Maximizing the Effectiveness of Water Quality Data Collection & Dissemination

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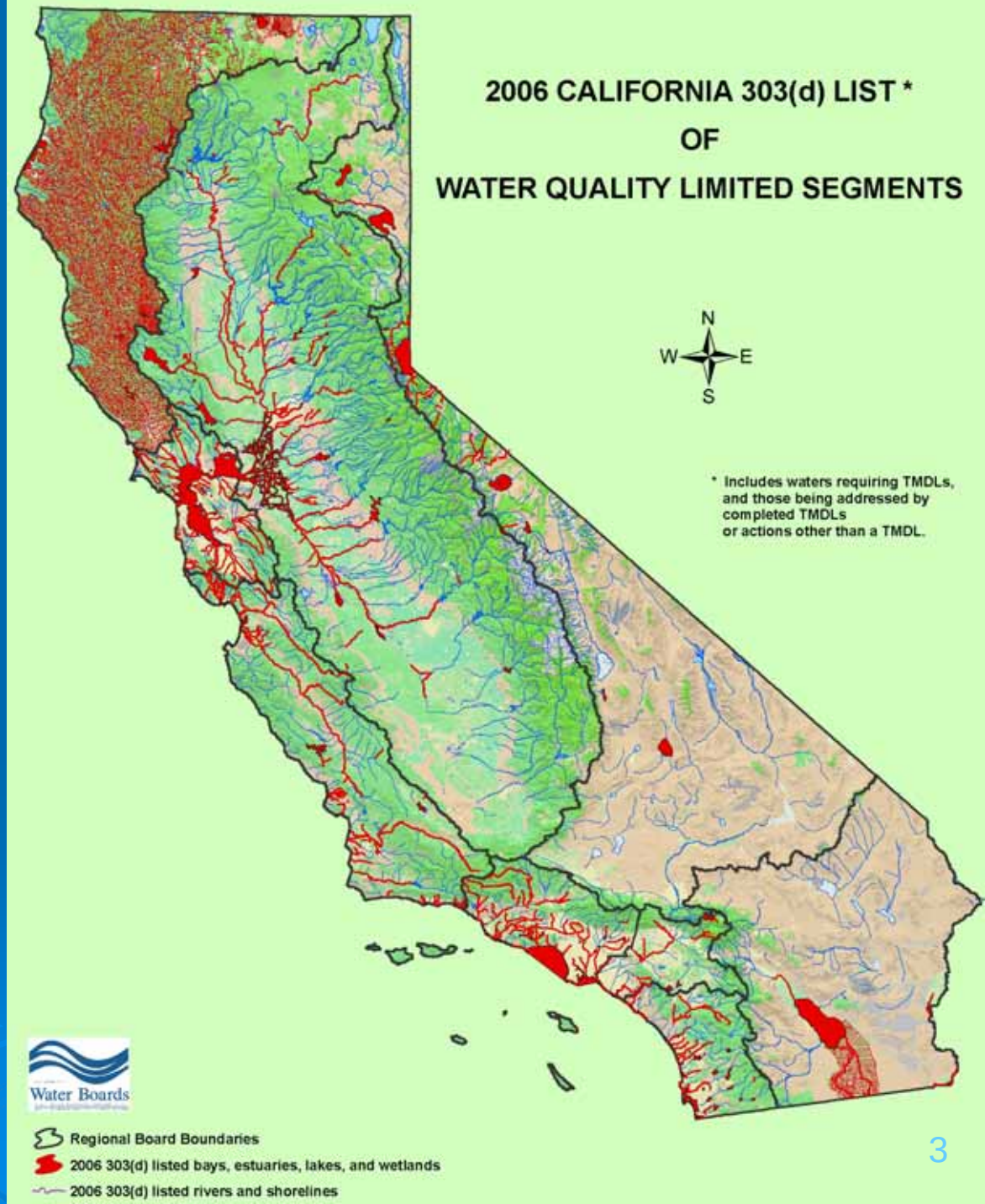
State Water Resources Control Board

Everyone Needs Data

- 211,000 miles of rivers & streams
- >1.6 million acres lakes
- 1,100 miles of coastline
- 1.3 million acres of bays and estuaries
- 15 million acre-feet of groundwater extracted per year

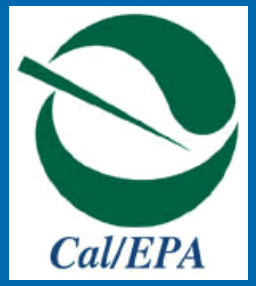
The Water Quality Information Problem



The Response – Senate Bill 1070

- Became state law in 2006
- Required formation of California Water Quality Monitoring Council
- Memorandum of Understanding between
  - California Environmental Protection Agency
  - California Natural Resources Agency
- By December 1, 2008: Monitoring Council recommendations
  - Maximize efficiency and effectiveness of existing water quality data collection and dissemination
  - Ensure collected data available to decision makers and public

Monitoring Council Members



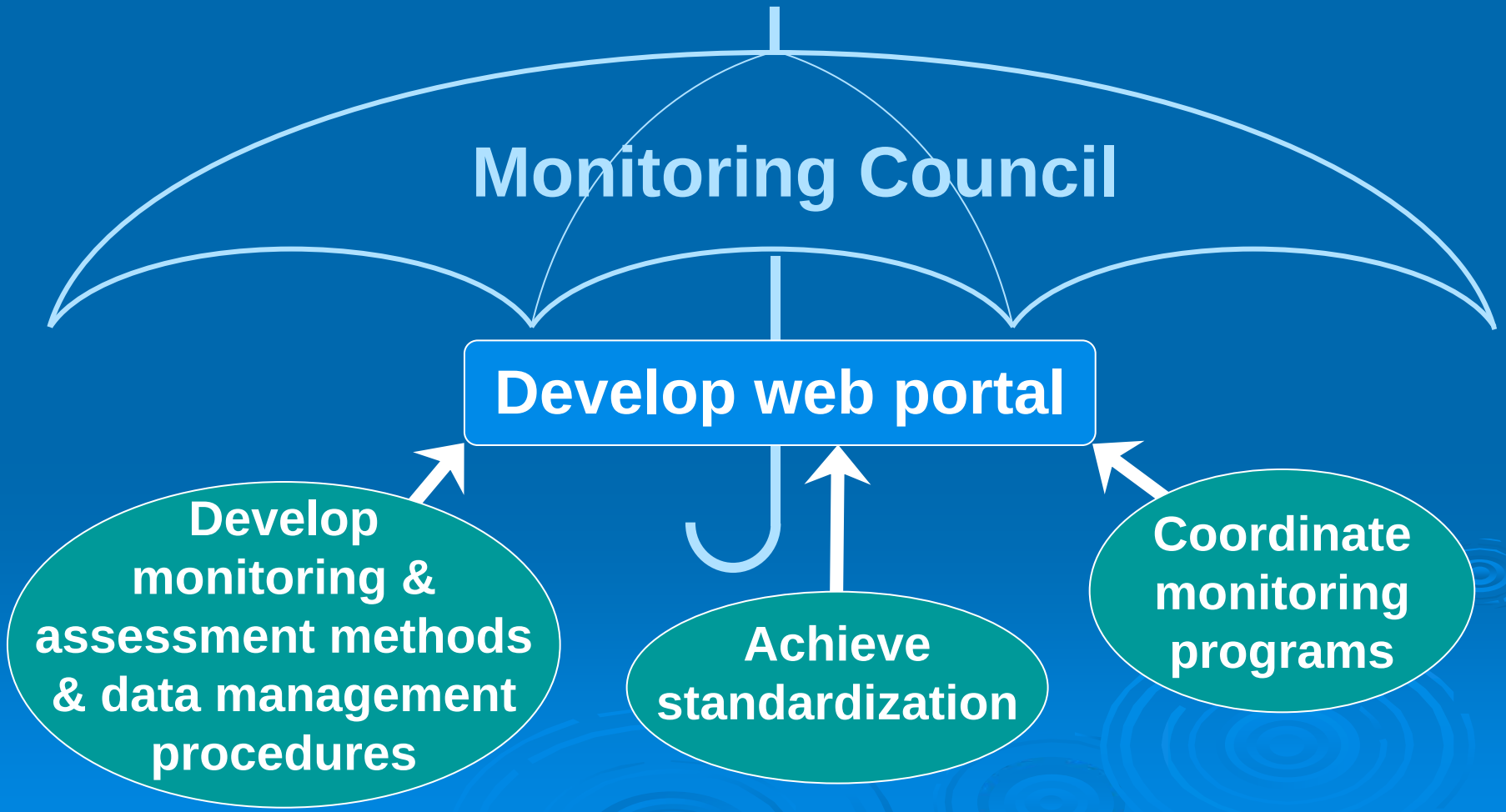
The Monitoring Council's Solution

Don't get mired in technical details!

- Focus first on streamlined data access
  - Theme-based web portals
  - Directly address users' questions
  - Single global point of entry
- Theme-specific workgroups
- Overarching Monitoring Council guidance

Theme-Specific Workgroups

Issue-experts represent key stakeholders



Role of the Monitoring Council

- Establish policies and guidelines
- Clearinghouse for
  - Standards
  - Guidelines
  - Collaboration

State of California
ENVIRONMENTAL PROTECTION AGENCY
RESOURCES AGENCY

CALIFORNIA WATER QUALITY MONITORING COUNCIL

- Cal/EPA
- The Resources Agency
- About the California Water Quality Monitoring Council
- State & Regional Water Boards
- Web Portal Partners
- Monitoring Programs, Data Sources & Reports
- Water Quality Standards, Plans and Policies
- Regulatory Activities
- Enforcement Actions
- Research

- About SWAMP
- SWAMP Tools

SWAMP
Surface Water Ambient Monitoring Program

Welcome to My Water Quality

This web portal, supported by a wide variety of public and private oraganizations, presents California water quality monitoring data and assessment information from a variety of perspectives that may be viewed across space and time.

IS OUR WATER SAFE TO DRINK?

Safe drinking water depends on a variety of chemical and biological factors regulated by a number of local, state, and federal agencies. More >>

IS IT SAFE TO SWIM IN OUR WATERS?

Swimming safety of our waters is linked to the levels of pathogens that have the potential to cause disease. More >>

IS IT SAFE TO EAT FISH AND SHELLFISH FROM OUR WATERS?

Aquatic organisms are able to accumulate certain pollutants from the water in which they live, sometimes reaching levels that could harm consumers. More>>

ARE OUR AQUATIC ECOSYSTEMS HEALTHY?

The health of fish and other aquatic organisms and communities depends on the chemical, physical, and biological quality of the waters in which they live. More>>

WHAT STRESSORS AND PROCESSES AFFECT OUR WATER QUALITY?

Benefical uses of our waters are affected by emerging contaminants, invasive species, trash, global warming, acidification, pollutant loads, and flow. More>>

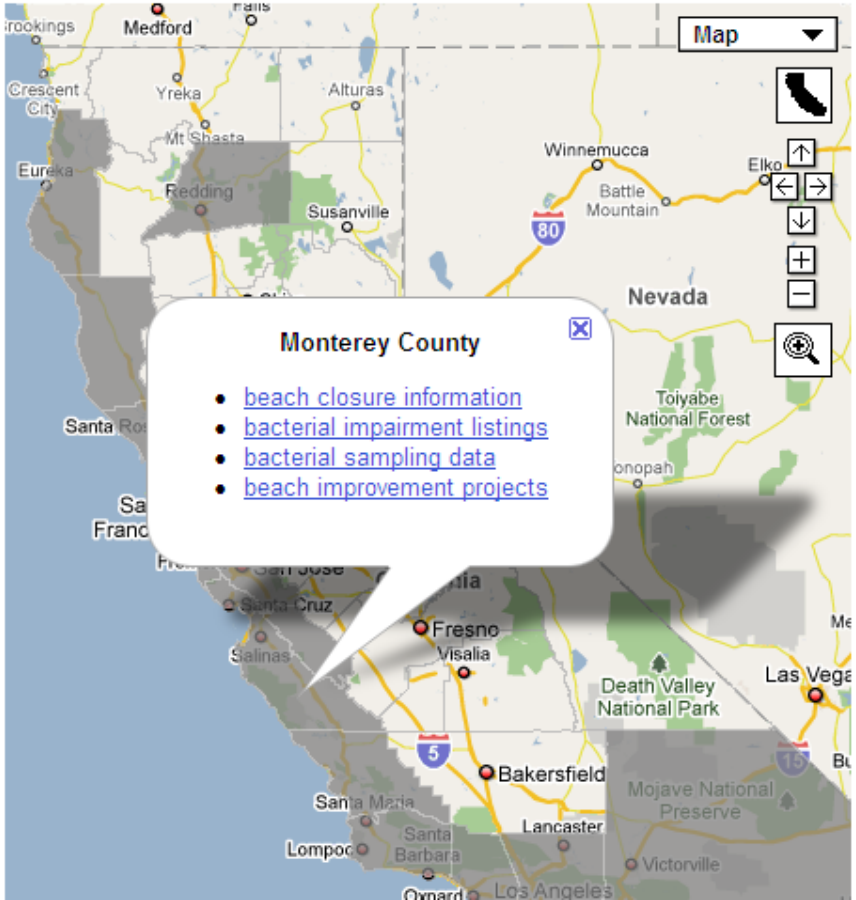
» State & Regional Water Boards

SAFE TO SWIM LINKS

» Pollution Sources & Health Risks
» Laws, Regulations & Standards
» Regulatory Activities
» Enforcement Actions
» Research
» Monitoring Programs, Data Sources & Reports

Is It Safe to Swim In Our Waters?

Show County Info: -- Select County --



Beach water quality monitoring and strong pollution prevention measures are critical for protecting beach goers from waterborne diseases. Monitoring is performed by county health agencies, publicly owned sewage treatment plants, other dischargers, environmental groups and numerous citizen-monitoring groups.

View Monitoring and Assessment Information

» Click on a county or;
» Select from the Show County Info menu.

QUESTIONS ANSWERED

» Can I swim at my beach, lake, or stream?
» How clean was my beach, lake, or stream during the past week or month?
» What are the long-term trends at my beach, lake, or stream?
» Which beaches, lakes, and streams are currently closed by county health agencies?
» Which beaches, lakes, and streams are listed by the State as impaired?
» Are the problems getting better?

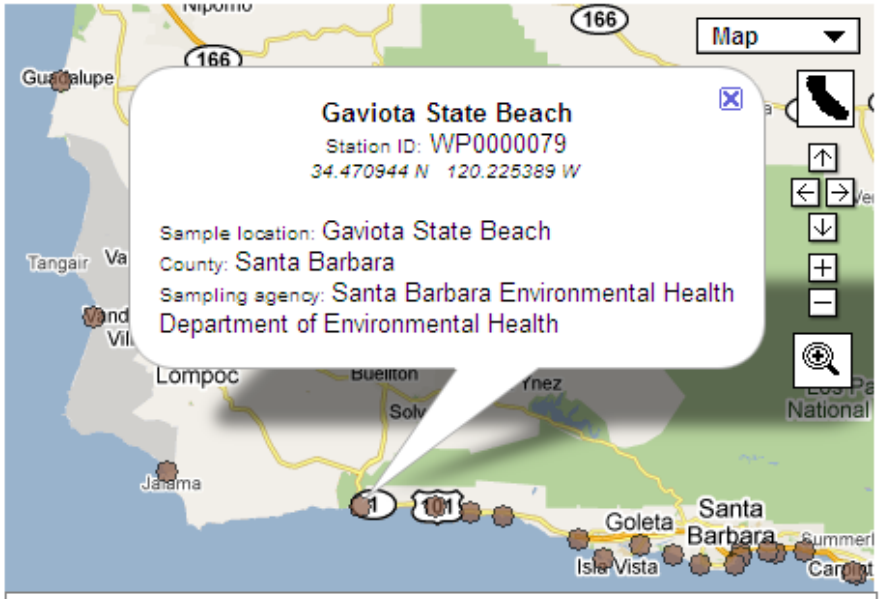
» State & Regional Water Boards

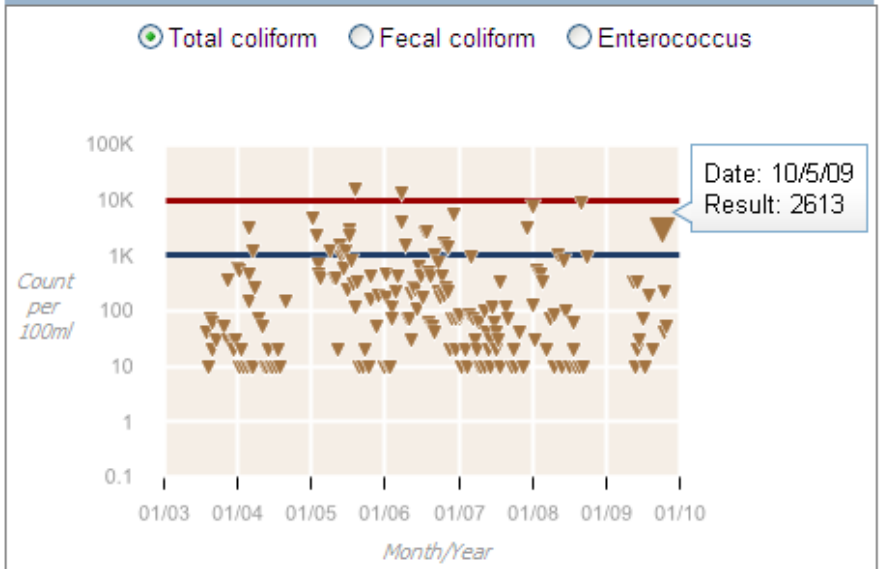
SAFE TO SWIM LINKS

» Pollution Sources & Health Risks
» Laws, Regulations & Standards
» Regulatory Activities
» Enforcement Actions
» Research
» Monitoring Programs, Data Sources & Reports

What are the Long-Term Bacteria Trends at My Beach, Lake, or Stream?

Santa Barbara ☐ Show county





Understanding trends allows decision makers to determine whether pollution sources are increasing in magnitude and/or frequency and the effectiveness of control measures.

View Trends in Bacterial Indicator Levels

The interactive map below provides sampling results for coastal beach monitoring locations over time. A few county health agencies provide creek and lake information along with ocean beach information. Otherwise, lake and stream information is currently unavailable electronically.

- To find bacterial sample results for a particular site, first select the county, then click on a site location. The results will appear to the right of the map. Results may take time to appear.
- Place your mouse cursor over a point on the chart to see the date and sample result for a particular sample event.

Horizontal lines on the charts represent bacterial water quality objectives specified in the 2005 California Ocean Plan.

- **Red** is the Single Sample Maximum objective. Sample points above this line represent violations of the objective.
- **Blue** is the 30-day Geometric Mean objective - the geometric mean of the five most recent samples from each site. *Note: Individual sample results above this line do not necessarily represent violations.*

National Beach Closures and Postings Trends

GOVERNOR SCHWARZENEGGER

Visit his Website

- State & Regional Water Boards

SAFE TO EAT FISH LINKS

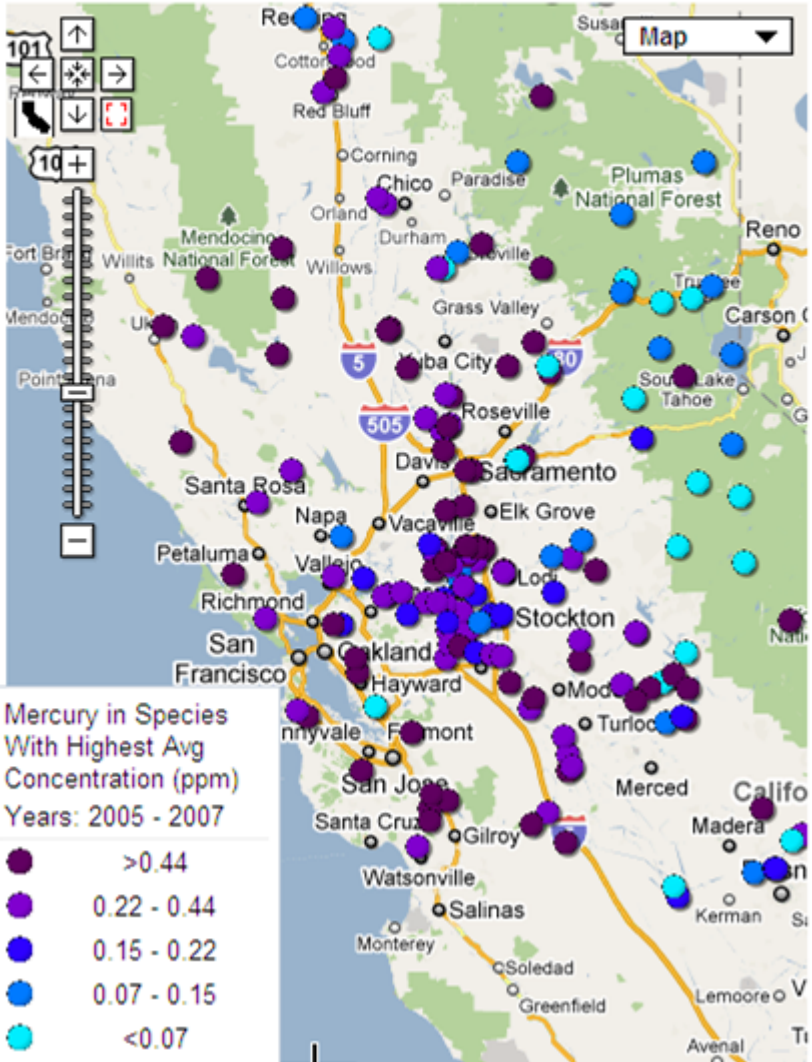
- Pollution Sources & Health Risks
- Laws, Regulations, Standards & Guidelines
- Assessment Thresholds
- Regulatory Activities
- Enforcement Actions
- Research
- Monitoring Programs, Data Sources & Reports
- Statewide Perspective
- National Perspective

What are the Levels and Long-Term Trends in My Lake, Stream, or Ocean Location?

Select location from list.

Zoom to county:

Show counties



Mercury in Species With Highest Avg Concentration (ppm)
Years: 2005 - 2007

	>0.44
	0.22 - 0.44
	0.15 - 0.22
	0.07 - 0.15
	<0.07

Contaminant Data

This interactive map allows you to explore fish contaminant data for your fishing locations.

- Select parameters of interest from the menus below and click on the "Go" button. The map will display average concentrations for the selected water bodies.
- To view data for all species at your water body, trends, or comparisons with nearby water bodies, click on a map location or select a water body from the menu above the map.
- Thresholds displayed on the map can be modified by clicking the Change Thresholds link in the map legend.

Select Species:

Species With Highest Avg Concentration

Select Contaminant:

Mercury

Select Start Date:

2005

Select End Date:

2007

Go Reset

- State & Regional Water Boards

SAFE TO EAT FISH LINKS

- Pollution Sources & Health Risks
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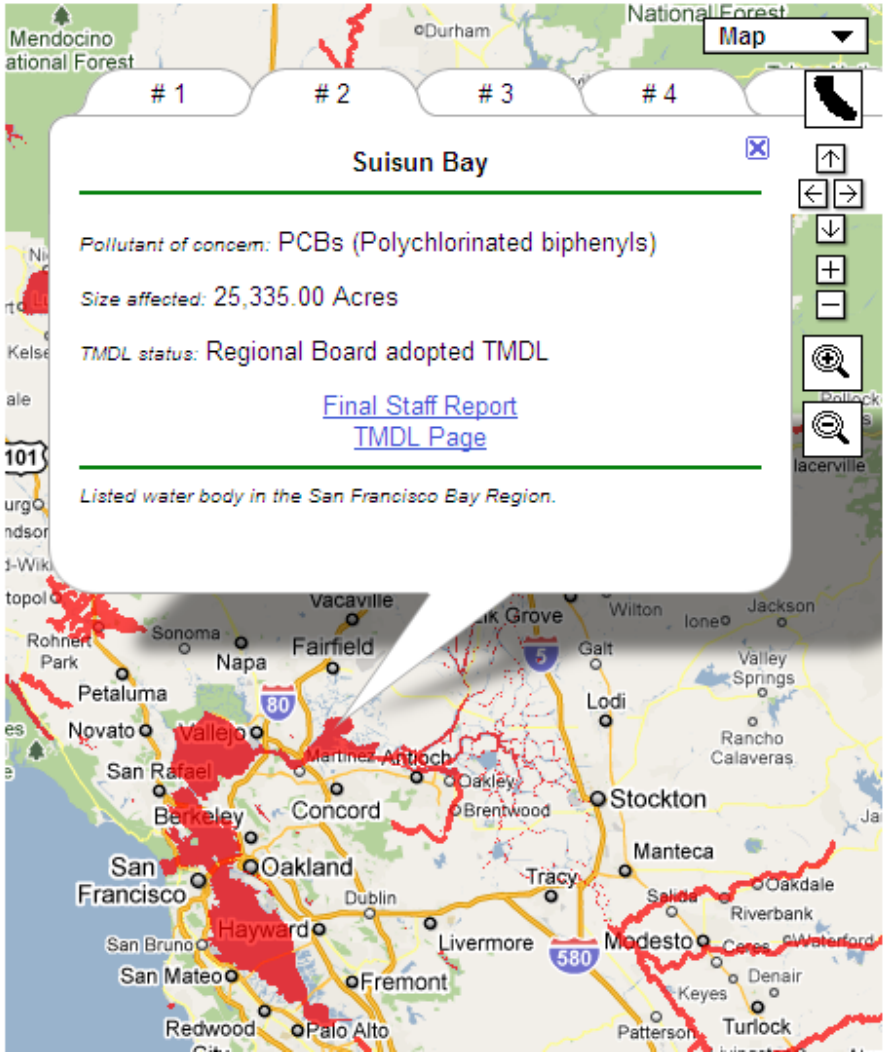
Which Lakes, Streams, or Ocean Locations Are Listed By The State As Impaired?

County: All

Water Body:

Show county



This interactive map shows which of California's waters are listed as impaired for uses related to fish or shellfish consumption by humans and which pollutants are involved. Also shown are the Total Maximum Daily Load (TMDL) projects to reduce pollutants to acceptable levels.

View 2006 303(d) Listing and current TMDL Information:

- Click on a water body (shown in **red**), or
- Select (or type) the county in the County box, then select the water body from the Water Body menu, or
- Select (or type) the water body name directly in the Water Body box
- Use the magnifier tool to zoom into an area of interest (more highlighted water bodies will appear)
- Click on the state outline tool to return to a statewide view

Impaired Water Bodies

Listing a water body as impaired in California is governed by the State Water Board's 303(d) Listing Policy.

The State and Regional Water Boards assess water quality data for California's waters every two years to determine if they contain pollutants at levels that exceed protective water quality criteria and standards. This biennial assessment is required under Section 303(d) of the federal Clean Water Act.

The map shows California waters that were placed on the State's most current (2006) 303(d) list and

→ State & Regional Water Boards

AQUATIC HEALTH LINKS
→ Stressors
→ Laws, Regulations, Standards & Guidelines
→ Regulatory Activities
→ Enforcement Actions
→ Research
→ Monitoring Programs, Data Sources & Reports

Are Our Aquatic Ecosystems Healthy?

California has many types of aquatic habitats. Follow the links below to learn more…

WETLANDS

Wetlands form along the shallow margins of deepwater ecosystems such as lakes, estuaries, and rivers. They also form in upland settings where groundwater or runoff makes the ground too wet for upland vegetation. More >>

ESTUARIES

Estuaries are unique habitats found where rivers and the ocean mix. They feature a diverse array of plants and animals adapted to life along this mixing zone. More >>

LAKES

California lakes, supporting deep water, wetlands, riparian woodlands, offer a quiet refuge for plants, animals and humans alike. More >>

STREAMS & RIVERS

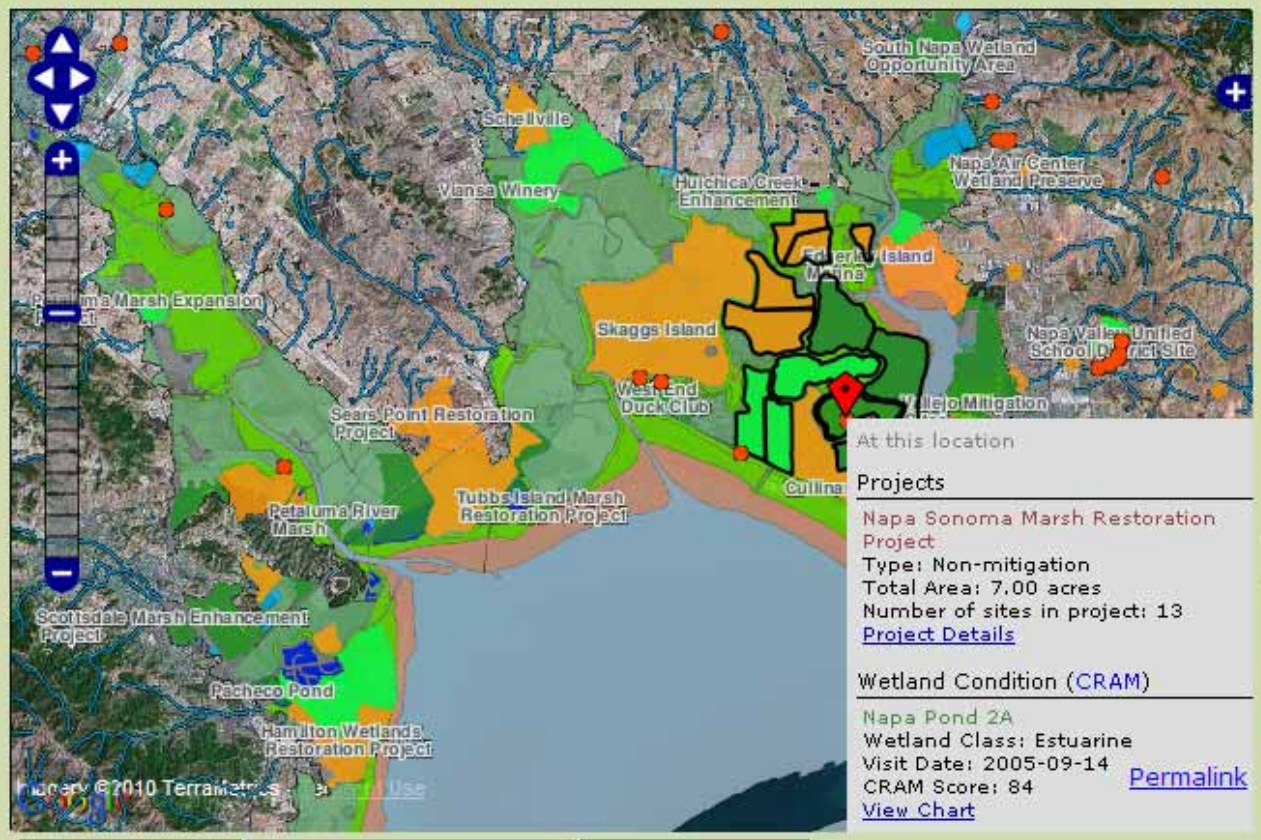
California's streams and rivers flow through diverse habitats, from mountain canyons, valleys, deserts, estuaries and urban areas. Riparian woodlands develop along stream banks and floodplains, linking forest, chaparral, scrubland, grassland, and wetlands. More >>

OCEAN

California has 1,100 miles of shoreline and 220,000 square miles of state and federal oceanic habitat, featuring one of the world's most diverse marine ecosystems. More >>

CALIFORNIA WETLANDS

Search



Need help using this map?

Layers
- [x] Wetland Projects
- [x] Condition (CRAM)
- [x] Modern Habitats
- [ ] Historical Habitats

Background
- ( ) Basic
- ( ) USGS Topo Maps
- (•) Google Satellite
- ( ) Google Terrain

At this location

Projects

Napa Sonoma Marsh Restoration Project
Type: Non-mitigation
Total Area: 7.00 acres
Number of sites in project: 13
Project Details

Wetland Condition (CRAM)

Napa Pond 2A
Wetland Class: Estuarine
Visit Date: 2005-09-14
CRAM Score: 84
View Chart
Permalink

Legend

Projects
- Construction completed
- Construction in-progress
- Construction planned
- Approximate boundary

Condition
- 80 CRAM Assessment

Wetland Projects | Wetland Condition (CRAM) | Zoom to Location

CRAM Site Name	Wetland Class	Visit Date	Overall Score
Adobe Creek at Petaluma Adobe State Park	Riverine	2005-08	72
Alamo Creek	Riverine Confined	2009-01	77
Alhambra Creek at Martinez AEC - Restored	Riverine Unconfined	2007-11	49
Alhambra Creek - Refernce	Riverine Unconfined	2007-11	43
Alhambra Downtown - Reference	Riverine Unconfined	2007-11	39
Alhambra Dowtown - Restored	Riverine Unconfined	2007-11	44
American canyon	Riverine Confined	2006-10	58

Portals

IS IT SAFE TO SWIM IN OUR WATERS?

- Coastal beaches, bays & estuaries – July 2009

IS IT SAFE TO EAT FISH AND SHELLFISH?

- Sport fish – December 2009

IS OUR WATER SAFE TO DRINK?

- Groundwater – Fall 2009

ARE OUR AQUATIC ECOSYSTEMS HEALTHY?

- Wetlands – March 2010
- Streams – Spring 2009
- Marine Rocky Intertidal – Summer 2009
- Estuaries – ?

California's Comprehensive Water Quality Monitoring Program Strategy

www.waterboards.ca.gov/mywaterquality/monitoring_council

My Water Quality Portals

www.CaWaterQuality.net

California Estuaries Workgroup and Portal
Opportunities and Benefits

- Initial focus on San Francisco Bay-Delta
  - California's largest estuary
- Identify
  - Key assessment questions
  - Data available and needed to answer questions
  - Redundancies, data gaps and inefficiencies in current monitoring framework
  - Methods and tools to assess the data
- Display data through
  - California Estuaries Portal
  - Linked from the *My Water Quality* website

California Estuaries Workgroup and Portal Opportunities and Benefits

- Identify existing monitoring that address Delta RMP needs
- Integrate data on biology, contaminants, and flow
  - Make available for multiple purposes
- Identify issues related to QA/QC and data comparability
- Identify and refine assessment questions to address needs
  - Decision makers, legislators, agency staff, scientists, and public
- Ensure transparent process through workgroup structure and function
- Partner with other Monitoring Council workgroups to access additional data types, assessment tools and data management systems

California Estuaries Workgroup and Portal
Opportunities and Benefits

- Deliver answers to the public
  - Highlight important work of agencies involved
- Collaboration improves efficiency of monitoring and assessment programs
- Broader assessments possible through information sharing
- Automates agency annual reporting
- Allow decision makers and legislators understand how their dollars are spent
  - Beyond bean counting – Are conditions getting better?
  - Big picture status and trends
  - Access to information to guide future expenditures

Monitoring Council Strategy Addresses Issues Identified by Delta RMP

- Assessment questions drive assessment and reporting process and design of RMP
- Scientifically credible process ensures data appropriately assessed, interpreted, & reported
- Data are accessible
- When data from multiple sources are integrated, it is appropriate to do so
- Appropriate level of QA/QC ensure data are of quality needed to answer assessment questions

CALIFORNIA

WATER QUALITY MONITORING COUNCIL

Questions ?