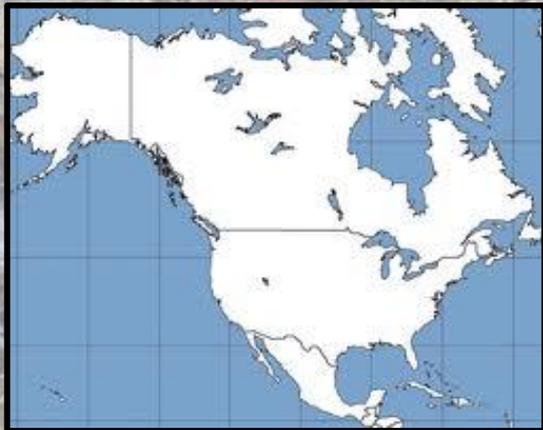


# Marine Invasive Species Program

Jurisdiction: Vessels 300 GRT and above



Vector strength  
worldwide  
(Hewitt & Campbell 2010)

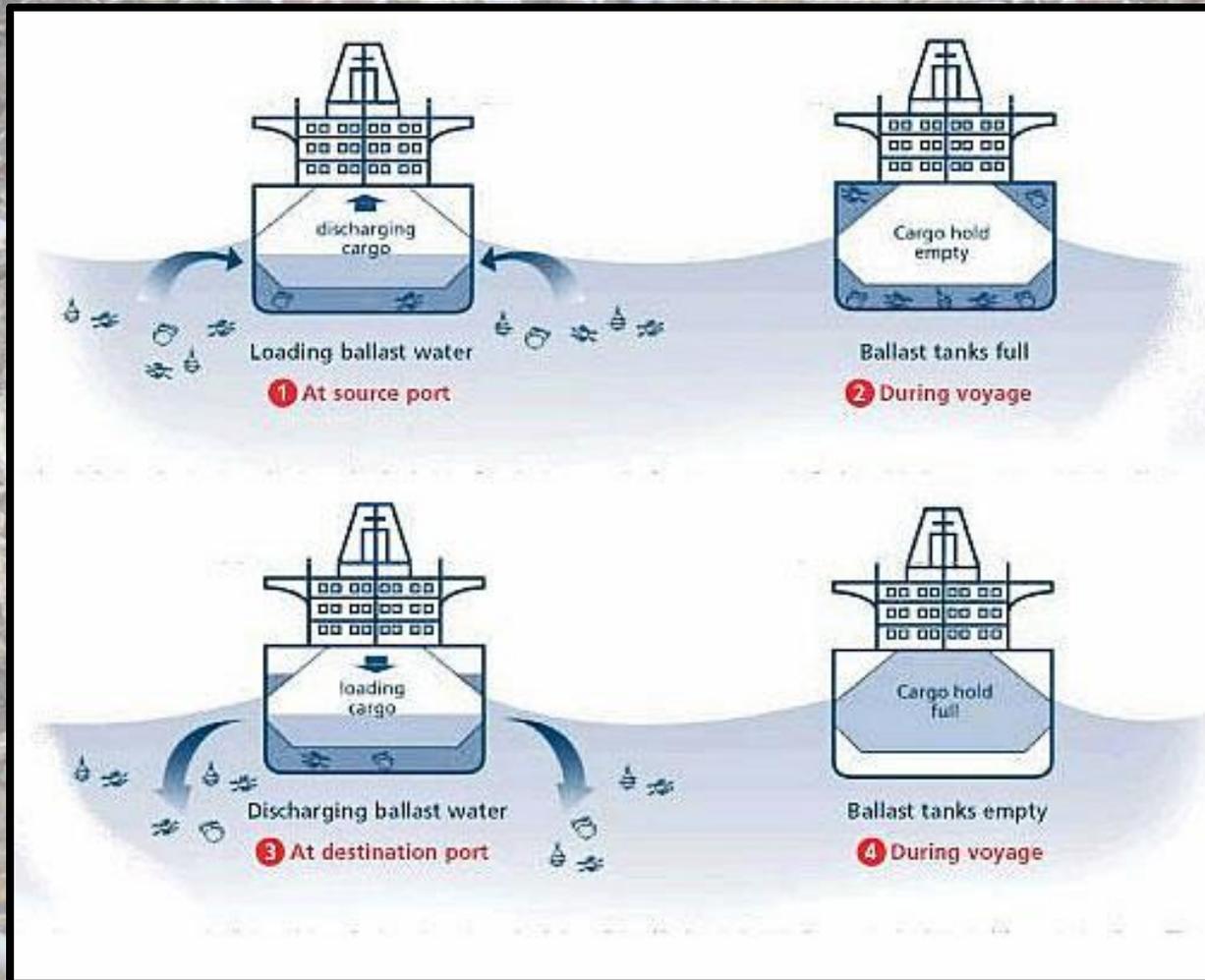


Vector strength  
North America  
(Fofonoff et al. 2003)



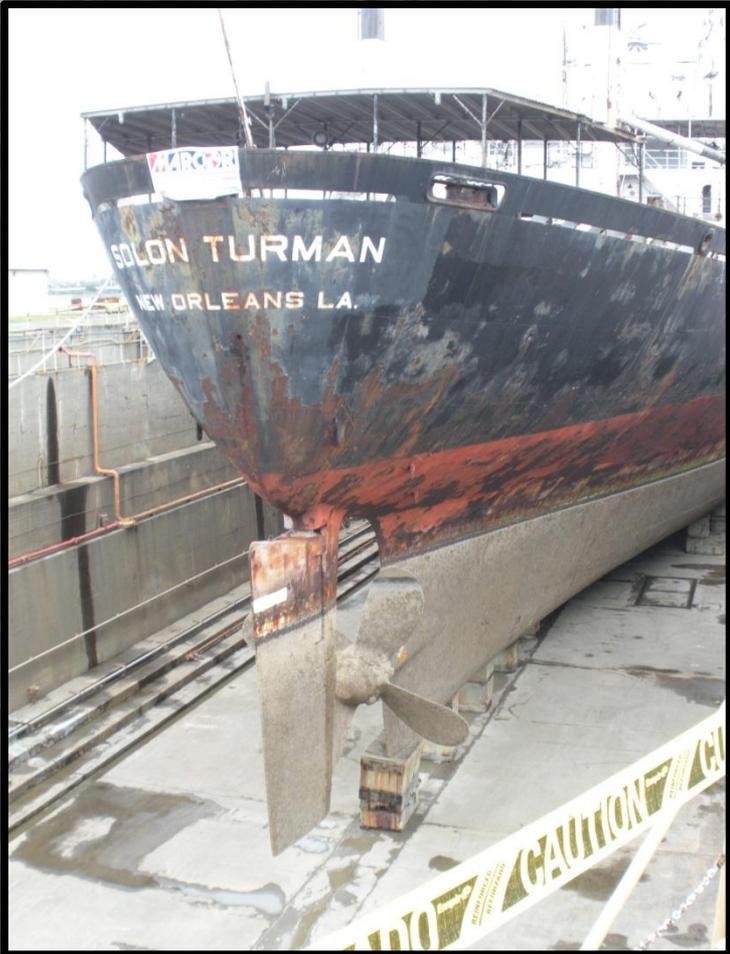
# 2 Main Shipping Sub-Vectors

## Ballast Water



# 2 Main Shipping Sub-Vectors

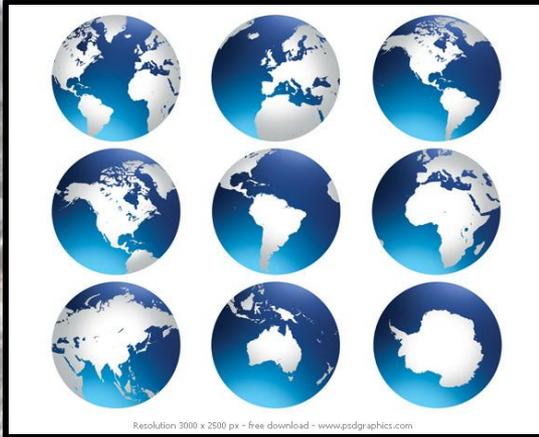
## Vessel Biofouling



# Vessel Biofouling

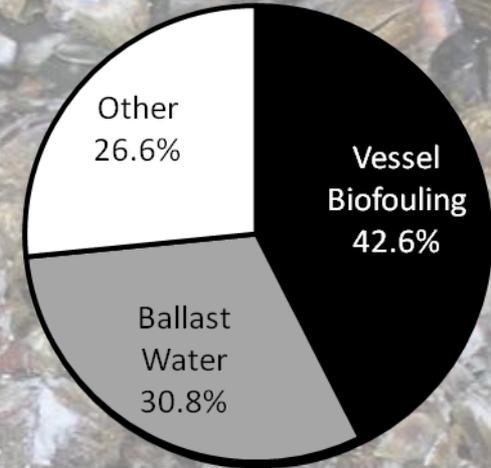


# Marine Invasive Species Program



## Vector strength worldwide

(Hewitt & Campbell 2010)



## Vector strength in CA

(Ruiz et al. 2011)

### Statewide coastal NIS (including bays, harbors, estuaries)

- Biofouling = 18 - 60% of established NIS
- Ballast Water = 9 - 56% of established NIS

# Biofouling Regulations Mandate

## Assembly Bill 740 (Oct. 2007)

- Develop and adopt regulations by January 1, 2012
- Collect hull husbandry info from fleet on mandatory basis
- Fund necessary research



California State Lands Commission  
Marine Invasive Species Program  
Hull Husbandry Reporting Form  
Public Resources Code - 71205(a) 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**

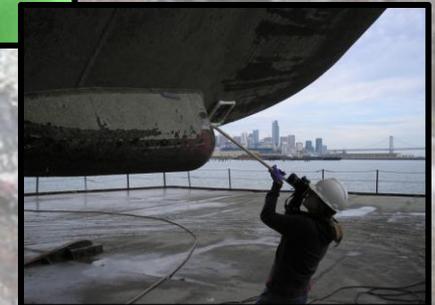
1. Since delivery, has this vessel ever been removed from the water for maintenance?  
Yes  No

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  Hull Bottom  Sea Chests   
Sea Chest Gratings  Propeller  Rope Guard/Propeller Shaft   
Previous Docking Blocks  Thrusters  Rudder  Bilge Keels



# Draft Biofouling Regulations

## Main Priorities:

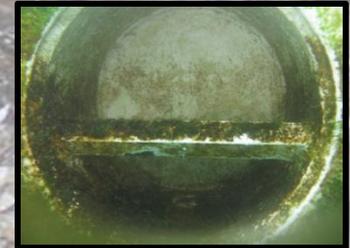
1. Maintain consistency with International Maritime Organization (IMO) and international partners, when possible



# Draft Biofouling Regulations

## Main Priorities:

2. Address 'niche areas' while maintaining acceptable levels of biofouling for entire vessel



# Draft Biofouling Regulations

Main Priorities:

## 3. Address High Risk Vessels

Floerl and Coutts 2009

Port of Singapore, May 2009. Images: A. Coutts, May 2009



Laid up vessels



Suisun Bay Reserve Fleet



Bay Bridge construction vessels

# Draft Biofouling Regulations

- Public comment period likely to begin Sept 16
- Will be posted on our website:  
[http://www.slc.ca.gov/Spec\\_Pub/MFD/Ballast  
Water/Ballast Water Default.html](http://www.slc.ca.gov/Spec_Pub/MFD/Ballast_Water/Ballast_Water_Default.html)
- Likely enter into effect January 1, 2013



# America's Cup 2012-2013



<http://www.americascup.com/en/Discover/San-Francisco/>

# America's Cup 2012-2013



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# America's Cup 2012-2013

## AC34 Invasive Species Task Force



<http://www.americascup.com/en/Discover/San-Francisco/>

# Antifouling Coatings



# Thank You



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