SWAMP
Surface Water Ambient Monitoring Program

Adequate and accurate monitoring and assessment are the cornerstones to preserving, enhancing, and restoring water quality. The information gathered from monitoring activities is critical to protect the beneficial uses of water, develop water quality standards, conduct federal *Clean Water Act* assessments, and determine the effects of pollution and of pollution prevention programs.

SWAMP Participants

- State Water Resources Control Board
- Regional Water Quality Control Boards
- Moss Landing Marine Laboratories
- California Department of Fish and Game
- University of California Davis Granite Canyon Laboratory
- US Environmental Protection Agency Region 9

CALIFORNIA Water Boards

Contact SWAMP

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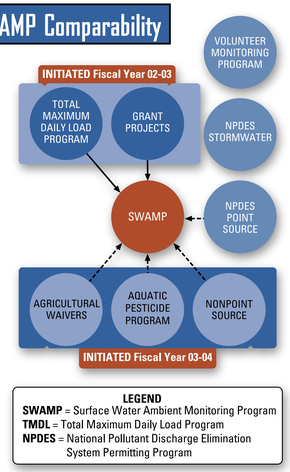
SWAMP Program Goals and Vision

Monitoring Framework (National Water Quality Monitoring Council)

Ten Elements of a State Water Monitoring Program

- **Monitoring Program Strategy**
  That water quality is comprehensively measured to protect beneficial uses and to evaluate our protection and restoration efforts.
- **Monitoring Objectives**
  To define a complete set of monitoring objectives, based on beneficial use attainment and reflecting the full range of regulatory responsibilities and water quality programs for all waterbody types.
- **Monitoring Design**
  To develop and implement a monitoring design that maximizes our ability to meet our monitoring objectives with existing resources.
- **Core Indicators of Water Quality**
  To develop and implement a set of monitoring indicators (and assessment thresholds), which can be used to track the status and trends of water quality and to evaluate the effectiveness of management actions to improve water quality in California.
- **Quality Assurance**
  To develop and implement a progressive quality assurance program using a systems-based approach to the generation and storage of application-appropriate data/metadata.
- **Data Management**
  To make credible ambient monitoring data available to all stakeholders in a timely manner.
- **Data Analysis/Assessment**
  To provide a consistent science-based framework for the evaluation of monitoring data relative to state and regional standards and the protection of beneficial uses and for tracking the effectiveness of management actions.
- **Reporting**
  To report all collected data as information and in a timely and publicly accessible manner.
- **Programmatic Evaluation**
  To conduct periodic reviews of each aspect of the program to determine its scientific validity and how well it serves the water quality decision needs of the state.
- **General Support and Infrastructure**
  To provide the support needed to implement a coordinated and comprehensive monitoring and assessment program.

SWAMP Comparability



LEGEND
SWAMP = Surface Water Ambient Monitoring Program
TMDL = Total Maximum Daily Load Program
NPDES = National Pollutant Discharge Elimination System Permitting Program

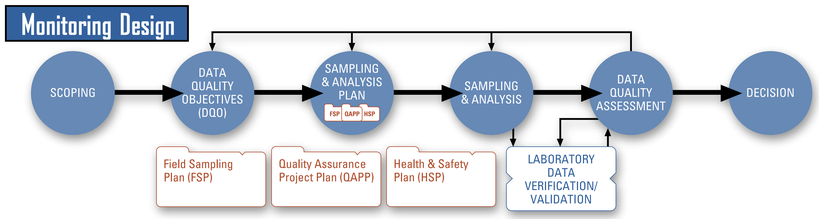
How to be comparable with SWAMP?

http://mpsl.mlml.calstate.edu/swcompare.htm

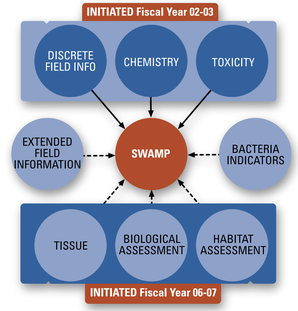
http://www.waterboards.ca.gov/swamp/

SWAMP on the Web

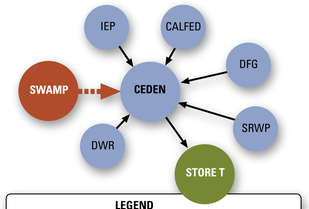
Monitoring Design



Database Development



Database Integration



LEGEND
SWAMP = Surface Water Ambient Monitoring Program
CEDEN = California Environmental Data Exchange Network
IEP = Interagency Ecological Program
DFG = Department of Fish & Game
SRWP = Sacramento River Watershed Program
DWR = Department of Water Resources
CALFED = State and Federal Interagency Group

Statewide SWAMP Monitoring

State and Regional Monitoring Components

The state and regional monitoring components vary in their scale of questions, objectives, and design.

- **State program**
  - Asks broad questions
    What percent of the state's water bodies are healthy ?
  - Uses of program
    Environmental Protection Indicators for California
    State Water Quality Assessment Report (305b)
    Legislative reports
  - Current statewide monitoring programs
    Perennial Streams Assessment
    Lake Fish Tissue Bioaccumulation Study
    Urban Creeks Pyrethroid Pesticides in Sediment Study
- **Regional program**
  - Objectives and design are more specific
    Are specific water bodies meeting water quality standards?
    Are specific management/restoration efforts successful?
    State Water quality Assessment Report (303d)

SWAMP Training Track

- Introductory Monitoring Design
- Design
- SWAMP Field Methods (CD rom)
- Introductory Quality Assurance
- *SWAMP Advisor*
- SWAMP Data Management
- SWAMP Collaboration Workshop
- Annual meeting---California Bioassessment Workgroup

Quality Assurance

- QA Team
- Training
- QA Web site
- Online QA Tools: www.waterboards.ca.gov/swamp/qapp.html
- QA "Expert System" Software
- Help Desk