

California Coastal Beach Safety Monitoring Program

Overview

Home to over 400 publicly accessible coastal beaches (beaches), the State of California attracts millions of beachgoers each year, as local community members and tourists alike enjoy the beaches for swimming, surfing, and other recreational activities. In some instances, beach water quality may be unsafe for beachgoers due to high bacteria levels that can cause illness if ingested. As a result, the California Coastal Beach Safety Monitoring Program (Beach Program) was established to track changes in coastal water quality and notify the public when concerns arise.

How it Started

The Beach Program was established in 1997 in accordance with [Assembly Bill 411](#) (AB 411, Wayne), which requires local health officers to regularly test beach water quality to determine compliance with public health-based bacteria standards set by the [California Department of Public Health](#).

The State Water Resources Control Board (State Water Board) manages the Beach Program including oversight of the local agency grant funding administration and data reporting, while local health agencies are responsible for water quality testing and public notifications.

Monitoring Sites

The Beach Program efforts are handled by 16 local environmental health agencies in California (Figure 1). At a minimum,

monitoring sites are located at beaches that have over 50,000 visitors annually and have storm drains that flow during the summer. Approximately 50 percent of the beaches in California fall within the AB 411 criteria and require monitoring. Monitoring occurs weekly from April 1st through October 31st, but some local health agencies monitor more often depending on needs and funding. Local agencies upload all water quality results to the public [BeachWatch](#) online database, regardless of testing frequency or collection date.

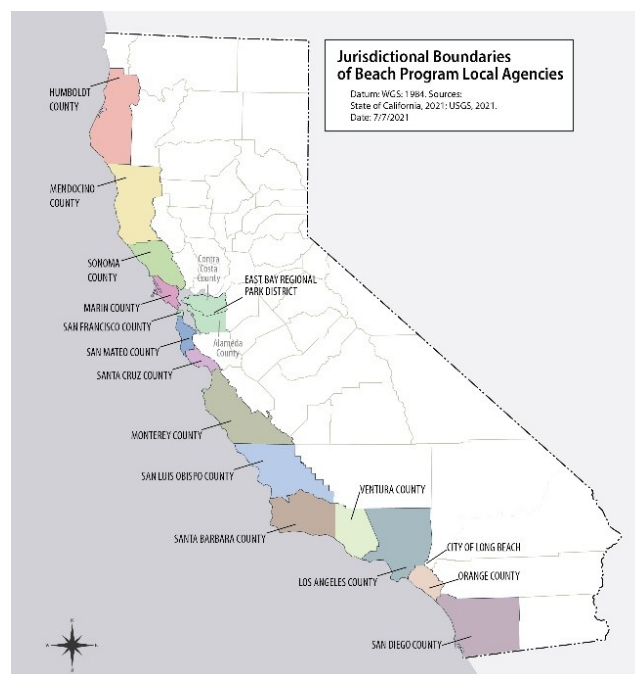


Figure 1: Map of Jurisdictional Boundaries for Local Health Agencies' Monitoring Sites

Human Health Risk

Changes in water quality may indicate ocean water pollution due to events such as sewage spills, storm drain discharges, or other inland sources from human activity. The Beach Program plays an important role in tracking pollution that can make people sick when they come into contact with unsafe water. Swimming in polluted water can cause fever, vomiting, throat infections, or other serious illnesses.

Bacteria Standards

AB 411 requires that local health agencies test three (3) types of bacteria: total coliform, fecal coliform, and enterococcus, that serve as appropriate indicators of health risks in ocean water. Total coliform is a group of bacteria that is present throughout nature and found in the intestinal tracts of humans and animals. Fecal coliform is a subgroup of total coliform bacteria. Similarly, enterococcus are bacteria found in human, pet, or wildlife intestines and waste. If the tested beach water contains high levels of these bacteria, it indicates that the water may be unsafe and could make people sick.

Bacteria levels are monitored through single sample testing using a certified laboratory, and through longer-term statistical testing, known as Mean of the Logarithms (commonly referred to as Geometric Mean).

Based on a single sample, bacteria levels in beach water from any sampling station should not exceed:

- A) 1,000 total coliform bacteria per 100 milliliters, if the ratio of fecal/total coliform bacteria exceed 0.1; or
- B) 10,000 total coliform bacteria per 100 milliliters; or
- C) 400 fecal coliform bacteria per 100 milliliters; or
- D) 104 enterococcus bacteria per 100 milliliters.

Geometric Mean is a statistical method used on samples collected from beach water tested at least once a week for five weeks. Those five weekly samples must all fit within any 30-day sampling period.

Based on Geometric Mean results, the bacteria levels in beach water should not exceed:

- A) 1,000 total coliform bacteria per 100 milliliters; or
- B) 200 fecal coliform bacteria per 100 milliliters; or
- C) 35 enterococcus bacteria per 100 milliliters.

Notification Systems

The local health agencies are responsible for notifying the public of changes in beach water quality through telephone hotlines and beach signage if water testing shows unsafe bacteria levels.

Local Agency Hotlines

Hotlines are maintained and updated by each local agency to inform the public of all beaches currently closed, posted, or restricted.

Signage

Local health agencies also post physical signs at legal beach entrances. Public beach entrances can be found on the California Coastal Commission's [YourCoast Map](#) (Figure 2).

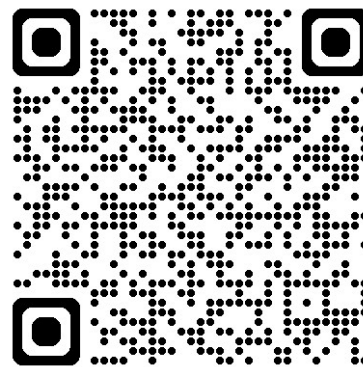


Figure 2:
QR Code to
the Map
Showcasing
Public
Access
Points to
California's
Coastal
Beaches

At a minimum, warning signs are posted to inform the public of the nature of the situation and the possibility of risk to public health. Other advisories may include rain advisories, high bacteria warning postings, and beach closures.

Rain advisories are used to warn beach goers against swimming during and three (3) days after a rain event, as rainwater can carry bacteria from many sources into beach waters. Postings warn the public of bacteria levels that exceed health standards, to indicate a potential risk. A beach closure is put in place following an emergency event such as a sewage spill and indicates a definite health risk.

Posted signs may have small differences depending on the location and local agency but serve a similar purpose.

Beach Program signage examples



Moving Forward

The Beach Program is continuously evolving to best serve present and future generations through a commitment to advancing protection of public health, the environment, and beneficial uses at California's public beaches. The State Water Resources Control Board also aims to advance the priorities of all California communities through [Racial Equity](#) and [Tribal Engagement](#) work.

Additional Resources

Local health agency websites and telephone hotlines

[East Bay Regional Park District website](#) or (888) 327-2757

[Humboldt website](#) or (707) 445-6215

[Long Beach website](#) or (562) 570-4199

[Los Angeles website](#) or (800) 525-5662

[Marin website](#) or (415) 473-2335

Mendocino: (707) 234-6627

[Monterey website](#) or (831) 755-4599

[Orange website](#) or (714) 433-6400

[San Diego website](#) or (619) 338-2073

[San Francisco website](#) or (415) 242-2214

[San Luis Obispo website](#)

or (805) 788-3411

[San Mateo website](#) or (650) 599-1266

[Santa Barbara website](#) or (805) 681-4949

[Santa Cruz website](#) or (831) 454-4624

[Sonoma website](#) or (707) 565-6552

[Ventura website](#) or (805) 662-6555

Statewide websites

[Online BeachWatch Program information](#)

[Safe to Swim Maps, Beach Advisories and Closures Dashboard](#)

[California Coastal Commission Beach Entrance Map](#)

Contact Us

For further information, contact us at: DWQ-beach-monitoring@waterboards.ca.gov

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