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
<table>
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<tr>
<th>Waterbody Type</th>
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Fishable – Large Rivers, Lakes, Coastal Waters

Bioaccumulation Monitoring Program

- What is the status of contamination in sportfish from lakes, coastal waters, and large rivers?
What are the Levels and Long-Term Trends in My Lake, Stream, or Ocean Location?

Select location from list.

Zoom to county:

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
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**Beneficial Uses**

- **Aquatic Life**: Suitable for aquatic life, fishable, and drinkable.
- **Fishable**: Suitable for fishing.
- **Swimmable**: Suitable for swimming.
- **Drinkable**: Suitable for drinking.

Logos:
- SWAMP
- United States Environmental Protection Agency
- California Department of Public Health (CDPH)
- Water Quality Monitoring Council
- State of California Department of Water Resources
- Water Boards
- California Water Quality Board
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

49% ±4.8
Reference

27% ±4.1
Altered

24% ±4.5
Very Altered
Aquatic Life in Streams

Bioassessment Monitoring Program – Perennial Streams Assessment
# Aquatic Life in Streams

**Bioassessment Monitoring Program – Perennial Streams Assessment**

<table>
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<tr>
<th><strong>Chemistry</strong></th>
<th><strong>Habitat</strong></th>
<th><strong>Land Use</strong></th>
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<tr>
<td>Nutrients</td>
<td>Percent Fines/Sands</td>
<td>Urban</td>
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<td>Salinity</td>
<td>Embeddedness</td>
<td>Agriculture</td>
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<td>Turbidity</td>
<td>Bed Stability</td>
<td>Impervious Surface</td>
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<td>Suspended Solids</td>
<td>Instream Habitat</td>
<td>Forested</td>
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<td>Riparian Habitat</td>
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Aquatic Life in Streams

Bioassessment Monitoring Program – Reference Condition Management Plan

- Probable reference
- Alternate reference definition
- Confirmed reference
Aquatic Life in Streams – Biological Objectives

Technical Infrastructure
- Indicators
- Assemblages
- Physical Habitat
- Methods
- Field & Lab
- Reference Condition

Regulatory Framework
- Narrative Objectives
- Numeric Endpoints

Regulatory Programs
- Permitting
- 303(d)/TMDL
- 305(b) Assmt
- 401 Cert
- BMP Efficacy

Interpretation
Implementation
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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
Aquatic Life - Streams

Bioassessment Program

Stream Pollution Trends Monitoring

Healthy Streams Partnership
Our Nine Regions are Diverse
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
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Regions can target information gaps

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Responsiveness to local and regional problems

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
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
Infrastructure & Tools

Standard Operating Procedures

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

February 2017

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

June 2009

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Ranchos Cordova, CA 95670

http://www.waterboards.ca.gov/perm wastewater_managementprogram/swamp
Infrastructure & Tools

Data management
- SWAMP Database
- Data format templates
- Online data checkers
- Help desk
Infrastructure & Tools

Data Management – California Data Exchange Network
Infrastructure & Tools

Comparability

**SWAMP**
- MQOs
- Data Formats

**Non-SWAMP Water Board Programs**
- NPDES: Stormwater, POTWs
- Irrigated Lands
- TMDL
- Water Quality Certification (401)
- Grant Projects

**Other State/Federal Agencies**
- DWR
- DPR
- DFG
- USBR
- USGS

SWAMP Database

CEDEN
Organize available data

Monitoring Council Coordination/leadership

Identify impediments
- Data gaps
- Data access
- Data integration
- Assessment tools

Conduct statewide assessments

Address impediments

SWAMP Data
CED

SWAMP Statewide Assessments

Comparability

Work Groups for My Water Quality Portals
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

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

—SPARC Final Report (May 2006)
Contract relief / reform

**contract** \ˈkän-trakt\  *n* a binding agreement between two or more persons or parties

agency – agency  
age 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)?