

Copper TMDL Panel: CMANC 2026 Spring Meeting



Presenters:

Shelly Anghera, Moffatt & Nichol supporting City of Newport Beach

Kelly Tait, Port of San Diego

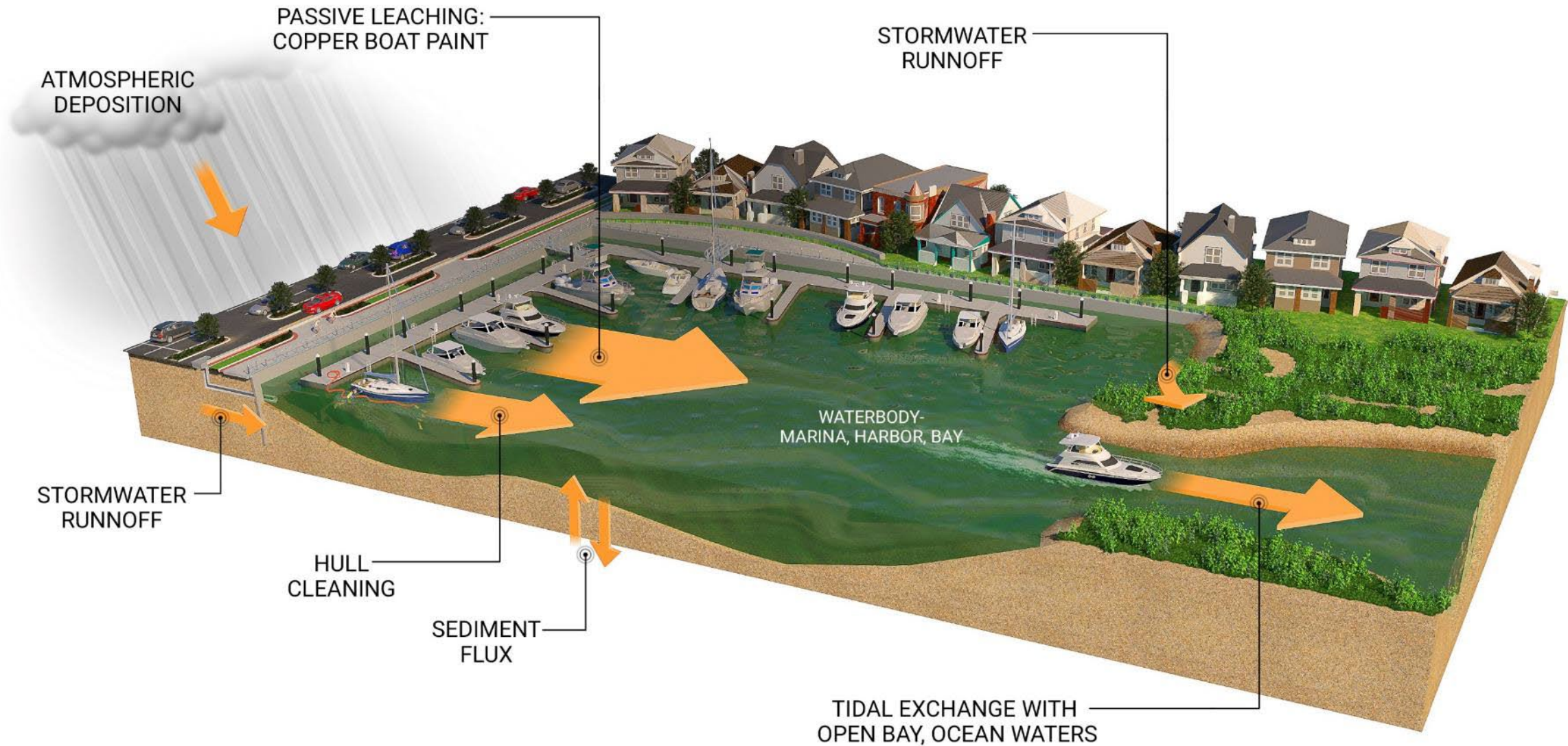
Emiko Innes, Los Angeles County Department of Beaches and Harbor



Discussion

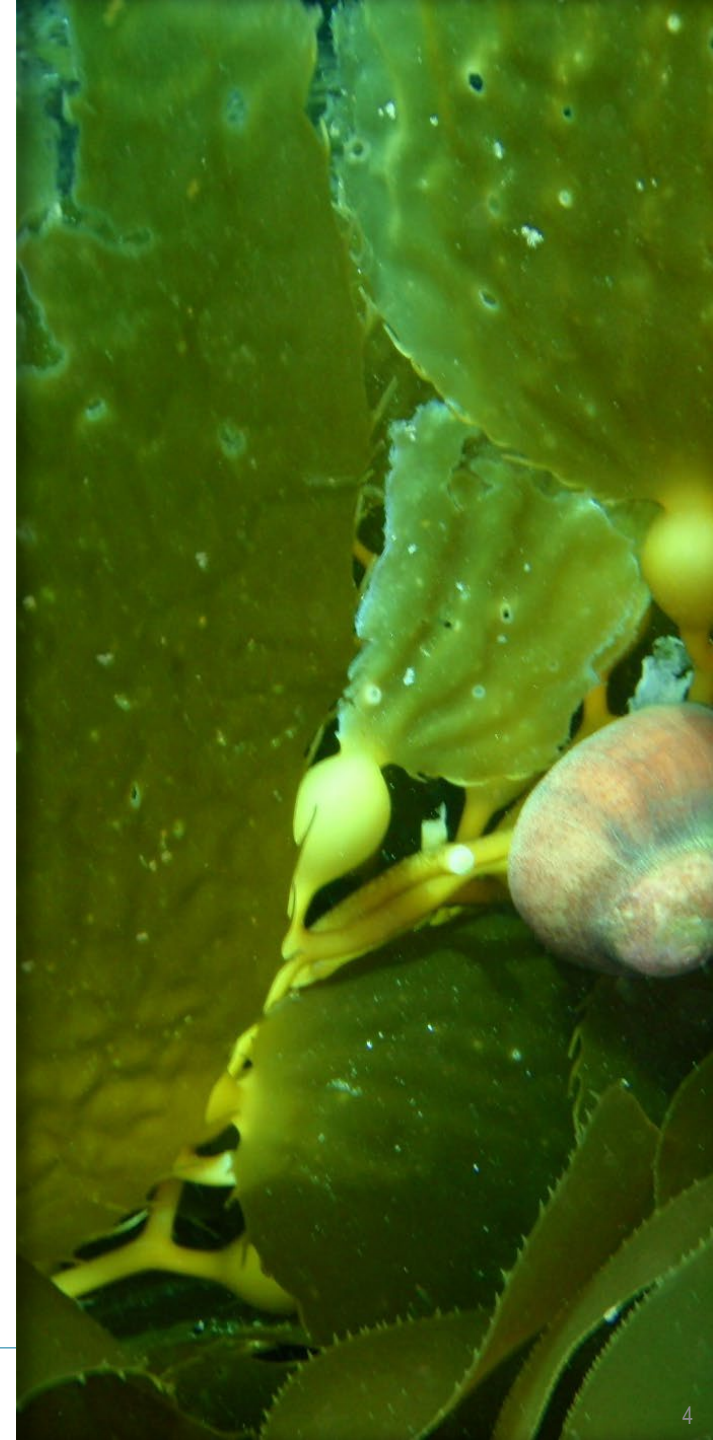
- › Introduction: Dissolved Copper Limits and the Boating Community
 - › Current regulations
 - › Current copper control activities:
 - › Orange County - Newport Bay
 - › Los Angeles – Marina del Rey Harbor
 - › San Diego - Shelter Island
- › New discharge control efforts in Los Angeles and Ventura

Potential Sources of Pollutants



Meeting Water Quality Regulations

- › Since the major source of copper is boat paint in these situations, the limits seen include:
 1. Reduce copper boat paint by a specific percent or number of boats,
 2. Reduce number of boats with copper paint to meet 3.1 criteria, or
 3. Do whatever it takes to meet 3.1 ppb, such as reduce copper inputs from cleaning practices



Copper-Based AFP and Coatings Restrictions by DPR

- › In 2018, DPR adopted new regulations for limits in copper in paints
 - › Reduced release rates of copper from paints
 - › Recommended in-water hull cleaners follow the California Professional Divers Association's BMP method with soft-pile carpet
 - › Limit in-water hull cleaning to no more frequently than once per month.
- › Additional potential mitigation measures include:
 - › In-water hull cleaners use BMPs
 - › Encourage paint manufactures to develop cleaning guidance
 - › Increase boater awareness of alternative paints
 - › Support incentive programs to convert boats to non-copper

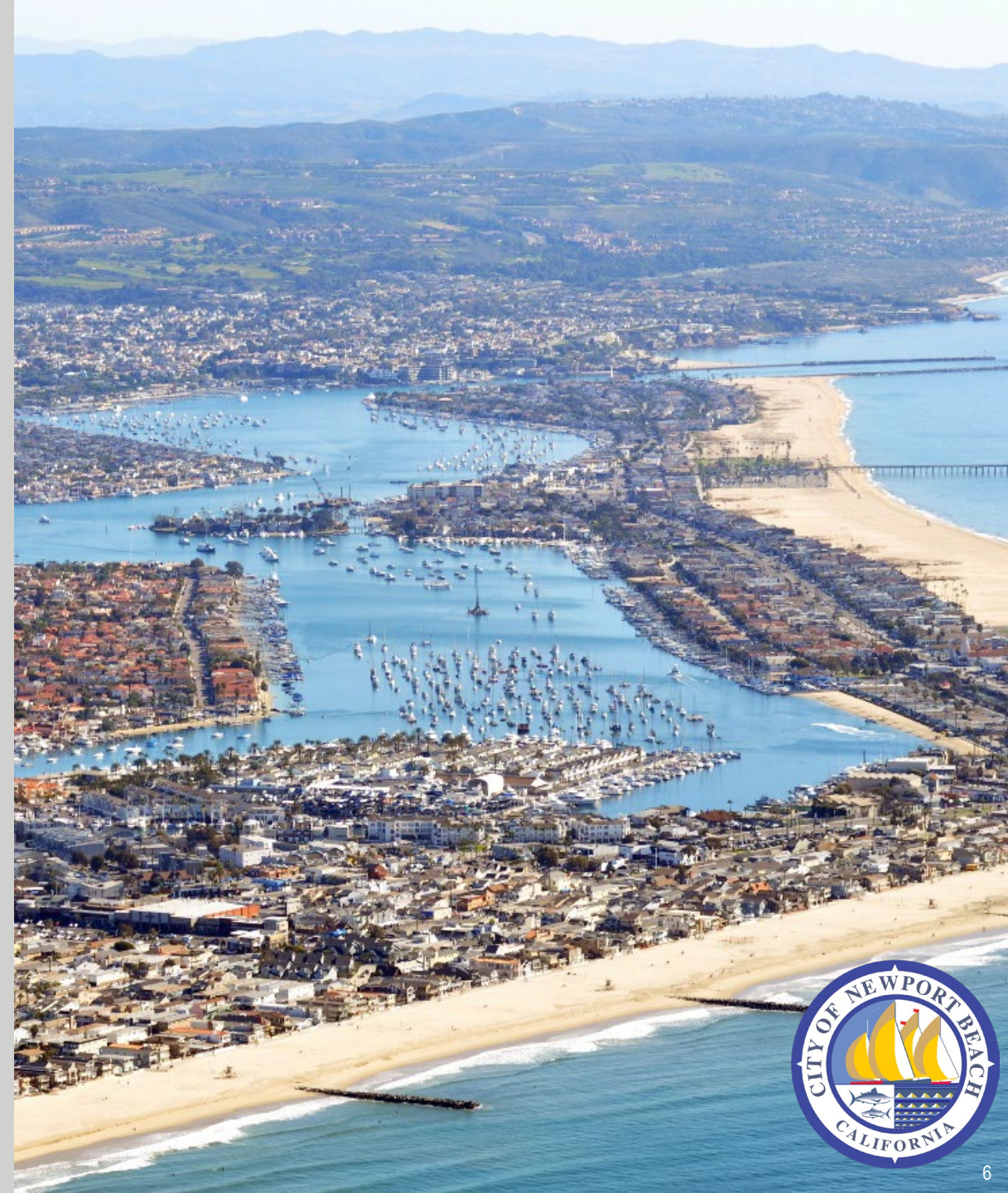


What is going on in Newport Bay?

- › EPA developed a TMDL in 2002, but methods to reduce copper were not defined.
- › The Water Board methods to reduce copper through boat conversions that was detailed in multiple draft versions of the TMDL: 2016, 2018, and 2021.
- › TMDL approved by the State in 2025; awaiting Federal EPA approval

City of Newport Beach:

[35Thttps://www.newportbeachca.gov/government/departments/public-works/ocean-water-quality/newport-bay-copper](https://www.newportbeachca.gov/government/departments/public-works/ocean-water-quality/newport-bay-copper)



Newport Bay: Average Cu Concentration is 2.5 µg/L

- › DPR is collecting data in Newport Bay over a 7-year period to track the effectiveness of current copper reduction efforts by the State.
- › Copper is lower in areas that have the greatest flushing from tides.
- › Two toxicity testing programs were conducted in areas with highest copper and no toxicity was observed



Approach by City of Newport Beach

- › The State has the authority, through DPR, to regulate and approve all boat bottom paints used in California. The City does not.
- › The City actively promotes programs to improve water quality in the Bay that are within its authority.
- › Copper levels in in Newport Bay have not shown impairment to aquatic life.
- › There are significant environmental concerns related to available non-copper alternative boat paints.
 - › No Feasible, Reasonable, and Readily-available to Non-copper AFP
 - › Impacts of Non-Cu Substitutes have not been evaluated

What is going on in Marina del Rey?

- › Toxic Pollutants TMDL
 - › Became effective in 2006
 - › Revised by the Regional Board in 2014 to include dissolved copper
- › Implementing the Copper Reduction Program
- › Completed Copper Site Specific Objectives Study in 2021
- › **Revised TMDL currently in consideration by the State Water Board**

LA County Beaches & Harbor:

<https://beaches.lacounty.gov/toxics-tmdl/>



Data CSUMB SFML, CA OPC

MdR Copper TMDL Re-Opener Overview

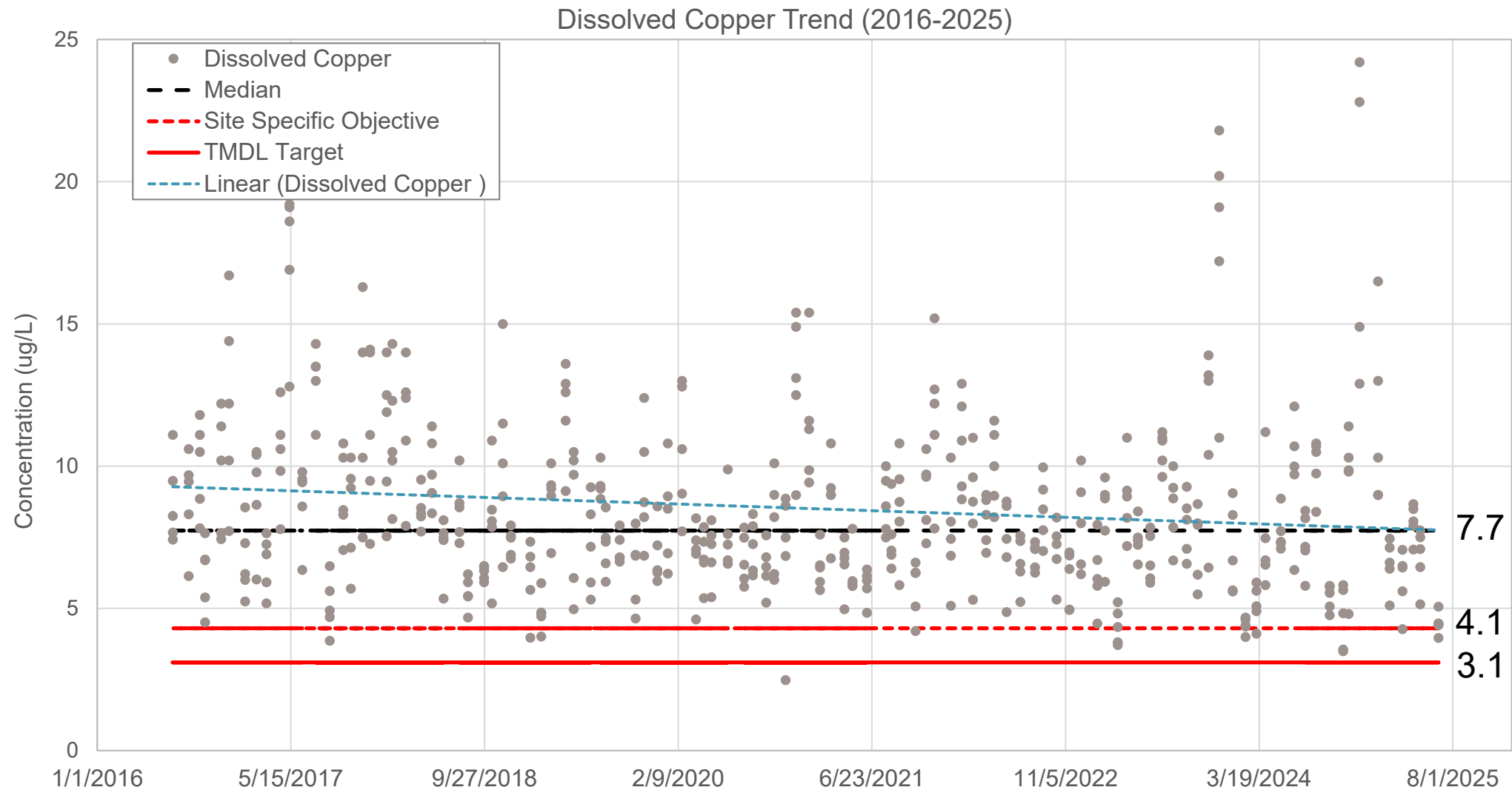
- › Original TMDL adopted in 2014
- › Copper SSO Study completed in 2021
- › Revised TMDL adopted by LA Regional Board on June 27, 2024
 - › State Water Board Public Review: Comment due Oct. 6, 2025
 - › State Water Board Adoption Hearing: Not scheduled yet

Item	2014 TMDL	2024 TMDL Re-Opener
Copper Numeric Target	3.1 ug/L	4.1 ug/L (WER = 1.32)
Copper Load Allocation	85% reduction, or 4,041 boats* with non-copper paint, or other methods	57% reduction, or 2,710 boats* with non-biocide paint, or other methods
Compliance Deadline	3/22/2024	3/22/2026

*Assuming all 4,754 slips in MdR are occupied

Regional Board is developing a regulatory mechanism (i.e. Waste Discharge Requirement (WDR) or Conditional Waiver of WDR) to enforce the TMDL target and compliance deadline.

Copper Concentrations In MdR



LA County's Copper Reduction Program

Paint Conversion



- Non-Biocide Paints
- Non-Copper Paints
- Low Leach Rate Copper Paints

Hull Cleaning BMPs



- Mandatory Hull Cleaning Best Management Practices (BMPs) Certification

Separate Boat Hull from Water



- Boat Lifts
- In-Water Dry Docks

Current Actions

- › Continue implementation of the Copper Reduction Program
- › Continue coordination with Port of San Diego and City of Newport Beach
- › Coordinate with the RB to develop a permit
 - › Responding to information requests
 - › Provide feedback on the draft permit upon its release
- › LA Regional Board's non-point source control efforts coming to your harbors!

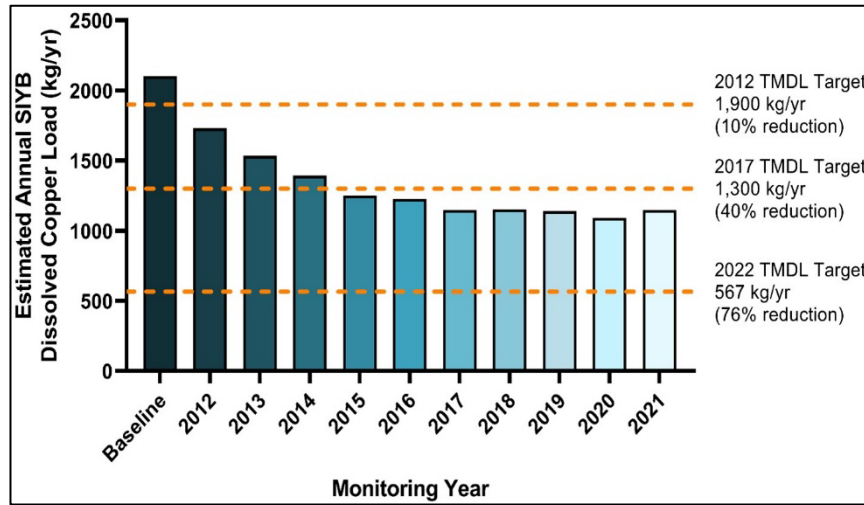


What is Going on in Shelter Island?

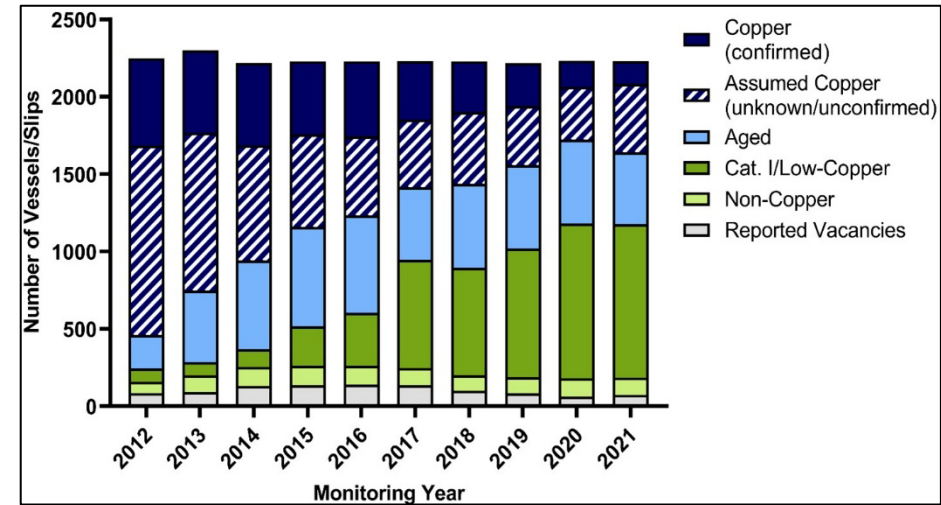
- › EPA developed a TMDL in 2005, IO issued in 2009 for monitoring and technical data needs
- › TMDL compliance – 76% copper load reduction by 2022. Actual reduction in 2022 was ~45%
- › IO rescinded in 2023, DPR Tasked with Bi-annual monitoring



Shelter Island Yacht Basin- Where We've Been



Changes in Copper Loading over Time

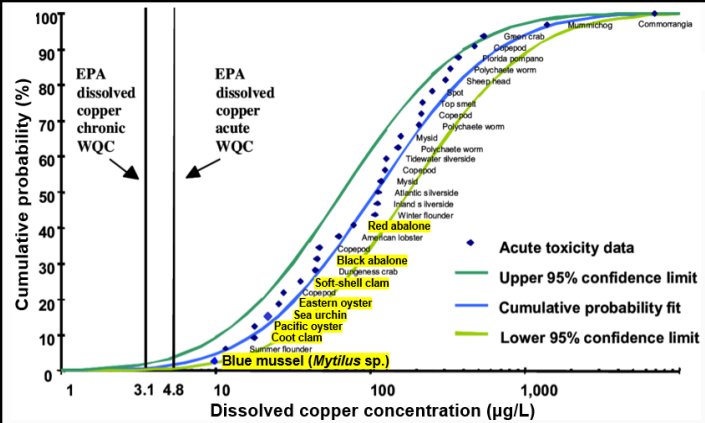


Changes in Paint Use over Time

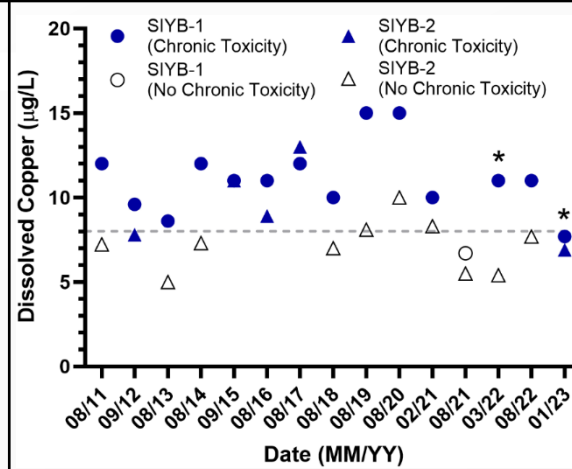
Overview of Water Quality in SIYB

- › Provides the most in-depth study of water quality in the basin
- › Over 90 analytes have been measured in SIYB waters for the Regional Harbor Monitoring Program
- › Of the analytes evaluated, only dissolved copper exceeds water quality criteria

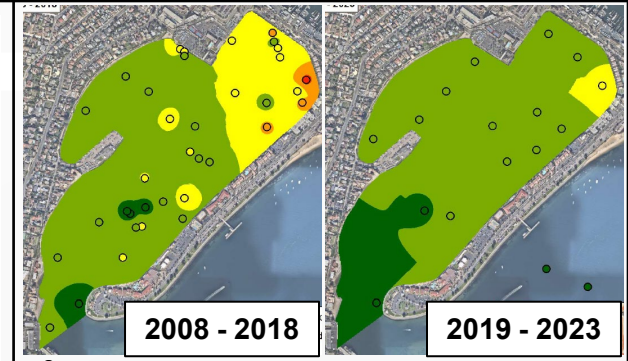




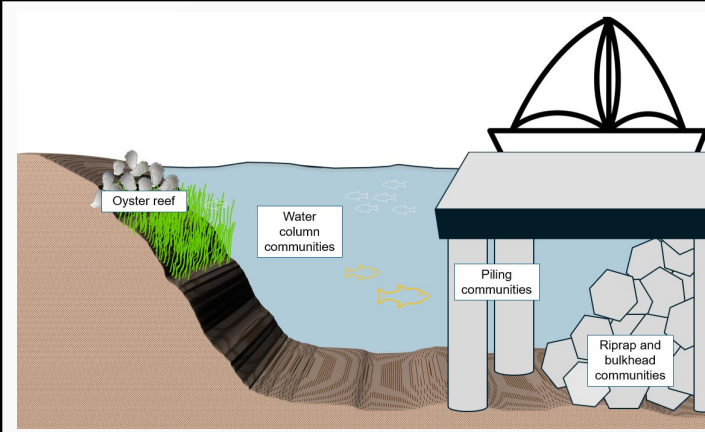
WQOs were derived to conservatively protect the most sensitive species (*Mytilus* sp.).



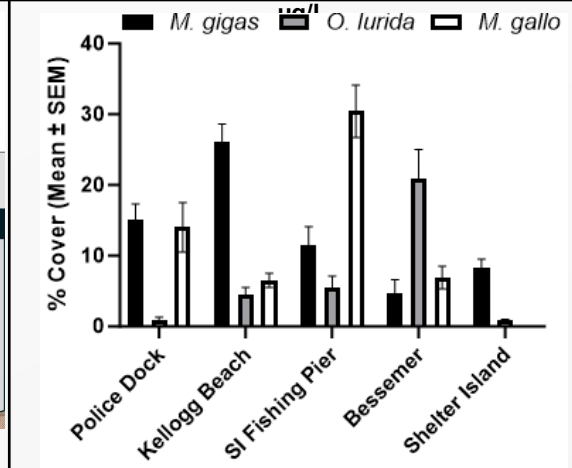
Chronic toxicity to bivalve embryos was observed in SIYB at concentrations above ~ 8



Predicted toxicity in SIYB using the BLM has decreased since implementation of the DPR Rule.



Bivalve larvae begin development in the water column until they settle on substrate (e.g., pilings, riprap, reefs) and develop into adults.



Adult bivalves are present in and around SIYB based on surveys conducted in 2020–2021.

Unknowns

- What are current conditions in SIYB? (e.g., recent DPR study, toxicity, and bivalve surveys)
- What is the distribution of mussel populations throughout the basin?
- Is toxicity observed in the lab translating to degradation of mussel communities in the basin?
- If there are impacts on adult mussel communities, is it due to copper or other factors?

Next Steps

- › Exploring shellfish as appropriate indicator for ecosystem health
- › RB evaluating potential TMDL implementation plan revisions
 - › Exploring use of more direct assessments of biological integrity to inform water quality restoration management decisions
- › May 7, 2026 staff workshop for public to share expectations of priorities for healthy aquatic ecosystems in SIYB. Written comments due June 1, 2026
- › 2027-2029 Conduct biological assessments
- › 2030-2035 Implement management measures based on assessments



More Information

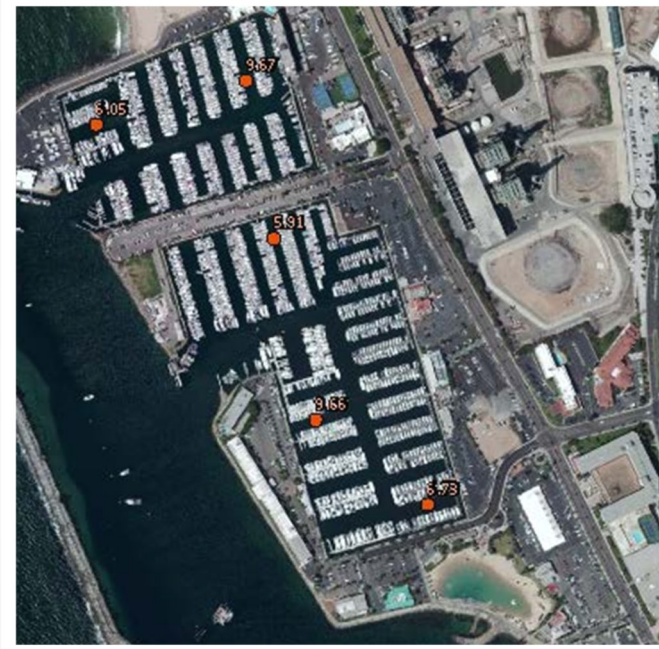
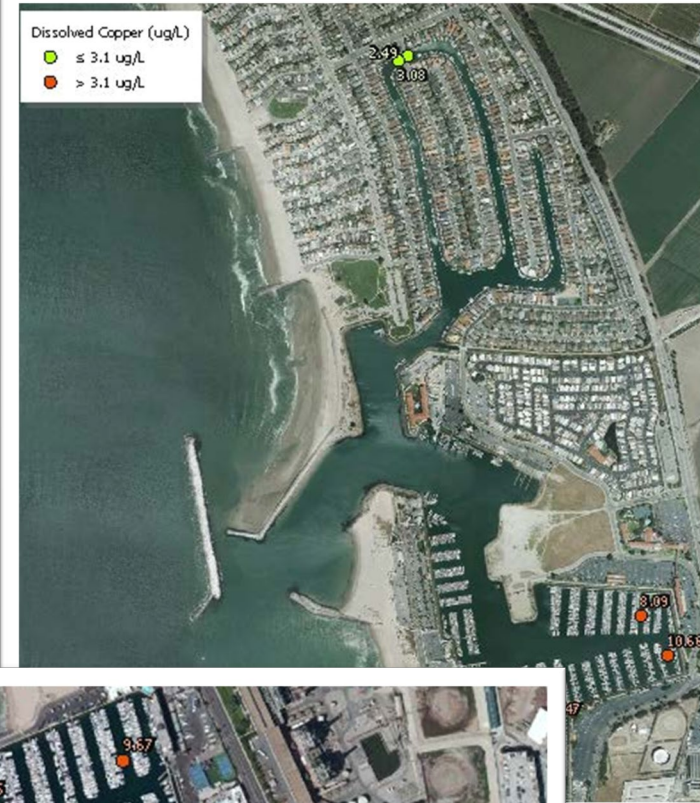
- › Participate in the regulatory process
- › Port of San Diego Copper Reduction Program Website:
<https://www.portofsandiego.org/environment/environmental-protection/copper-reduction-program>
- › SD Regional Water Quality Control Board Website:
https://www.waterboards.ca.gov/sandiego/water_issues/programs/watershed/southern_watershed.html



New non-point source control efforts in Los Angeles and Ventura

State Water Board Nonpoint Source (NPS) 2020-2025 Implementation Plan for Los Angeles and Ventura

- › Priority to reduce NPS discharges of biocides from boats residing in saltwater marinas in the next five years
- › https://www.waterboards.ca.gov/water_issues/programs/nps/docs/plans_policies/draft2020_2025npsplan.pdf





Questions?