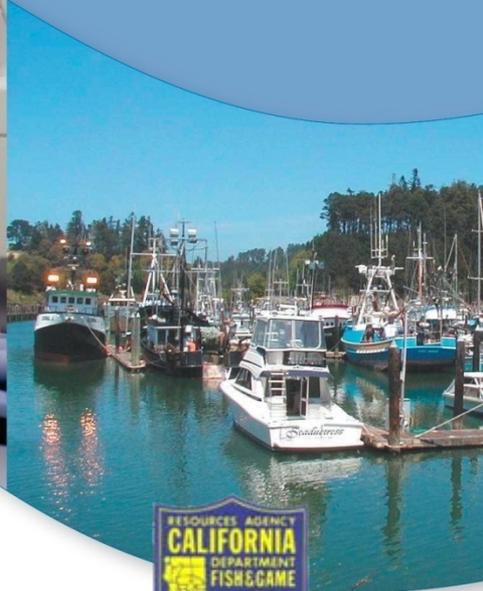


SWAMP Overview

CWQMC

9 June 2010



Val Connor & Karen Larsen
State Water Board

Karen Worcester

Central Coast Regional Water Board

Tom Suk

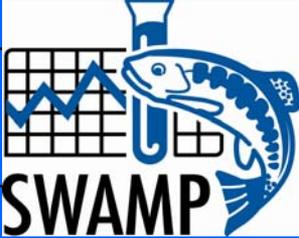
Lahontan Regional Water Board



Overview

- Statewide Programs
- Regional Programs
- Infrastructure & Tools
- Institutional Constraints



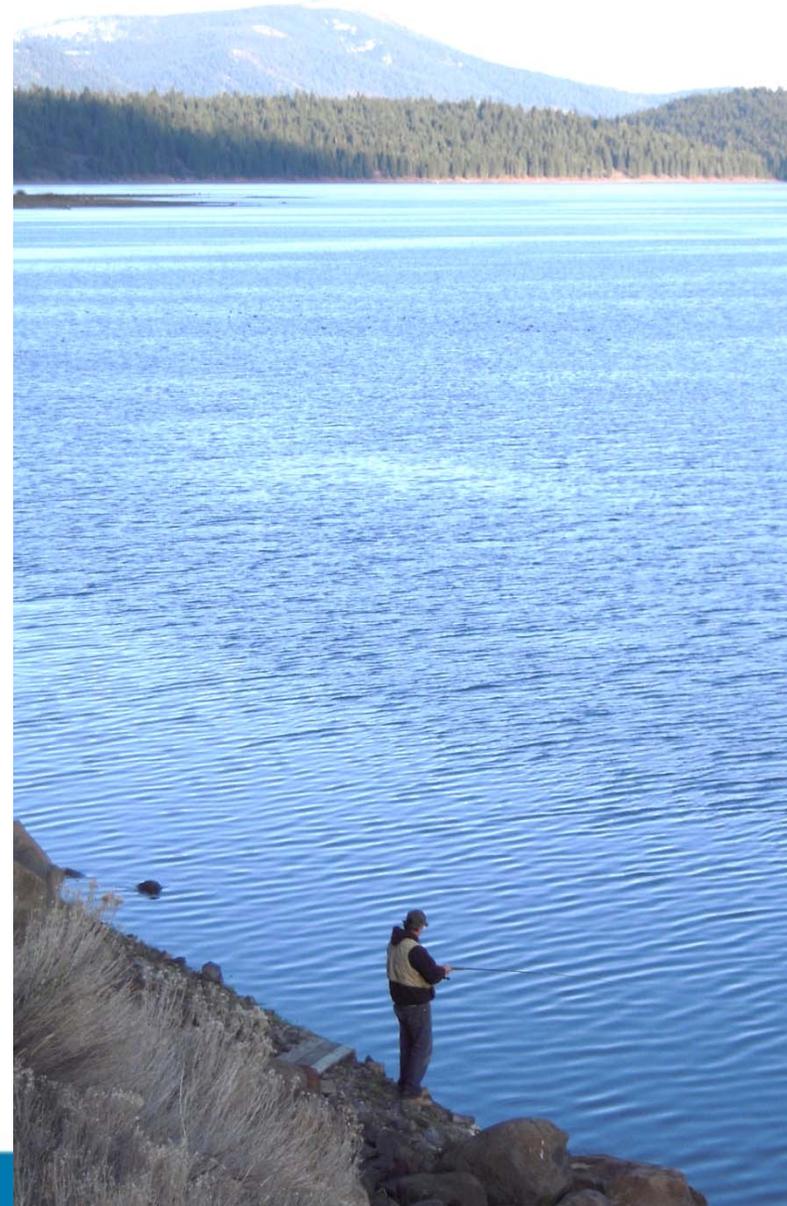
Waterbody Type	Beneficial Uses			
	Aquatic Life	Fishable	Swimmable	Drinkable
Streams				
Large Rivers				
Lakes				
Coastal Waters				
Bays & Estuaries				
Wetlands				

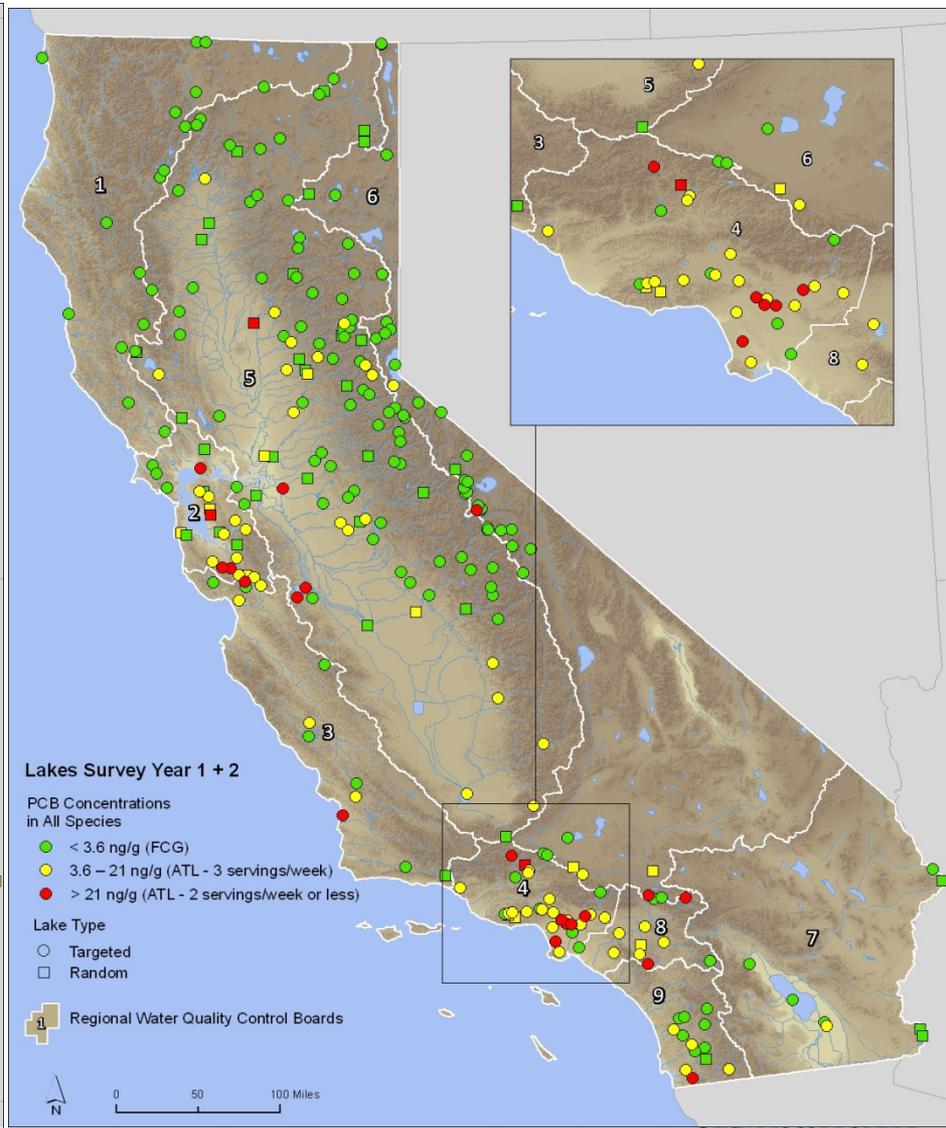
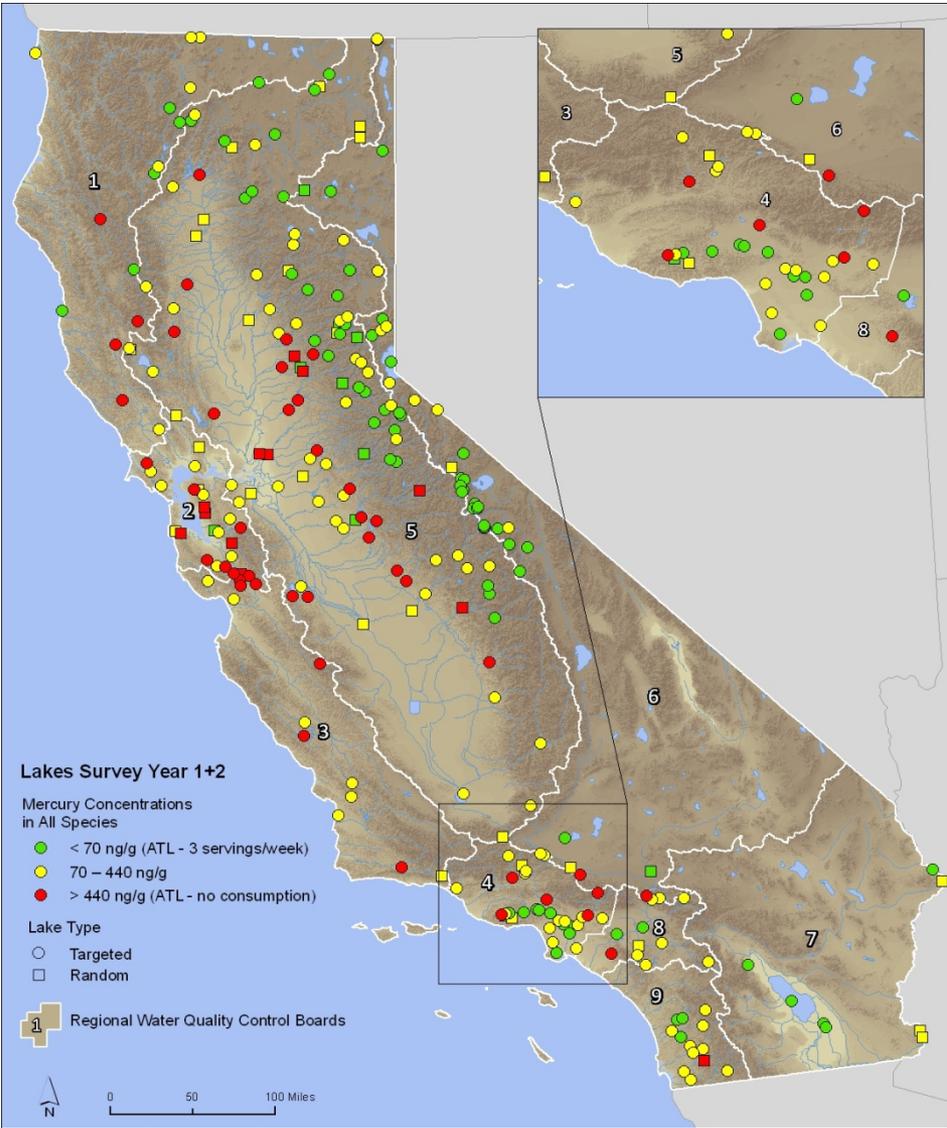
Waterbody Type	Beneficial Uses			
	<i>Aquatic Life</i>	Fishable	<i>Swimmable</i>	<i>Drinkable</i>
Streams				
Large Rivers				
Lakes				
Coastal Waters				
Bays & Estuaries				
Wetlands				

Fishable – Large Rivers, Lakes, Coastal Waters

Bioaccumulation Monitoring Program

- What is the status of contamination in sportfish from lakes, coastal waters, and large rivers?





Ambient Monitoring Program



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



→ State & Regional Water Boards

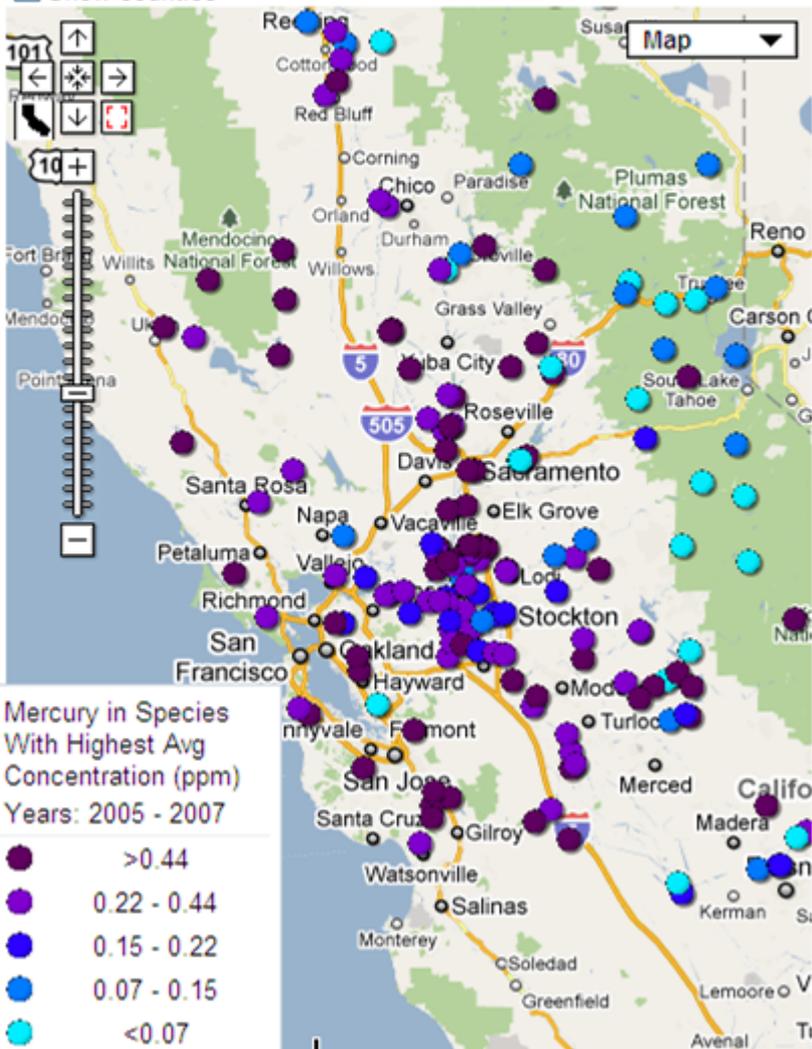
SAFE TO EAT FISH LINKS

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

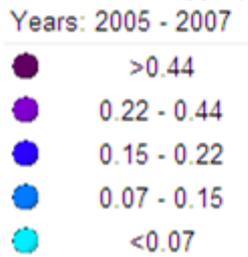
Select location from list.

Zoom to county:

Show counties



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



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

Waterbody Type	Beneficial Uses			
	Aquatic Life	Fishable	Swimmable	Drinkable
Streams				
Large Rivers				
Lakes				
Coastal Waters				
Bays & Estuaries				
Wetlands				

Aquatic Life in Streams

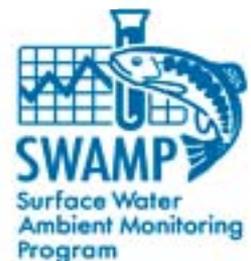
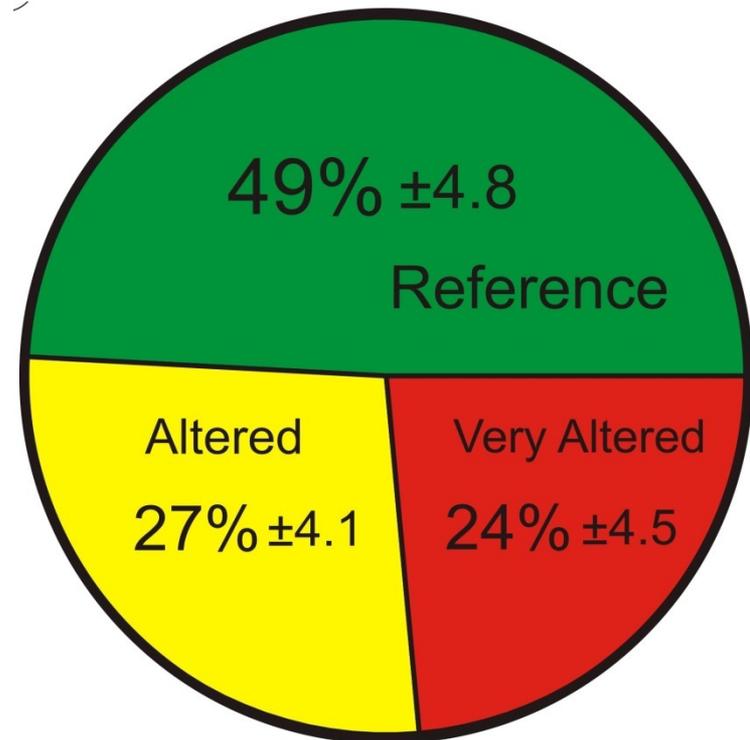
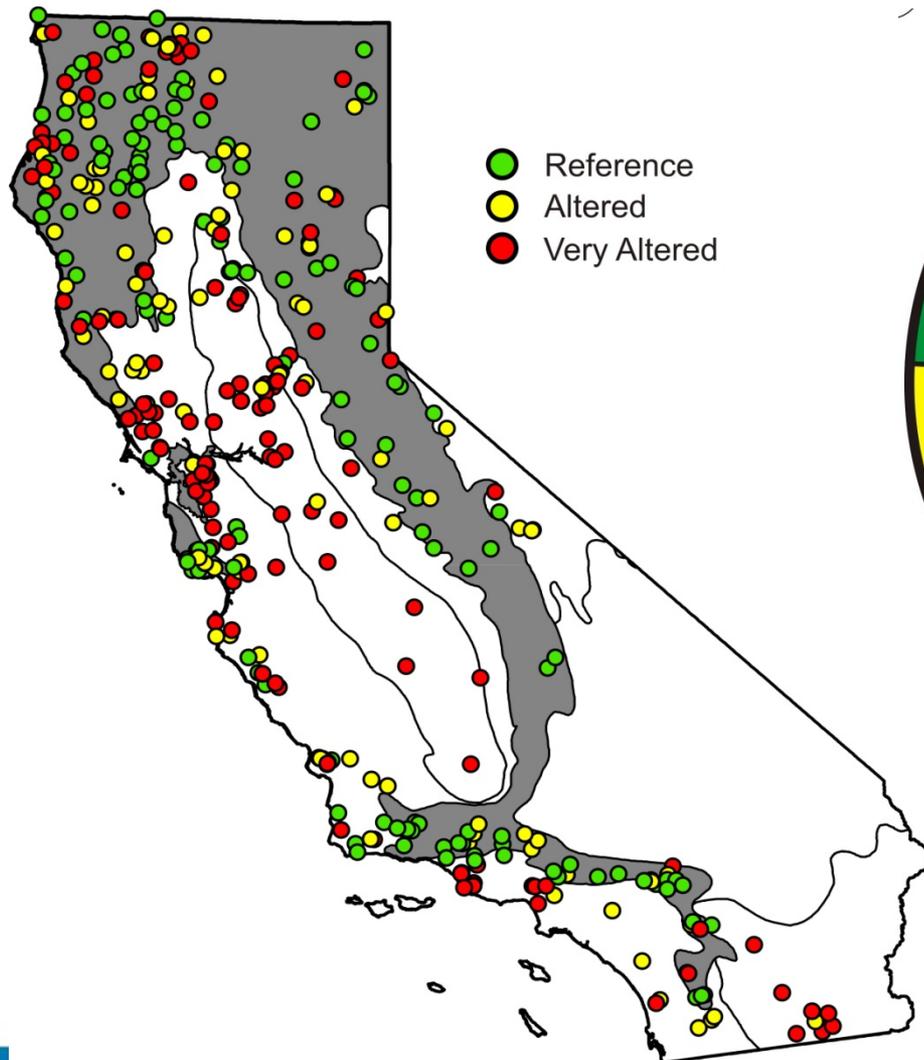
Bioassessment Monitoring Program

- Perennial Streams Assessment
- Reference Condition Management Plan
- Biological Objectives



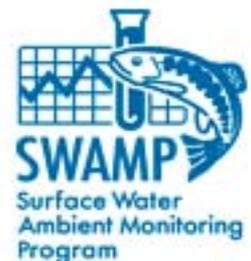
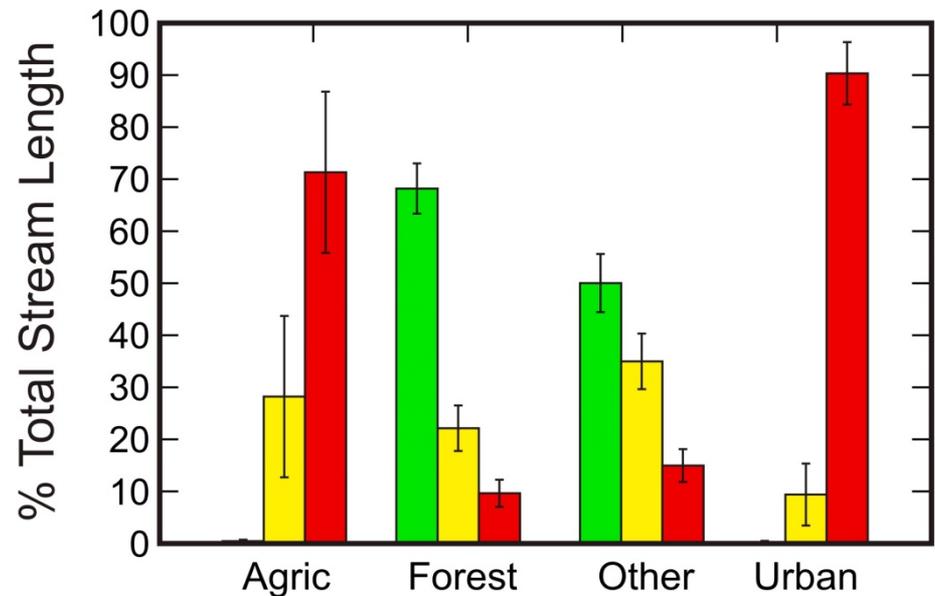
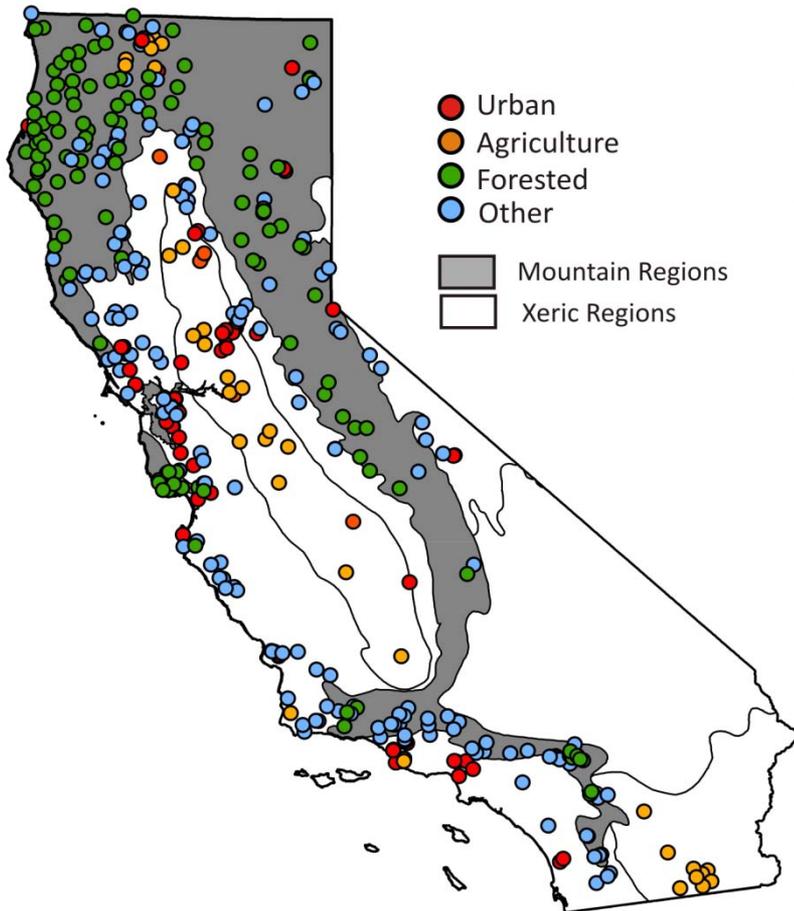
Aquatic Life in Streams

Bioassessment Monitoring Program – Perennial Streams Assessment



Aquatic Life in Streams

Bioassessment Monitoring Program – Perennial Streams Assessment



Aquatic Life in Streams

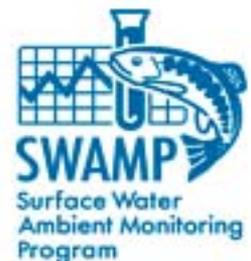
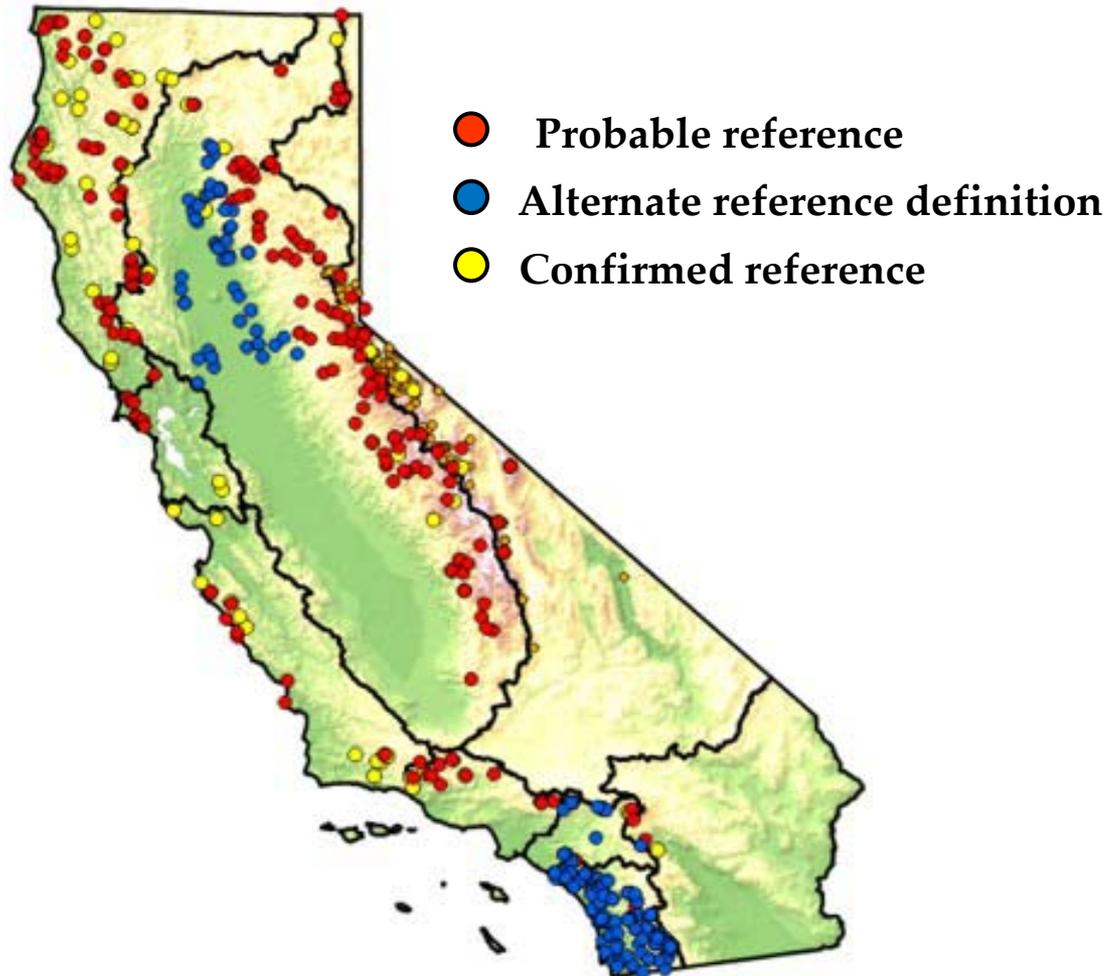
Bioassessment Monitoring Program – Perennial Streams Assessment

<i>Chemistry</i>	<i>Habitat</i>	<i>Land Use</i>
Nutrients	Percent Fines/Sands	Urban
Salinity	Embeddedness	Agriculture
Turbidity	Bed Stability	Impervious Surface
Suspended Solids	Instream Habitat	Forested
	Riparian Habitat	



Aquatic Life in Streams

Bioassessment Monitoring Program – Reference Condition Management Plan



Aquatic Life in Streams – Biological Objectives

Technical Infrastructure

Indicators

Assemblages
Physical Habitat

Methods
Field & Lab

Reference
Condition

Quality Assurance

Data Management

Regulatory Framework

Narrative
Objectives

Numeric
Endpoints

Regulatory Programs

Permitting

303(d)/TMDL

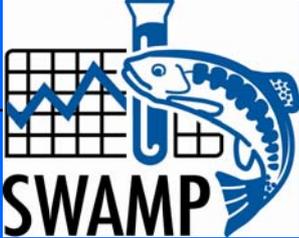
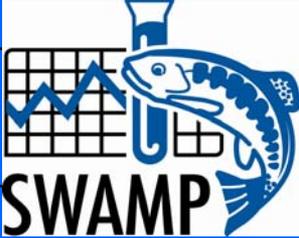
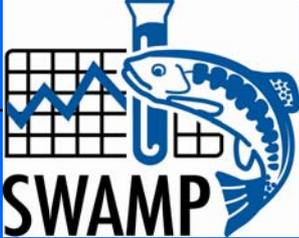
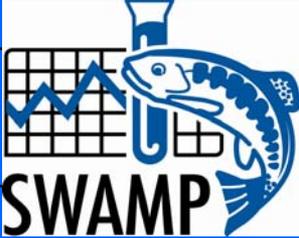
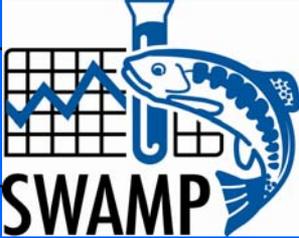
305(b) Assmt

401 Cert

BMP Efficacy

Interpretation

Implementation

Waterbody Type	Beneficial Uses			
	Aquatic Life	Fishable	Swimmable	Drinkable
Streams				
Large Rivers				
Lakes				
Coastal Waters				
Bays & Estuaries				
Wetlands				

Aquatic Life in Streams & Large Rivers

Stream Pollution Trends Monitoring Program

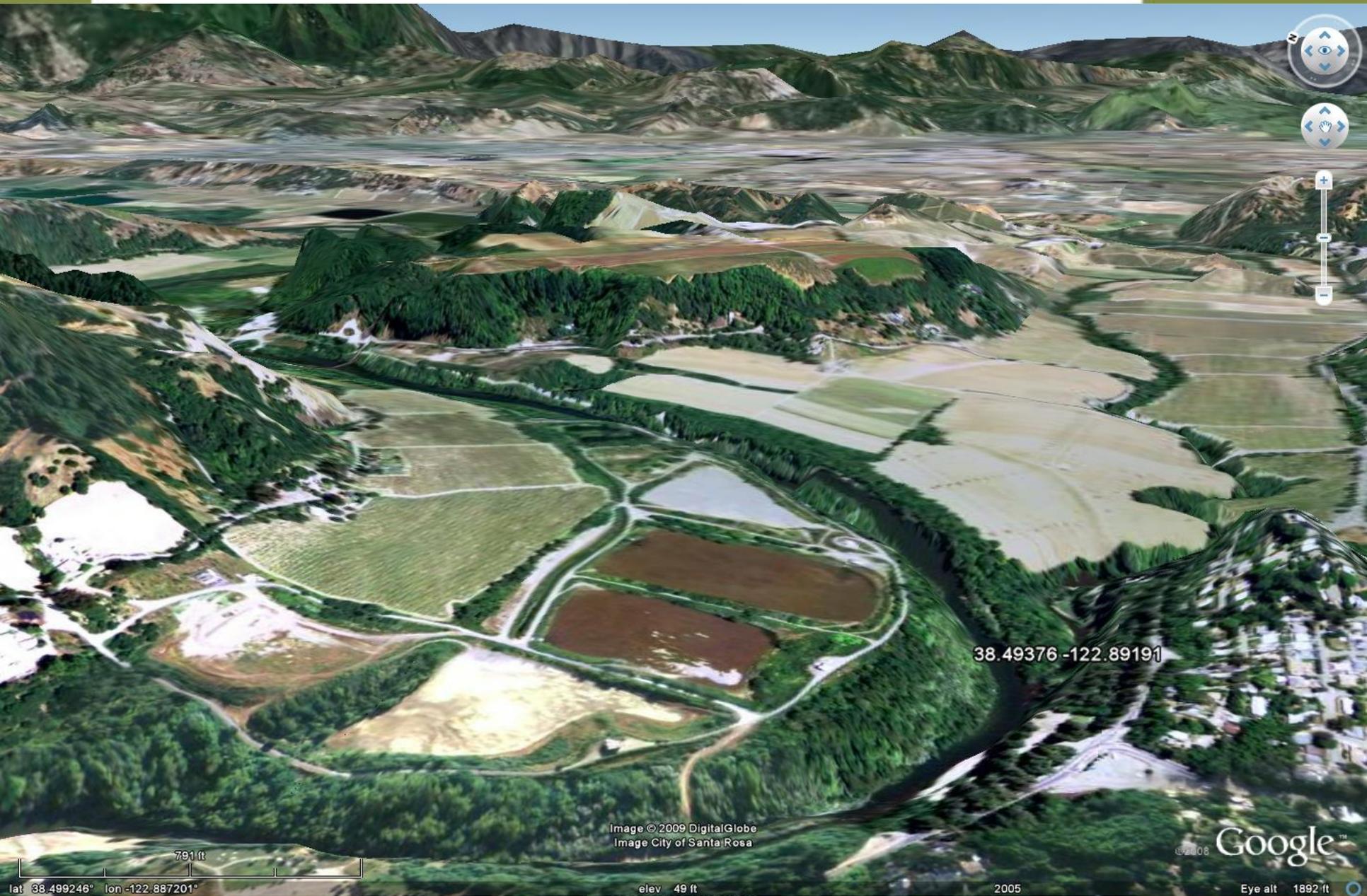
- What is the status of stream contamination and is it getting better or worse?
- What effect does land use and management actions have on stream contamination?





- Fine sediment from depositional areas
- Pesticides, PCBs, PAHs, PBDEs
- Trace metals, TOC, grain size, total P
- Sediment toxicity





38.49376 -122.89191

Image © 2009 DigitalGlobe
Image City of Santa Rosa

© 2008 Google™

791 ft

lat 38.499246° lon -122.887201°

elev 49 ft

2005

Eye alt 1892 ft

Aquatic Life - Streams

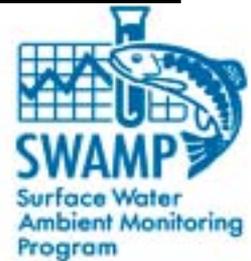
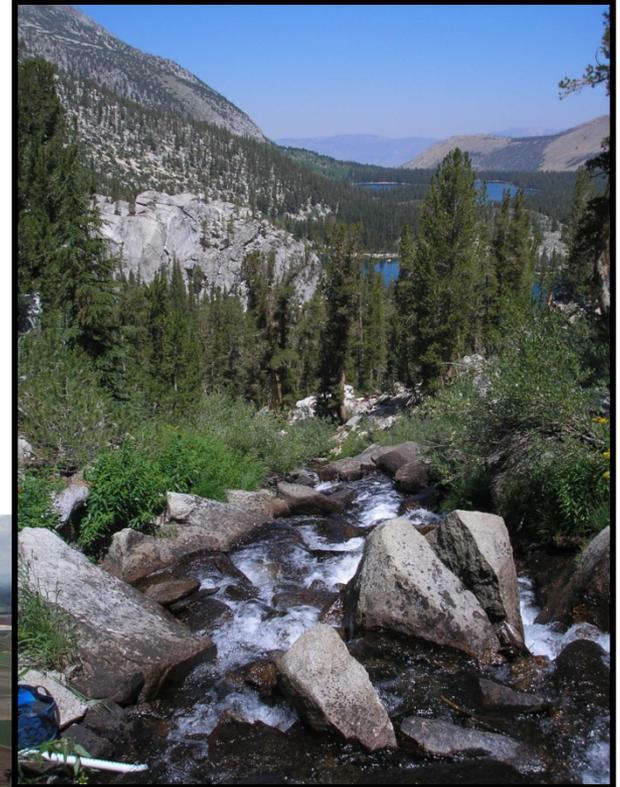
*Bioassessment
Program*

*Stream
Pollution
Trends
Monitoring*

Healthy Streams Partnership



Our Nine Regions are Diverse

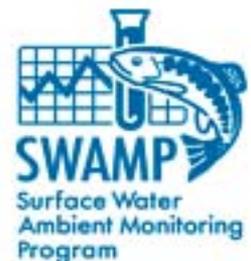


SWAMP meeting

What are Regions doing?

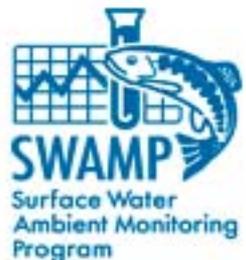
- Routine watershed monitoring
- Collaborative regional programs
- Special studies
- Source identification
- Emerging contaminants

and more....



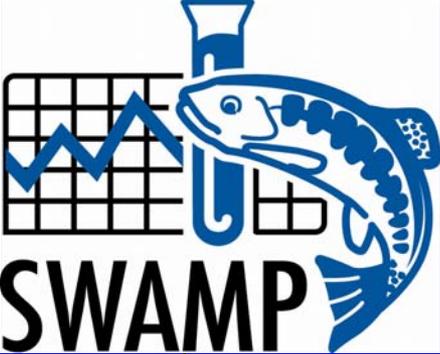
Why is Regional Monitoring Critical?

- Targeting information gaps
- Responsive to regional and local concerns
- Higher spatial and temporal scale
- Scale matches management needs
- Measuring success and long-term trends
- Integrating/Coordinating/Partnering/Leveraging
- Monitoring resources for “unleveraged” areas
- Piloting innovations



Waterbody Type	Beneficial Uses			
	Aquatic Life	Fishable	Swimmable	Drinkable
Streams				
Large Rivers				
Lakes				
Coastal Waters				
Bays & Estuaries				
Wetlands				

Regions can target information gaps

Waterbody Type	Beneficial Uses			
	Aquatic Life	Fishable	Swimmable	Drinkable
Streams				
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Coastal Waters				
Bays & Estuaries				
Wetlands				

Responsiveness to local and regional problems

WILLIAM H. WALKER, 醫學博士
健康服務中心主任
WIDENIL BERTNER, 醫學博士
公共衛生部主任





康縣
公共衛生部
507 Center Avenue, Suite 200
Martinez, California
94553-4863



食用 SAN PABLO 水庫魚類的臨時衛生警告*

SAN PABLO水庫

為保障公眾健康，康縣健康服務部與加州危害評估辦事處 (OEHHA) 共同發佈以下臨時警告。提醒公眾注意在San Pablo水庫中採獲的魚類含有較高的汞和多氯化聯 (二) 苯含量。這些物質對身體健康有潛在危險。由於這些物質在體內累積，長期經常食用水庫中的魚類將不利於胎兒和兒童的成長，並會影響孕婦或老年人的神經系統和免疫系統。增加日後患上癌症的危險。

育齡婦女及兒童應特別注意以下指引

魚類	育齡婦女及兒童 (17歲及以下) (每月食用次數)	非育齡婦女及男子 (每月食用次數)
斑鯉鯪	1	1
鱈魚	1	1
黑鱈鯪	1	4
黑刺日魚	4	12
紅鱈魚	12	12
所有其他魚類	4	12

本警告不影響已認證過濾的

水庫 San Pablo 水庫的飲用水。供應的飲用水是安全的。

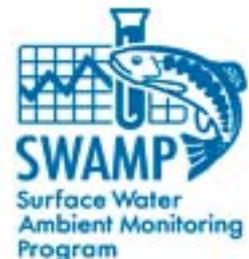
除舊金山灣和三角洲及塔瑪利灣外，阿拉米達縣、康縣、馬林縣和聖何塞拉列斯等其他九處水庫亦有警告發佈。在這些水庫採獲的魚類每月建議食用量不能增加。如需了解詳細的警告資訊，請致電 OEHHA：(510) 622-3170，或訪問 OEHHA 的網站：http://www.oehha.ca.gov/fish/san_pablowarning.html。欲了解有關商業性魚類消費的警告資訊，請參閱：<http://www.cdpr.ca.gov/fish.html>。

欲了解更多有關 San Pablo 水庫的資訊，請聯絡：
康縣健康服務部：(925) 662-8376，或森林管理區管理員 Elizabeth Hill：510-383-2028。
*這份警告將取代之前於 2000 年發佈的臨時警告。

* 包括來自其他水庫，但沒有具體健康問題的魚類。

Examples:

- Follow-up on statewide findings
- Lake follow-up with OEHHA for posting in several Regions
- Ammonia studies in the Bay Delta
- Emerging contaminant studies

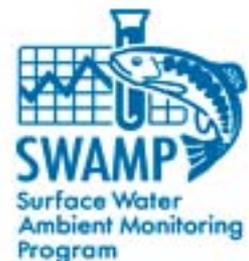
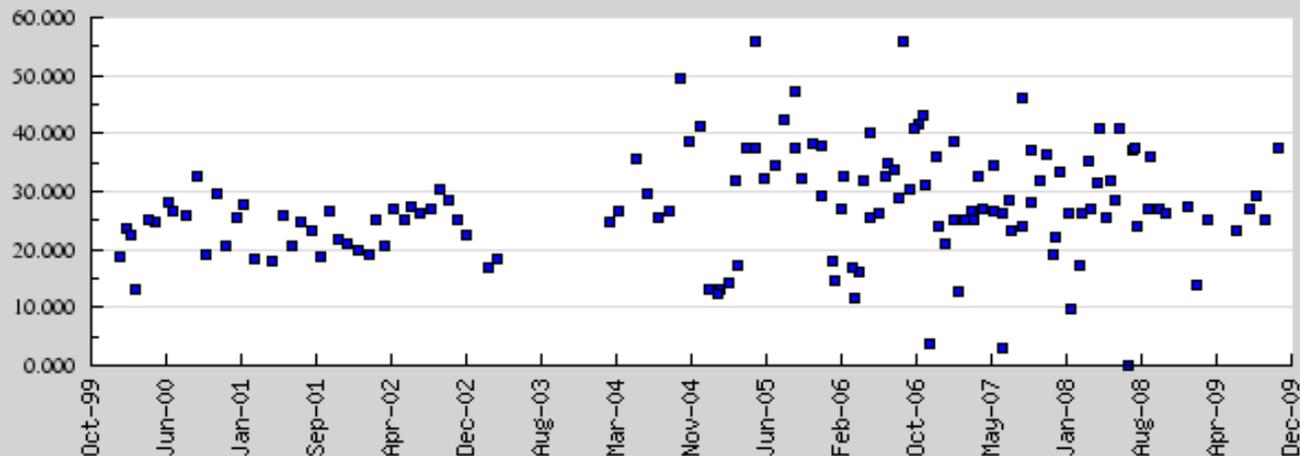


Higher spatial and temporal resolution

- Long term trend monitoring, as frequently as monthly
- Deployment of sampling probes
- Spatial sampling framework at the level of a single watershed or sub-watershed



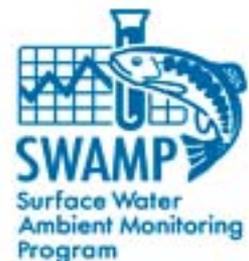
Nitrate/Nitrite as N at 312SMA (mg/l)



Scale matches Regional management needs

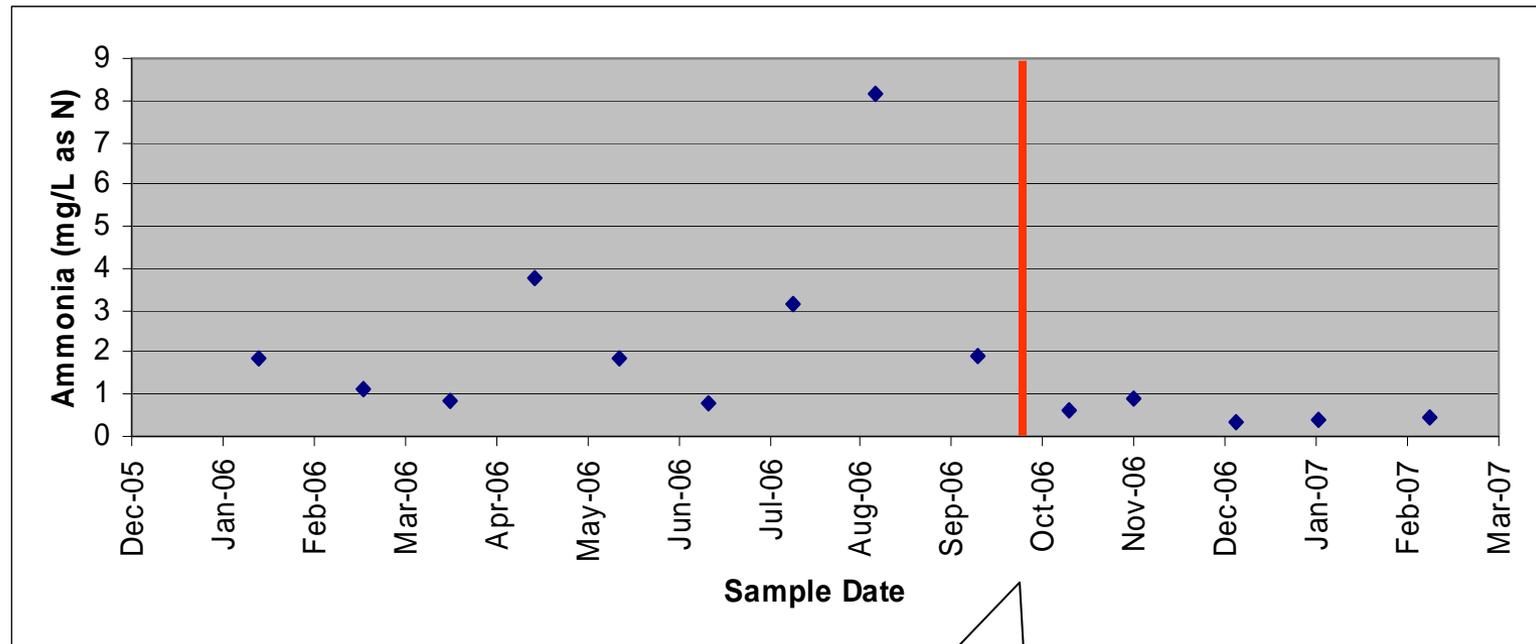
Regional Data supports:

- 303(d) listing decisions (thousands of them!)
- Grant funding decisions
- Identify and fix
- Enforcement actions
- Regulatory monitoring and decision-making
- Basin Planning

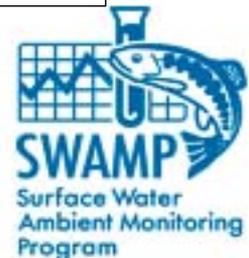


Measuring success and long-term trends

Reduction in ammonia concentrations following elimination of discharge



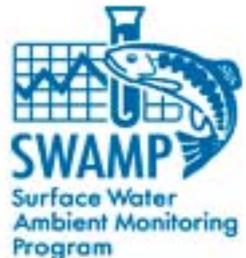
Discharge eliminated Sept 28, 2006



Integrating/Coordinating/Partnering/Leveraging

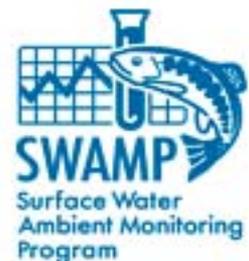
Examples:

- Regions support Regional Monitoring Program development with equipment loans, funding, staffing (e.g. Klamath River and Delta programs)
- Bay area and southern California Regions partner with storm water programs to assess watershed health
- Regions partner with other major monitoring organizations in their areas (SCCWRP, RMP)
- Regions leverage regulatory program data (such as Ag waiver monitoring programs)



Monitoring in more pristine areas

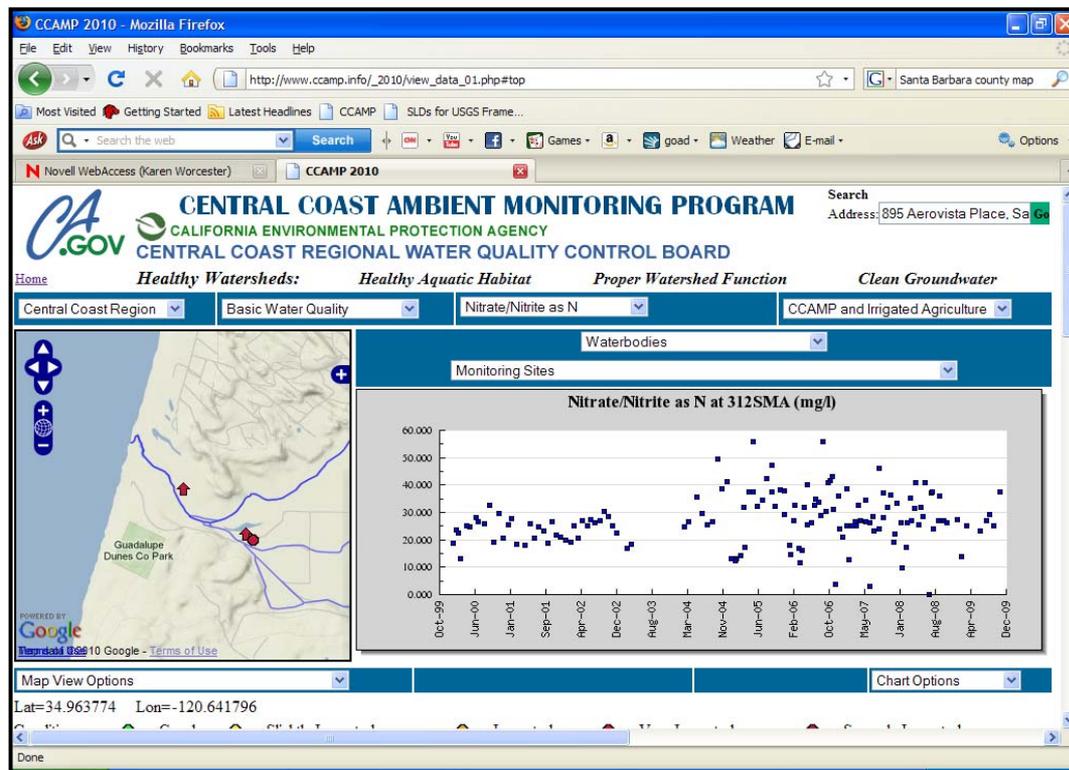
- Some Regions have few opportunities for leveraging
 - Few or no Phase 1 stormwater permits, ag regulatory programs, or major discharges
- SWAMP Regional funds provide primary (or only) funding source for questions of regional concern



Piloting Innovations

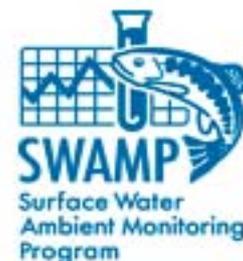
Examples:

- New bioassay methods for evaluating endocrine disruption
- Use of bioassessment in Water Board programs
- Regional web tools being adapted for statewide use



In summary:

- Regional monitoring provides information that statewide monitoring cannot
- It is responsive, adaptive, informative and necessary.
- It helps us do our jobs better



Infrastructure & Tools

- Quality assurance
- Standard operating procedures
- Data management
- Comparability



Infrastructure & Tools

Quality Assurance Program

- QA Program Plan
- QA Project Plan Template
- QA Advisor
- Help Desk



Final Technical Report 2008

Quality Assurance Program Plan

Version 1.0

September 1, 2008

Surface Water Ambient Monitoring Program



www.waterboards.ca.gov/swamp



Infrastructure & Tools

Standard Operating Procedures



SWAMP Bioassessment Procedures 2007

Standard Operating Procedures for Collecting Benthic Macroinvertebrate Samples and Associated Physical and Chemical Data for Ambient Bioassessments in California

February 2007



www.waterboards.ca.gov/swamp

SWAMP Bioassessment Procedures 2009

Standard Operating Procedures for Collecting Stream Algae Samples and Associated Physical Habitat and Chemical Data for Ambient Bioassessments in California

June 2009

A. Elizabeth Fletcher
Southern California Coastal Water Research Project
3536 Harbor Blvd, Suite 110
Costa Mesa, CA 92626

Lilian Busse
San Diego Regional Water Quality Control Board
State Water Resources Control Board
9174 Sky Park Court
San Diego, CA 92123

Peter R. Ode
Aquatic Bioassessment Laboratory/Water Pollution Control Laboratory
California Department of Fish and Game
2006 Nimbus Road
Rancho Cordova, CA 95670



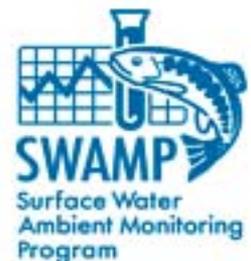
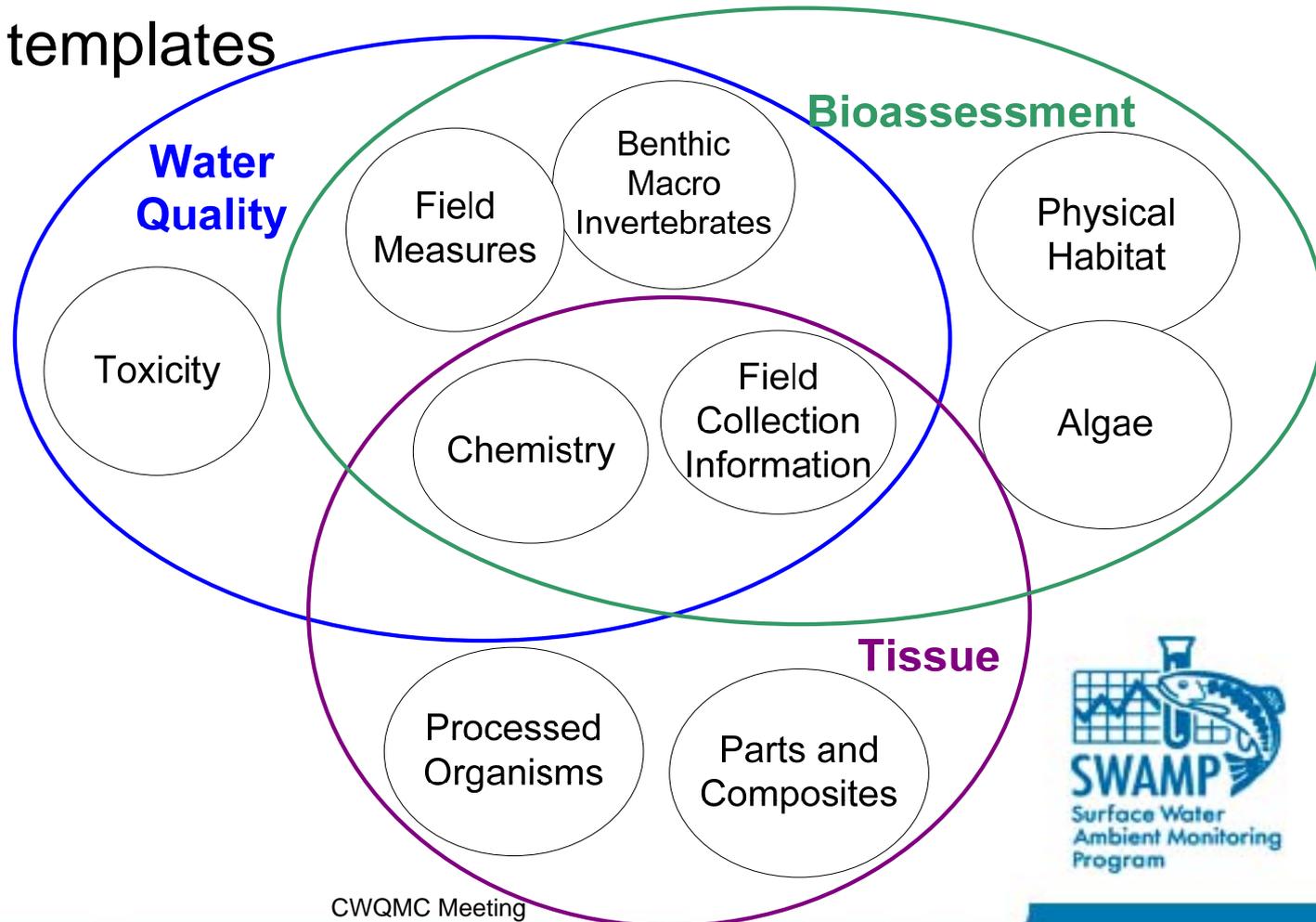
http://www.waterboards.ca.gov/water_issues/programs/swamp



Infrastructure & Tools

Data management

- SWAMP Database
- Data format templates
- Online data checkers
- Help desk



Infrastructure & Tools

Data Management – California Data Exchange Network

CE DEN Data Queries

CE DEN
CALIFORNIA ENVIRONMENTAL DATA EXCHANGE NETWORK

Home About Us Submit Data Access Data News Frequently Asked Questions

Map Satellite Terrain

RESULT CATEGORY: Water Quality Toxicity

Turn on automatic station mapping.

Click **Map Stations** at any time to show stations on the map

MAP STATIONS **MAP COUNTIES** **MAP HUC-8**

SHOW QA **SHOW STATIONLU** **HELP**

START OVER

Programs **[Select]** Surface Water Ambient Monitoring Program

Projects **[Select]** Do not limit search by Projects

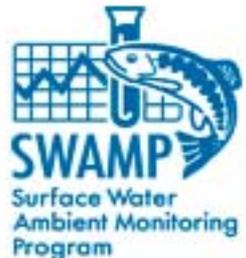
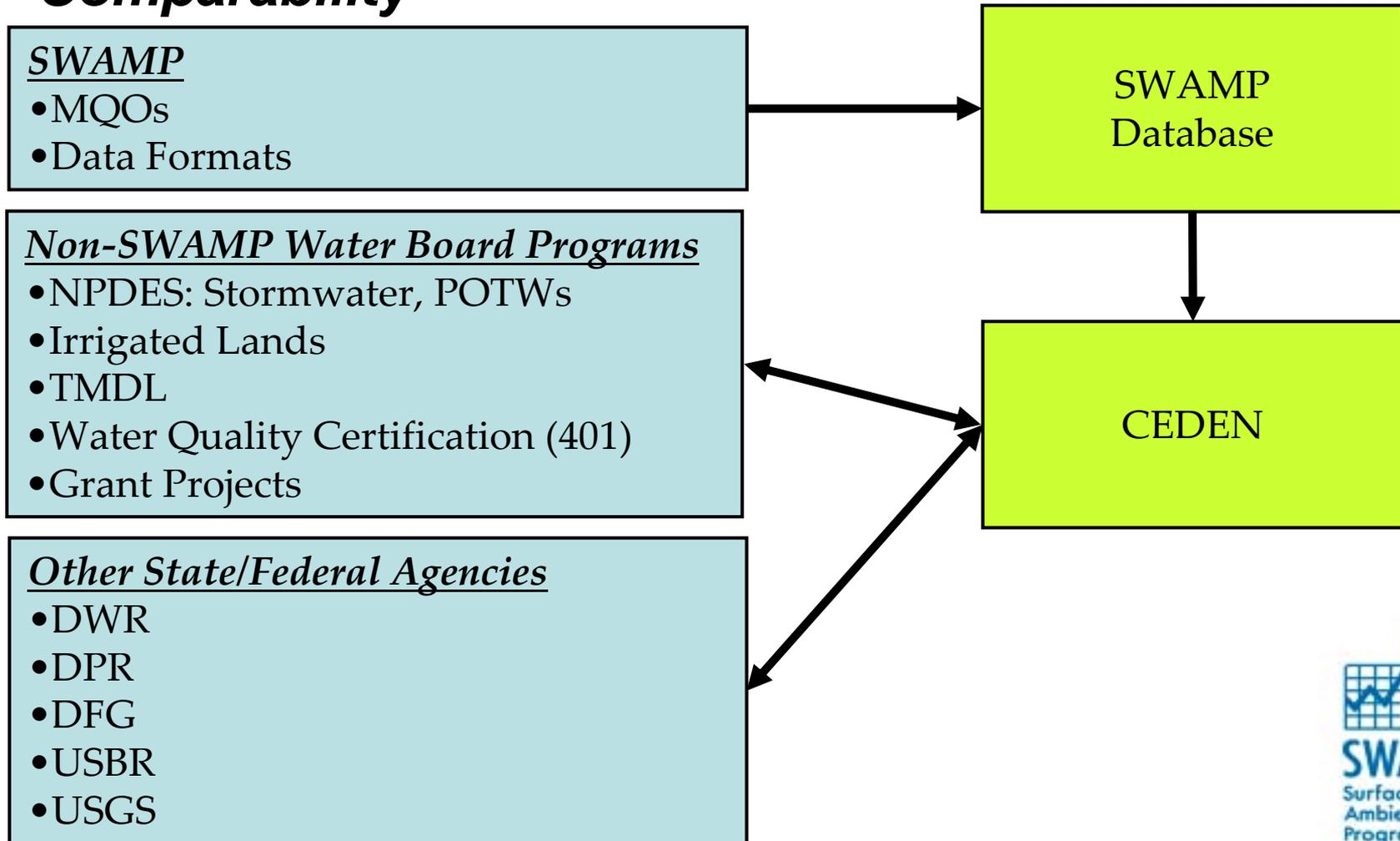
Parameter Groups **[Select]** pesticides

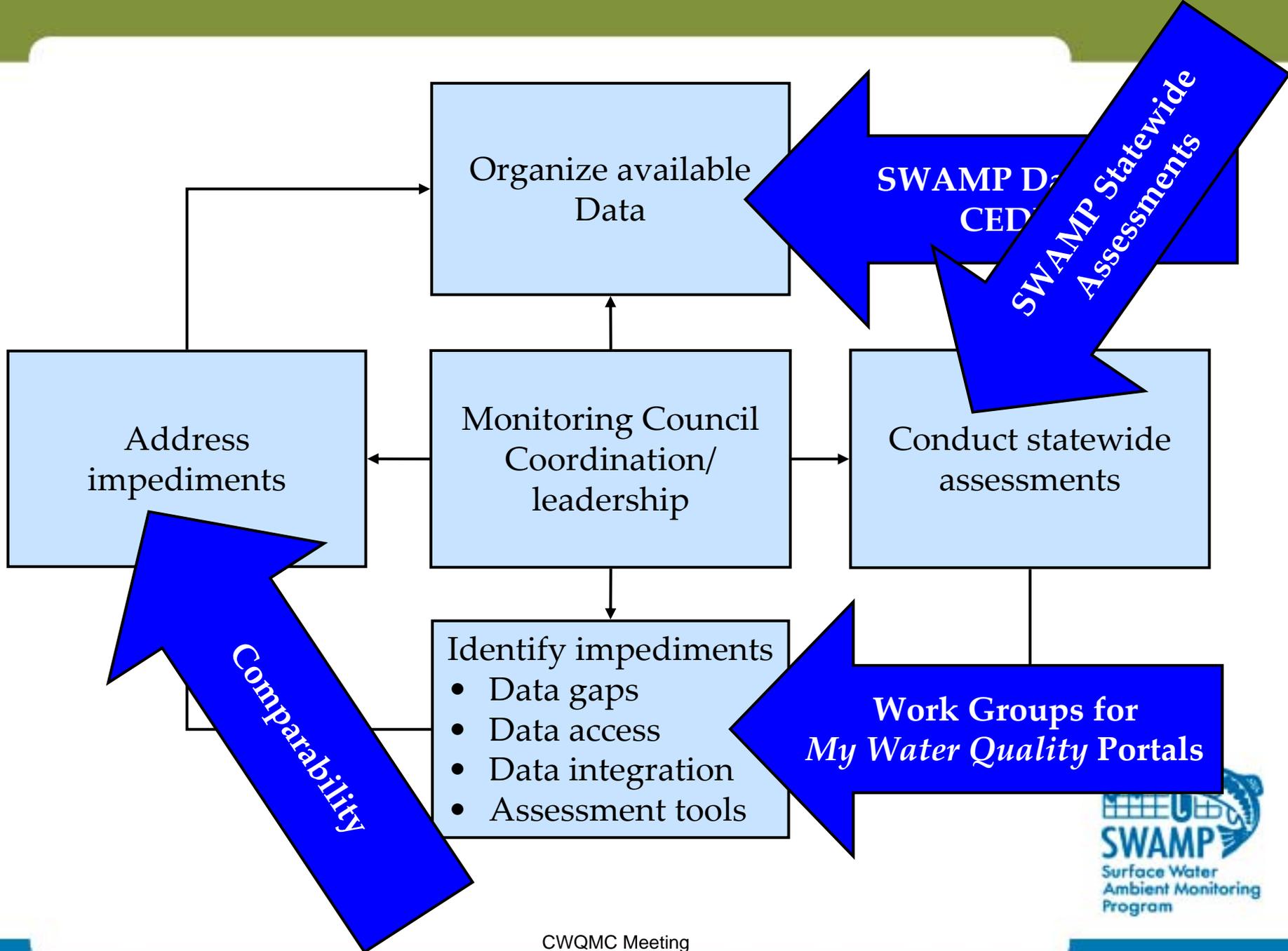
Parameters **[Select]**
Terbutryn, Total
Tetrachloro-m-xylene(Surrogate), Total
Tetrachlorvinphos, Total
Thiobencarb, Total
Thionazin, Total
Tokuthion, Total
Toxaphene, Total
Trichlorfon, Total
Trichloronate, Total
Triphenyl phosphate(Surrogate), Total

Matrixes **[Select]** Do not limit search by Matrixes

Infrastructure & Tools

Comparability

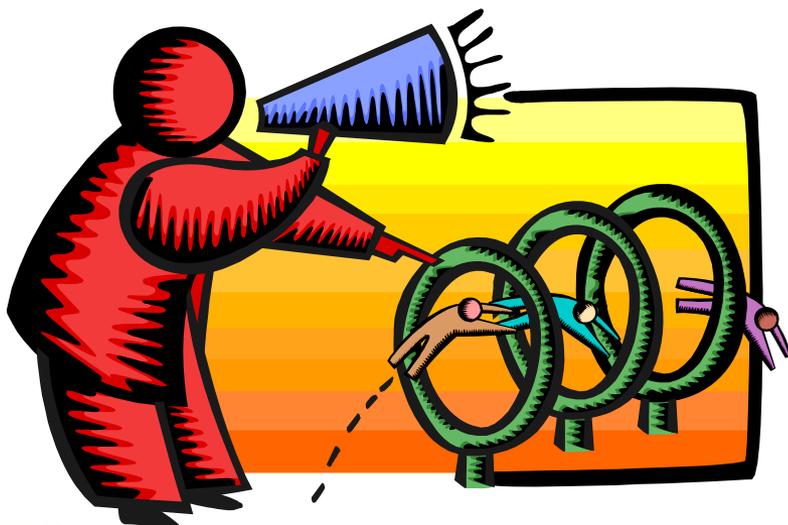




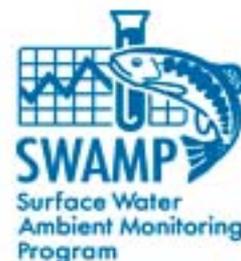
Institutional Constraints

Several institutional constraints *severely inhibit* the SWAMP's ability to succeed...

- SPARC Final Report (May 2006)



Tom Suk
Senior Scientist
Chair, SWAMP Bioassessment Committee

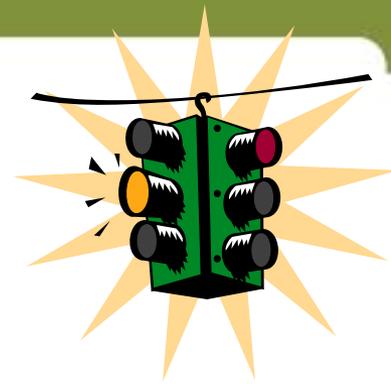


SPARC (2006)

- **Scientific Planning & Review Committee (SPARC)**
Final Report, May 2006
- **Final Recommendation #4:**
Reduce institutional constraints
- **Final Recommendation #5:**
Ensure adequate & consistent program funding year-to-year

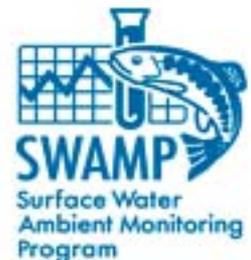


Out-of-State Travel



“SWAMP needs more outside input, and more flexibility to travel to relevant national conferences. In many respects, this is the only way to gain access to current information that is directly useful to the program.”

—SPARC Final Report (May 2006)



Contracting issues

—SPARC Final Report (May 2006)

Problems include:

- 1-yr limit on “service” contracts; 3-yr limit on others
- Time delay to execute contracts
- dollar limit “sole source” contracts: \$5,000
- limits on sub-contracting
- “low-bid” largely ignores specialization / quality
- unpredictable / increasing overhead costs

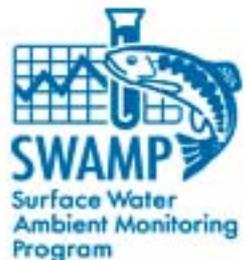


Contract relief / reform

con·tract \ 'kän-trakt\ *n* a binding agreement between two or more persons or parties

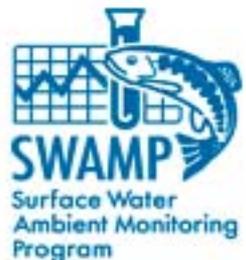


agency – agency
agency – university



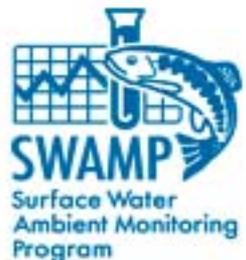
California Performance Review (RES-17)

- State should develop “Contract Simplification Plan”
- DGS should not require formal contracts between agencies
- DGS should not review individual inter-agency work agreements
- DGS should develop guidelines to replace interagency contract process with a simple model MOU to be used by state agencies for inter-agency work
- DGS should identify any/all statutes/regs that may need to be amended & develop proposal



Elements of interagency MOUs

- Scope of Work
- Budget
- Deliverables / timelines
- Standard / model language



Beyond CPR RES-17

- Include streamlined process for agency – university agreements
- Establish standardized overhead rate for state – UC/CSU (15% ??)



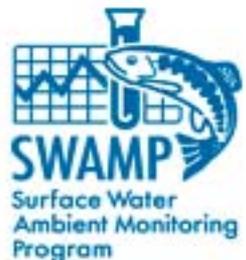
Ensure sufficient & consistent funding

SWAMP needs \$40 million/year for a state of California's size and diversity

—SPARC Final Report (May 2006)

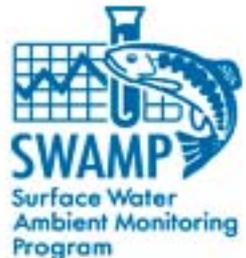


Current budget = approx \$9M/yr
~\$7M contracts
~17 PYs



Unfunded Needs

- ***SWAMP Monitoring*** – scratching the surface
 - **BOG tissue studies** indicate urgent need for follow-up
 - **Statewide assessments** – only a handful of waterbody–BU combos
 - **Regional monitoring** – many watersheds not monitored at all; many monitored for limited suite of analytes
 - **emerging issues**: CECs, continuous monitoring, real-time monitoring
- ***SWAMP Comparability***
- ***Planning & Standards***
 - SWAMP tools/data raise issues that must be resolved through other programs (bio-objectives, modification of SSOs, etc.)
 - Currently no single place to access water quality standards



Summary — Institutional Constraints

- **Out-of-State Travel** – agency staff need to attend the National Monitoring Conference
- **Contracts** –
 - CA Performance Review RES-17
 - agency-agency *and* agency-university
 - establish fixed overhead rate for UC / CSU
- **Funding** – How do we attain sufficient and stable funding (for all member agencies of the Monitoring Council) ?

