

# Item 4a Current Water Quality Standards

## California Standards

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California Bacteria Summit

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# Presentation Outline

1. Intro to the Water Boards
2. Intro to Water Quality Standards
3. Shellfish Standards
4. Recreation Standards
5. Process for Changing Standards
6. Challenges and Opportunities





# Water Boards Mission

*To preserve, enhance, and restore the quality of California's water resources and drinking water for the protection of the environment, public health, and all beneficial uses, and to ensure proper water resource allocation and efficient use, for the benefit of present and future generations.*



# Water Boards Overview

## Regional Water Quality Control Boards

1. North Coast
2. San Francisco Bay
3. Central Coast
4. Los Angeles
5. Central Valley
6. Lahontan
7. Colorado River Basin
8. Santa Ana
9. San Diego



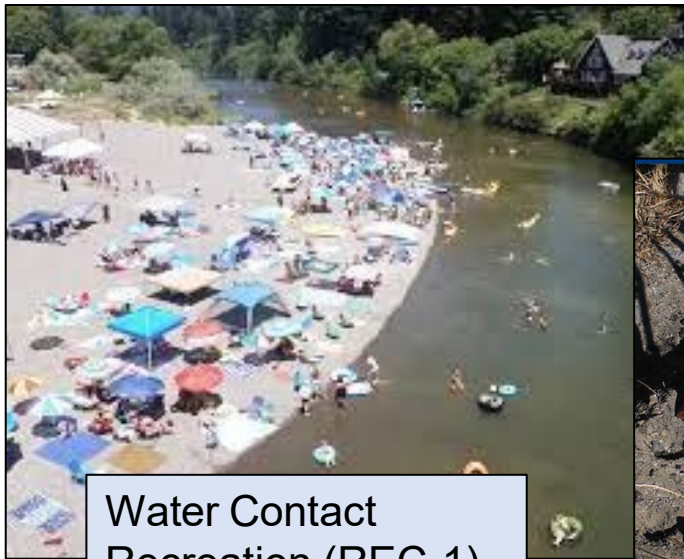
# Water Quality Standards

- Beneficial uses of water
- Water quality objectives



Municipal & Domestic  
Supply (MUN)

Agricultural Supply  
(AGR)



Water Contact  
Recreation (REC-1)



Tribal Tradition &  
Culture (CUL)



Cold Freshwater  
Habitat (COLD)



Commercial & Sport  
Fishing (COMM)



# Basin Plans and Statewide Water Quality Control Plans

## Contents

- Beneficial uses to be protected
- Water quality objectives to ensure reasonable protection of uses and prevent nuisance
- Programs of Implementation for achieving objectives, including
  - Description of actions to be taken
  - Time schedule
  - Description of surveillance (i.e., monitoring) to determine compliance with objectives

Per California Water Code § 13050(j)

# Where Can You Find California's Standards?

## Regional Water Boards' Basin Plans

- [www.waterboards.ca.gov/plans\\_policies](http://www.waterboards.ca.gov/plans_policies)

## State Water Board's Statewide Water Quality Control Plans

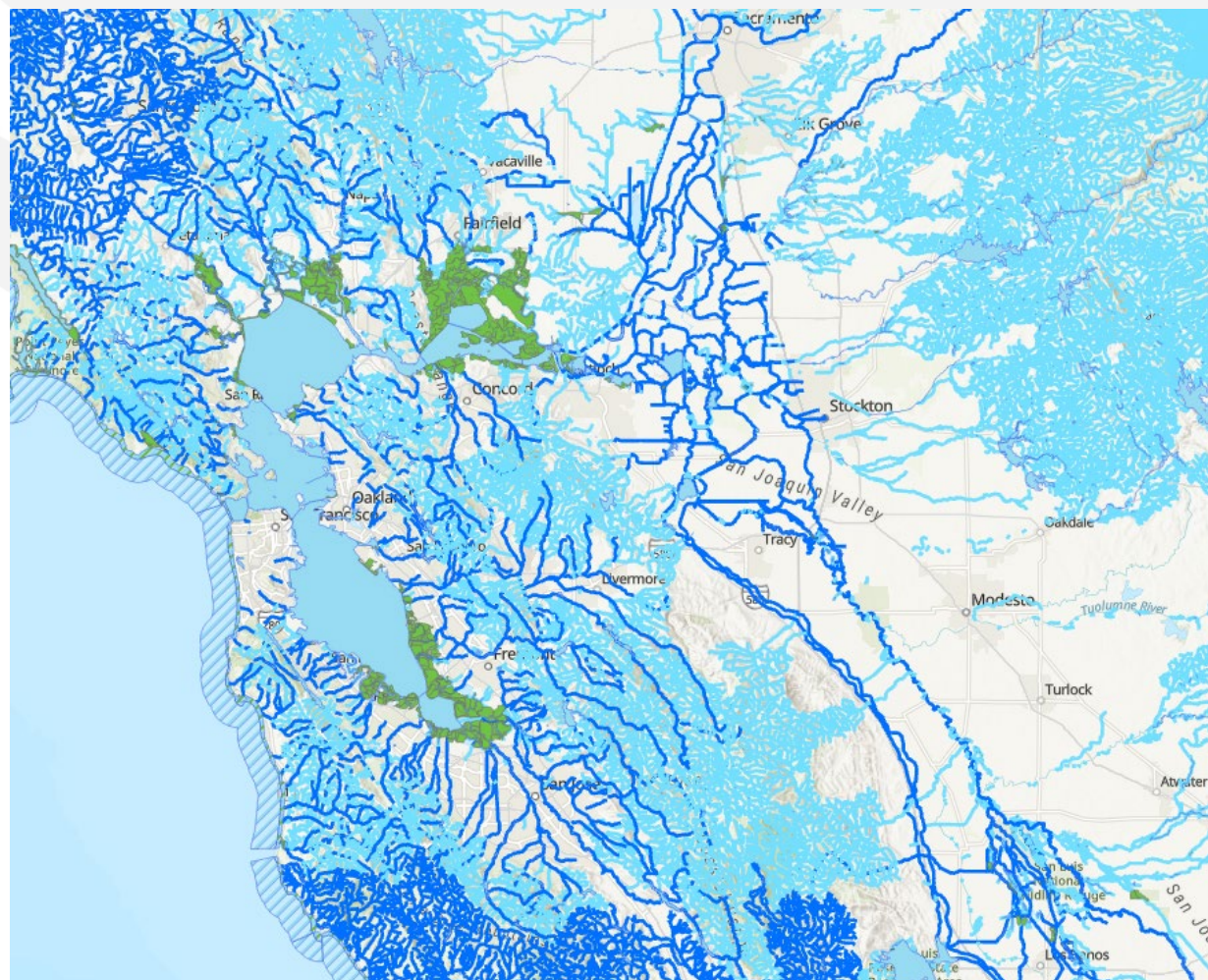
- [www.waterboards.ca.gov/plans\\_policies](http://www.waterboards.ca.gov/plans_policies)

## California Toxics Rule

- 40 C.F.R. § 131.38
- <https://www.epa.gov/wqs-tech/water-quality-standards-establishment-numeric-criteria-priority-toxic-pollutants-state>

# Beneficial Use Map Portal

- [https://www.waterboards.ca.gov/resources/data\\_databases/basin\\_plan\\_portal.html](https://www.waterboards.ca.gov/resources/data_databases/basin_plan_portal.html)





# Shellfish Harvesting Standards



## Beneficial Use

Shellfish Harvesting (SHELL): Includes uses of water that support habitats suitable for the collection of filter-feeding shellfish (e.g., clams, oysters and mussels) for human consumption, commercial, or sport purposes

## Objective

The median **total coliform** density shall not exceed 70 per 100 mL, and not more than 10 percent of the samples shall exceed 230 per 100 mL

# Shellfish Harvesting Total Coliform Objective

## History

- The objective has not substantially changed since the first 1972 Ocean Plan

## Basis for the Objective

- Staff is researching the basis
- Total coliform MPN of 70/100mL is equivalent to the fecal material contributed from 1 person diluted in about 8 million cu. ft. of coliform-free water
- Shellfish from waters at this level are unlikely to be involved in the spread of disease that can be attributed to fecal contamination
- The objective is the same as the total coliform standard used by the FDA in their 2019 National Shellfish Sanitation Program Guidance



# Shellfish Harvesting Standards

## **Next steps for State Water Board staff:**

- Consider the reasonability and attainability of the current total coliform objective
- Consider the appropriateness of combining or separating commercial and sport consumption uses and objectives
- Consider tribal consumption uses and objectives

State Water Board ranked this effort as a high priority project in the 2019 Ocean Plan Review (priority 6 out of 22)



# Recreation Standards

## Beneficial Uses

### Water Contact Recreation (REC-1):

- Uses of water for recreation activities involving body contact with water, where ingestion of water is reasonably possible.
- Swimming, wading, water-skiing, skin and scuba diving, surfing, white water activities, fishing, use of natural hot springs

### Non-Contact Water Recreation (REC-2):

- Uses of water for recreational activities involving proximity to water, but not normally involving body contact with water
- Picnicking, sunbathing, hiking, beachcombing, camping, boating, tidepooling, sightseeing, aesthetic enjoyment in conjunction with these activities

### Limited Water Contact Recreation (LREC-1):

- “Uses of water for recreational activities involving body contact with water, where full REC-1 use is limited by physical conditions such as very shallow water depth and restricted access and, as a result, ingestion of water is incidental and infrequent” (Los Angeles Region Basin Plan).

# Recreation Standards

## Objectives for Inland Freshwater and Inland Saline Waters

Applicable Waters	Objective Elements	Estimated Illness Rate (NGI): 32/1,000	
		Magnitude	
	Indicator	6-week GM	STV
All waters where the salinity is equal to or less than 1 ppth 95 percent or more of the time	<i>E. coli</i>	100cfu/100mL	320cfu/100mL
All waters where the salinity is greater than 1 ppth more than 5 percent of the time	Enterococci	30cfu/100mL	110cfu/100mL

### Geometric Mean (GM)

- Calculated every six-weeks
- Rolling

### Statistical Threshold Value (STV)

- Calculated every calendar month
- Static
- Shall not be exceeded by more than 10 percent of samples collected

# Recreation Standards

## Objectives for Ocean Waters

### Enterococci

Indicator	Estimated Illness Rate (NGI): 32/1,000	
	Magnitude	
	6-week GM	STV
Enterococci	30cfu/100mL	110cfu/100mL

#### Geometric Mean

- Calculated every six-weeks
- Rolling

#### Statistical Threshold Value

- Calculated every calendar month
- Static
- Shall not be exceeded by more than 10 percent of samples collected

### Fecal Coliform

Indicator	Magnitude	
	30-day GM	SSM
Fecal Coliform	200/100mL	400/100mL

#### Geometric Mean

- Calculated every 30 days using five most recent samples

#### Statistical Sample Maximum

- The maximum value not to be exceeded in any single sample



# REC-1 Bacteria Objectives

## History

- Statewide objectives took effect in February 2019

## Basis for the *E. coli* & Enterococci Objectives

- U.S. EPA's 2012 Recreational Water Quality Criteria
  - Identified acceptable estimated gastrointestinal illness rates due to pathogens that are protective of water contact recreation
  - Translated the risk of illness to *E. coli* and enterococci densities

## Basis for the Fecal Coliform Objective

- California-specific epidemiological data suggested fecal coliform may be a better indicator of gastrointestinal illness than enterococci during certain types of exposure and environmental conditions.



# Recreation Bacteria Objectives



## Next steps for State Water Board staff:

- Review ocean bacteria objectives to consider California-specific epidemiological data
- Consider changes to averaging time periods, geometric means, and statistical threshold values for clarity and consistency
- Consider the appropriateness of the 1 ppth salinity boundary
- Review other parameters as possible indicators of risk

State Water Board ranked this effort as a very high priority standards project in the 2019 Ocean Plan Review (priority 2 out of 22)

# Can Standards be Changed?

- Yes, via rule-making to amend a Basin Plan or statewide water quality control plan
- It is a multi-year effort
- Includes
  - CEQA-equivalent analysis
  - consultations with California Tribes
  - vetting with stakeholders and other agencies
  - careful consideration of public comments





# Challenges & Opportunities

## Challenge

- More projects than staff capacity
- Keeping up with latest science so objectives ensure best protection of beneficial uses
- Use of different bacteria measuring methods and data comparability

## Opportunity

- Hearing your priorities throughout this Summit
- Apply illness rate to other parameters that better align with risk
- Make use of research and learn from early implementers
- Develop and utilize quality assurance plans and document procedures

# Thank you

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