

# Introduction to the new SWAMP Information Management and Quality Assurance Center

October 20<sup>th</sup> 2015



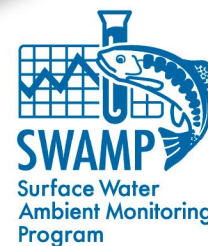
**Melissa Morris**

*SWAMP QA Officer & Database Manager*

State Water Board

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# SWAMP Mission

*...to provide resource managers, decision makers, and the public with timely, high quality information to evaluate the condition of surface waters throughout California.*



# SWAMP Strategic Priorities

- **Coordination**
- **Monitoring, Assessment, and Reporting**
- **Infrastructure**
  - Quality Assurance
  - Information/Data Management
  - Documentation, Resources, Tools
  - Education & Training





## Infrastructure Goal

**To Support the Collection and Reporting  
of Scientifically Defensible, Comparable,  
and Useful Data.**

**To Help YOU  
Protect This - >**



# SWAMP Infrastructure History

The SWAMP Program originated in the early 2000's

Over a decade long partnership with

***Moss Landing Marine Labs (MLML)***

- SWAMP Quality Assurance Team
- SWAMP Data Management Team



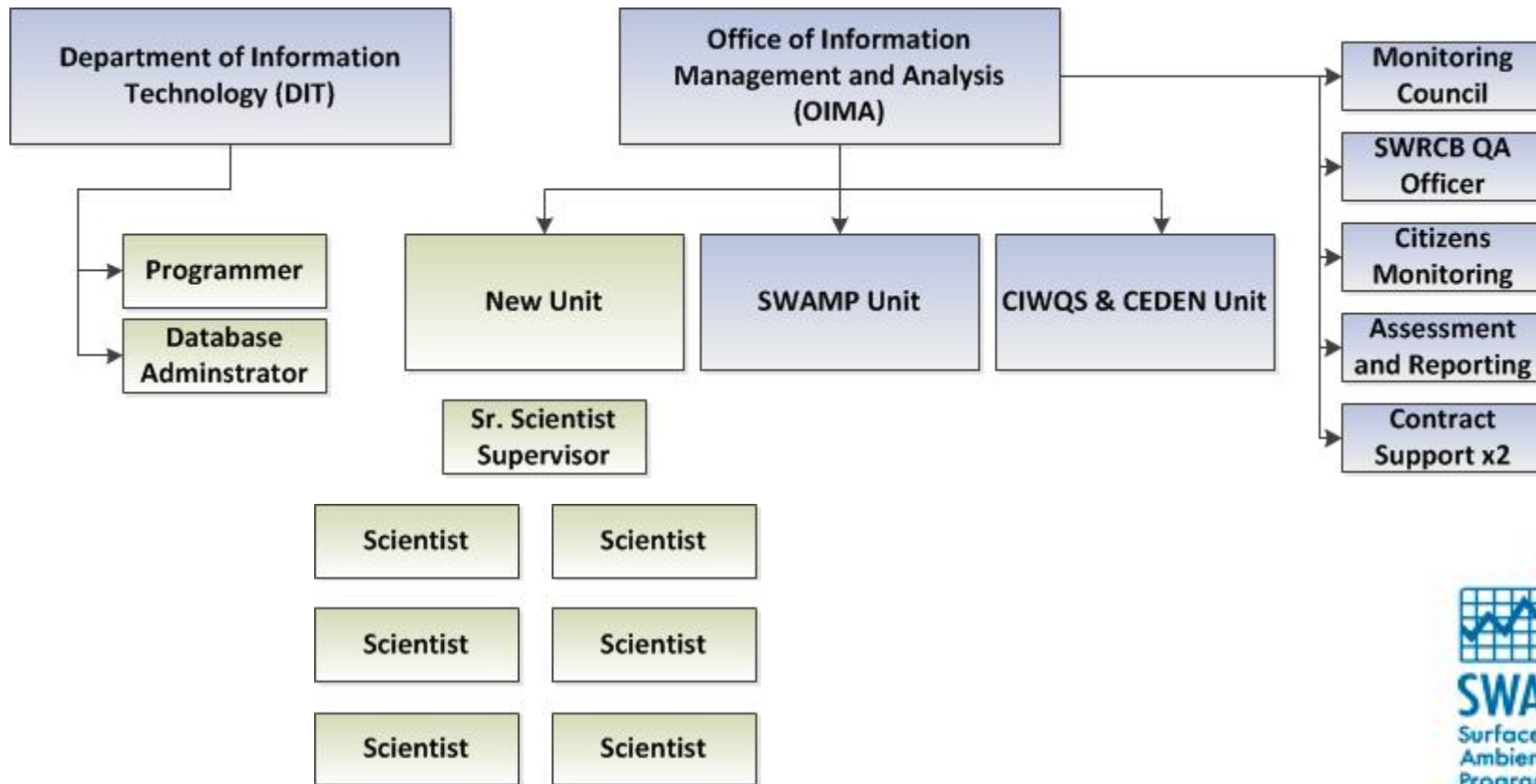
## Infrastructure History Continued...

- 2013 – State Contracting Review Changes
  - Contracted Positions → Civil Service Positions
- 2014 – Budget Change Proposal Approval
  - Added 9 new positions to [OIMA-SWRCB](#) for SWAMP Infrastructure Services.
    - One Unit Lead – Senior Environmental Scientist
    - Six Unit Staff – Environmental Scientists
    - Two Information Technology Staff
      - Database & Application Support

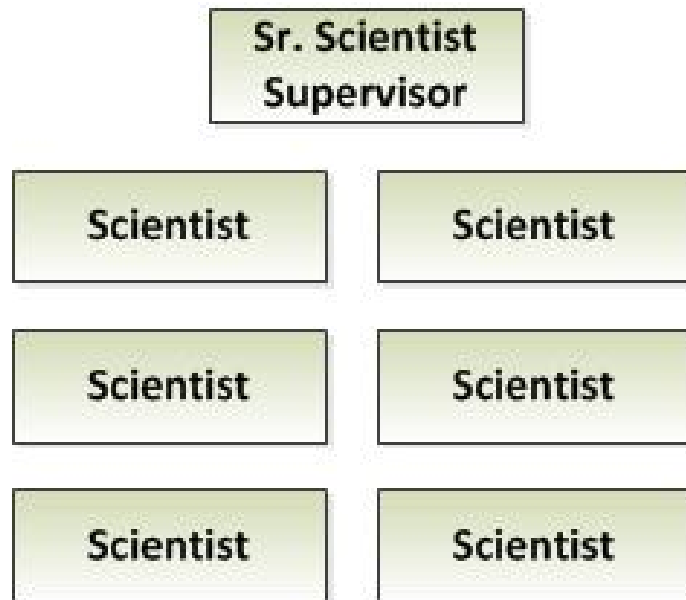


# OIMA Organization

## State Water Resources Control Board



# New Unit Organization?

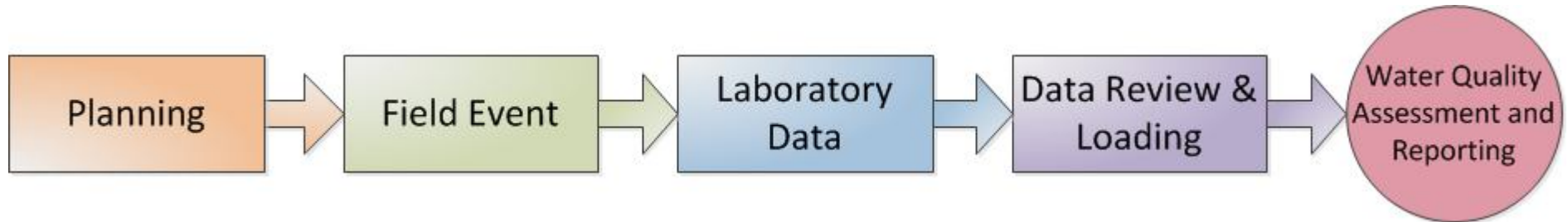


- 2 Teams of three?
- 4 data managers/ 2 QA Managers?
- 1 Centralized & Integrated Team?



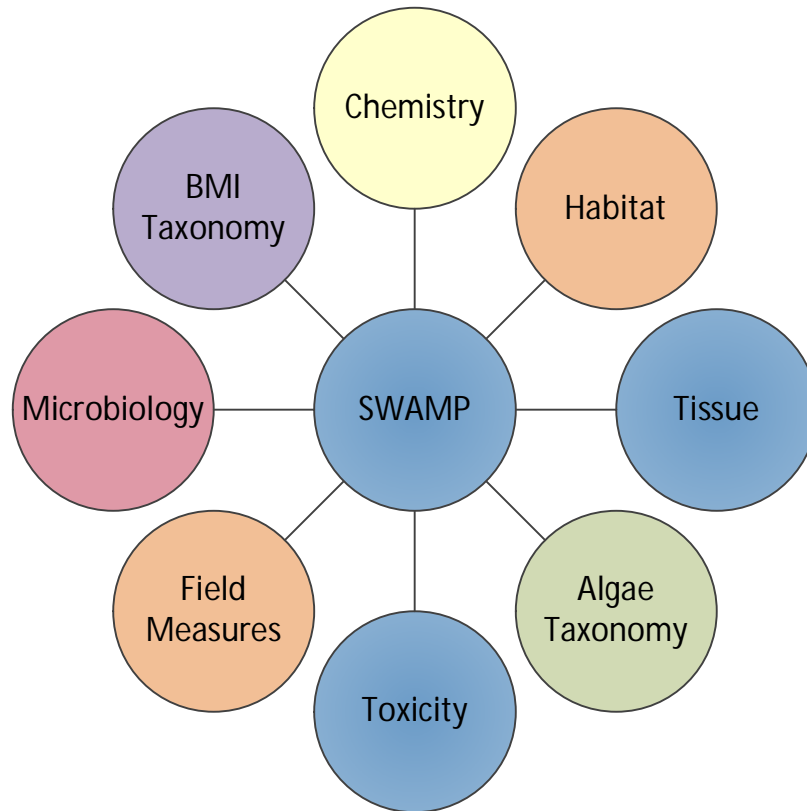


# Monitoring Stages



- ✓ Quality Assurance and Data Management Infrastructure Supports all Stages of Water Quality Monitoring.

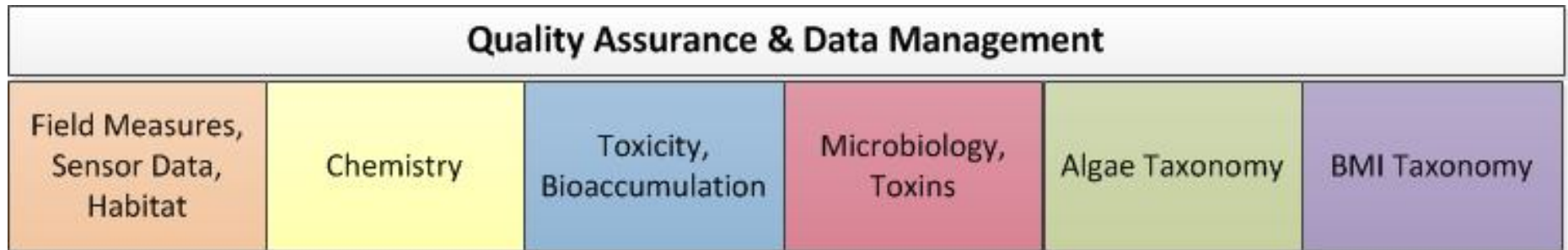
# SWAMP Monitoring Data Types



- ✓ Each Data Type is also supported by Quality Assurance and Data Management Infrastructure
- ✓ However, each data type has unique requirements!
  - ✓ Sample Handling
  - ✓ Quality Controls
  - ✓ Data Templates
  - ✓ Data Review
  - ✓ Constraints



# New SWAMP Unit Organization



- ✓ Staff Specialization by Data Type
- ✓ Wide Network for General Quality Assurance and Data Management and Support



## New Unit Name

**SWAMP**

**I**nformation Management &

Robust and Accessible Information

Function Tool Development

**Q**uality Assurance

Scientifically Defensible Planning, Design ,  
Collection, Analysis and Reporting

**C**enter

Centralized, Integrated, and Focused

**"SWAMP IQ"**



## New Unit Focus and Vision

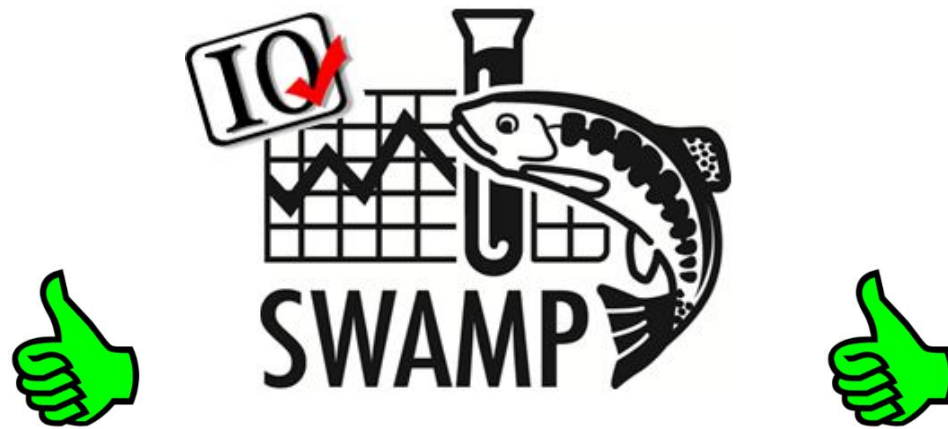
- ✓ “Whole Picture” Support from Planning to Validation for each Specialized Data Type.
- ✓ Promote and Support Question Driven Monitoring
- ✓ Robust and Accessible Information Source





## New Unit Focus and Vision Continued

- ✓ Promote Comparable and Useful Data
- ✓ Functional Tool Development



# The Past Year

## Phase 1. **SWAMP Infrastructure Transition**

1. Transfer SWAMP Resources to State Water Board Website
2. Install SWAMP Data Management Systems
3. Train Staff on Data Management Processes
4. SWAMP Processes “Hand-Off”

Status: **Completed May 2015**



# Current Webpage

[http://www.waterboards.ca.gov/water\\_issues/programs/swamp/](http://www.waterboards.ca.gov/water_issues/programs/swamp/)

The screenshot displays the official website of the California State Water Resources Control Board's Surface Water Ambient Monitoring Program (SWAMP). The page features a green header with the agency's name and a navigation menu. A search bar is located in the top right corner. The main content area is titled "SWAMP" and "Surface Water Ambient Monitoring Program". It includes a sidebar with links to various resources, a central section for "SOUND SCIENCE FOR INFORMED WATER QUALITY MANAGEMENT" with a list of links, and a bottom section for "SWAMP HIGHLIGHTS" featuring various reports and programs. A black arrow points to the "Data Management Resources" link in the central section.

**CA.GOV** CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY  
STATE WATER RESOURCES CONTROL BOARD

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Visit his Website

**Board Chair**  
**Felicia Marcus**  
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My Water Quality

Performance Report

SWAMP Resources

Home → Water Issues → Programs → Swamp

**SWAMP**  
Surface Water Ambient Monitoring Program

**SOUND SCIENCE FOR INFORMED WATER QUALITY MANAGEMENT**

Welcome! | About | **Tools** | Reports | Contacts | Links

**SWAMP**  
Surface Water Ambient Monitoring Program

→ Quality Assurance  
→ Methods and Standard Operating Procedures  
→ Tools for Kickoff Meetings  
→ **Data Management Resources**

→ Indicators and Water Quality Goals  
→ Field Methods Course  
→ Tools for Citizen Monitors  
→ Archived Tools

**SWAMP HIGHLIGHTS ...**

Achievements Report Reports on Contaminants in Fish Stream Pollution Trends (SPoT) Program SWAMP Quality Assurance Program (QAPoP) Field Methods Course Biological Integrity Assessment for California California Environmental Data Exchange Network (CEDEN) My Water Quality Citizen Action: Clean Water Team

**SWAMP**  
Surface Water Ambient Monitoring Program

# Current Webpage Continued



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## (OIMA) Office of Information Management & Analysis: SWAMP Data Management Resources

Notice: [Transition](#) of Quality Assurance and Data Management Support Services from Partnerships to State Staff.

### Quick Links

- [Templates & Documentation](#)
- [Training, Field QA & Collection Permit](#)
- [Webinar Training](#)
- [Tools](#)
- [SWAMP Online Data Checker](#)
- [Data Management FTP](#)
- [SWAMP Wiki](#)
- [SWAMP Comparability \(coming soon!\)](#)
- [OIMA HelpDesk](#) [Google Calendar](#)

### Current Transition

The Office of Information and Analysis (OIMA) and the Surface Water Ambient Monitoring Program (SWAMP) are currently undergoing major changes required by the State contracting process. We refer to this program change as the 'Transition'. During this transition, State staff has been hired to fill positions and undertake tasks that were previously conducted by long term partners, Moss Landing Marine Labs. New OIMA staff members, hired in November 2014, are in the process of taking on the roles of Quality Assurance and Data Management for SWAMP. We hope to maintain excellent customer service, while minimizing any disruptions.

### SWAMP Data Management Summary

The new SWAMP Information Management & Quality Assurance Center (IQ Center) provides support services to SWAMP funded projects. The unit manages day to day operation of SWAMP Data Management and quality assurance processes. These processes include documentation, tracking, data review, loading, verification and validation, as well as maintaining SWAMP look up lists and coordination with CEDEN. This unit also operates the new OIMA help desk.



# Current

## Phase 2. Continuity, Update, Improve

- Priority #1 - Maintain Day-to-Day SWAMP Support
  - New Data, New SOPs, etc.
- Begin Systematic Inventory, Review and Update.
- Identify Possible Areas for Improvement.





# New Projects Coming Soon!

- SWAMP Website Revision
  - ✓ New layout and organization
  - ✓ Updates to resources and information
  - ✓ And More!



# New Projects Coming Soon!

- SWAMP QA Program Update
  - ✓ Process and Documentation Updates
  - ★ ✓ Measurement Quality Objective Framework
  - ★ ✓ Data Quality Objective Process Integration
  - ★ ✓ SWAMP Comparability Framework

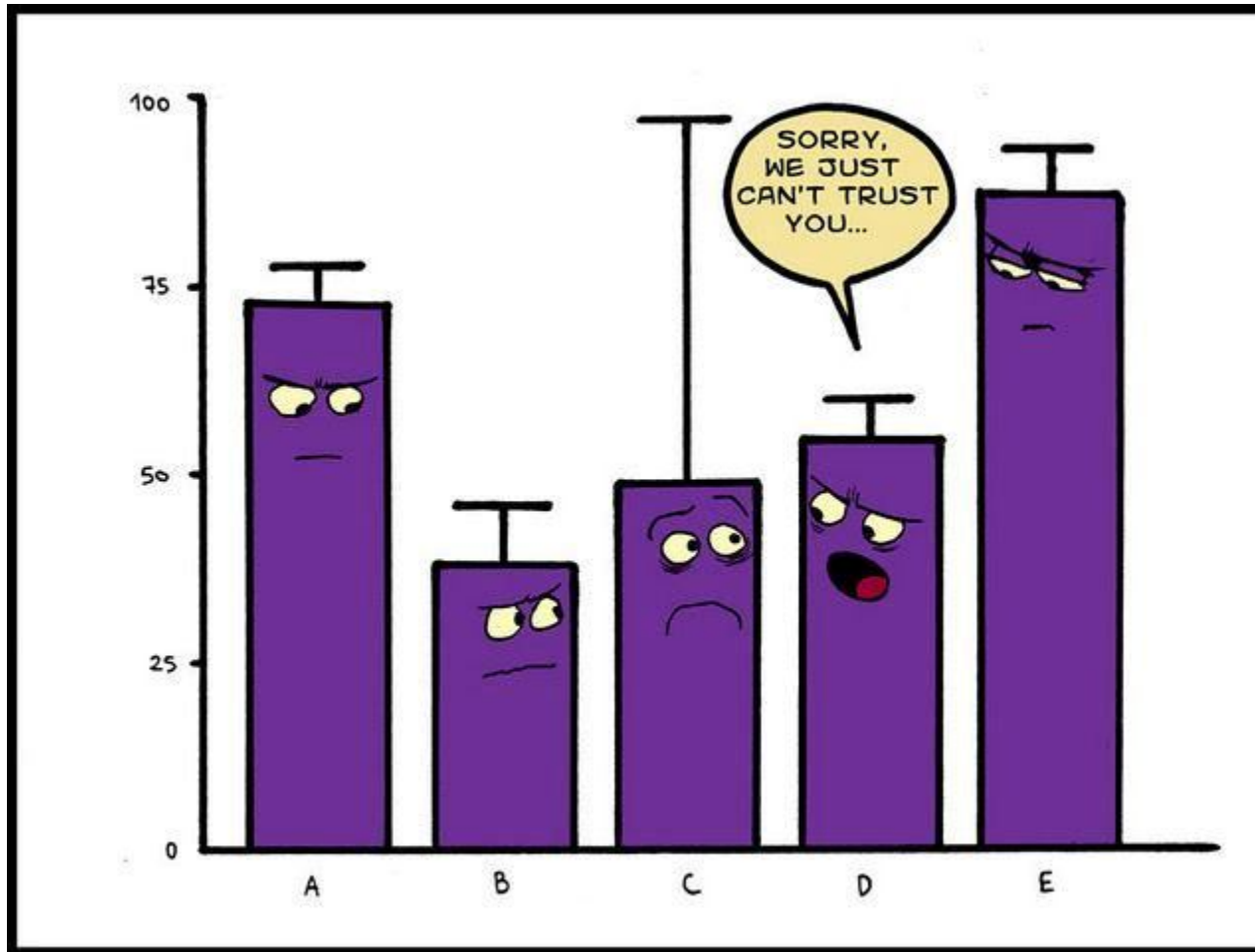


# New SWAMP Staff

SWAMP IQ			
Field Measures, Sensor Data, Habitat	<b>Marc Petta</b>	Microbiology, Toxins	<b>Marisa Van Dyke</b>
Algae Taxonomy	<b>Candice Hienz</b>	Chemistry	<b>Kim Pham</b>
BMI Taxonomy	<b>Toni Marshall</b>	Toxicity, Bioaccumulation	<b>Brian Ogg</b>
SWAMP QA Office and Database Manager - Melissa Morris			



# Thank you! Questions?



[OIMA-HelpDesk@Waterboards.ca.gov](mailto:OIMA-HelpDesk@Waterboards.ca.gov)

# Field, Habitat, Geospatial, and Sensor Data

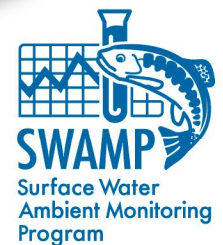


**Marc Petta**  
**SWAMP IQ**

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## Combined Algae and BMI SOP

### Major Changes between versions:

- Full Sets of Physical Habitat Data is to be collected even if just algae is to be collected
- Duplicate sampling of BMI and benthic algae is to be collected at ten percent of study sites.
- For SWAMP, presence/absence of macroalgae is recorded during the pebble count, even if only BMIs (and not algae) are being sampled.
- Mosses are explicitly not included in macrophytes (regardless of the module).
- Bank stability is now assessed along the imaginary line running from where the transect ends meet the wetted margin, to the bankfull boundary.
- For SWAMP, 6 densiometer readings (four in the center of the stream and one at each bank) are now required in streams > 10 m wide.



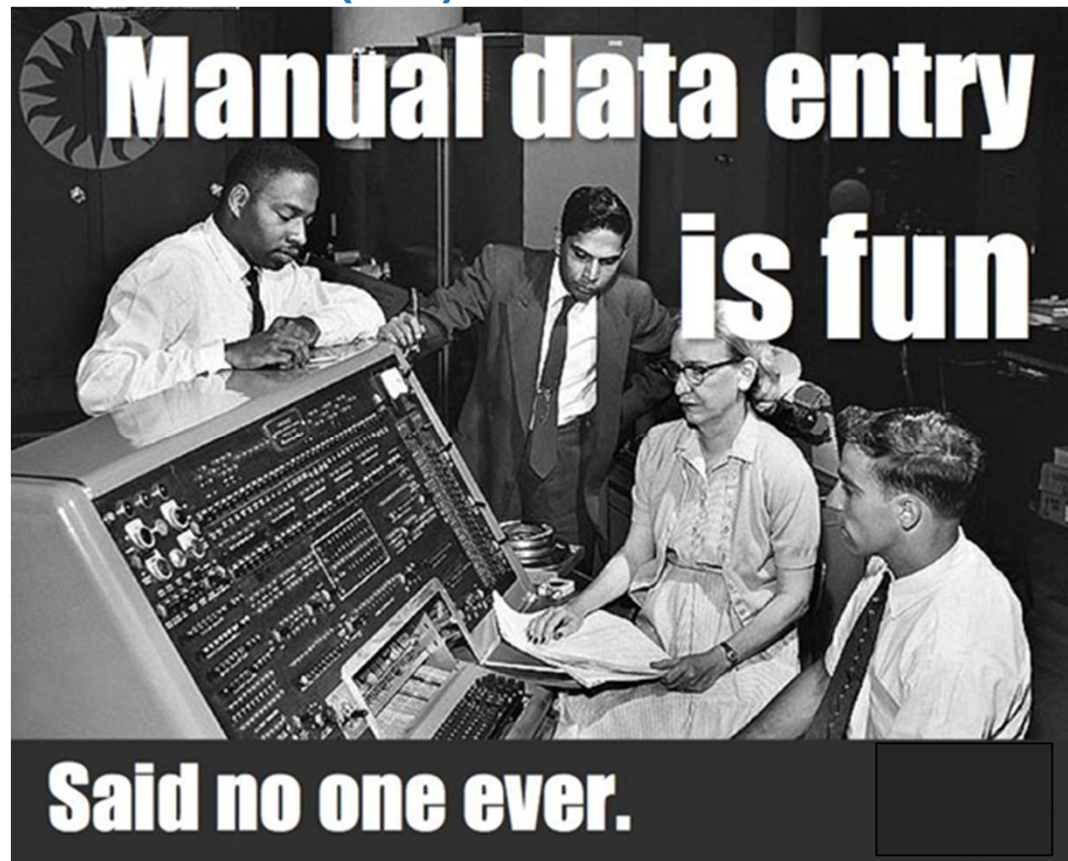
Marc Petta

SWAMP IQ

Office of Information Management & Analysis

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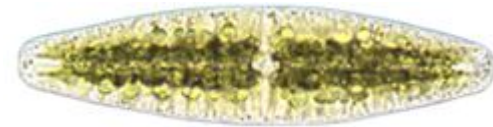


## Algae Data

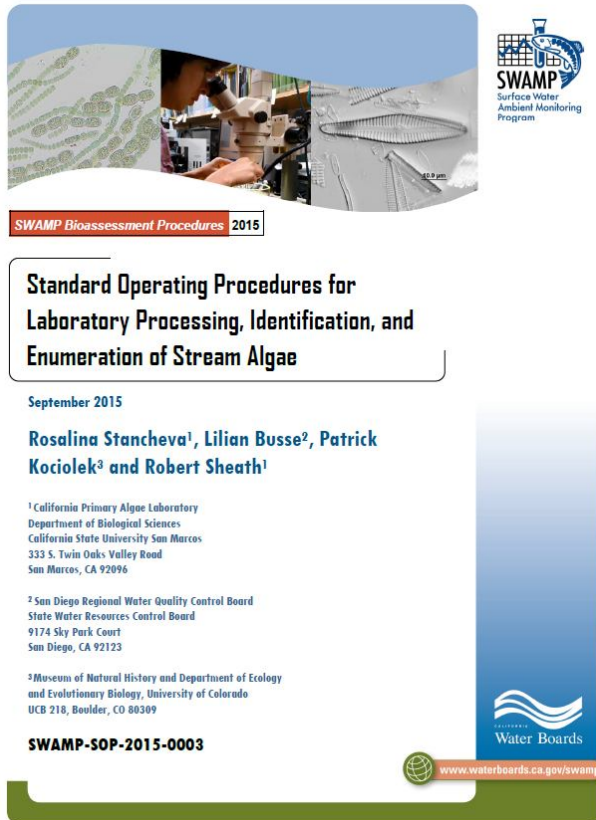


# Candice Heinz

Quality Assurance and Data Manager for Algae Taxonomy  
Environmental Scientist  
SWAMP IQ Center  
[candice.heinz@waterboards.ca.gov](mailto:candice.heinz@waterboards.ca.gov)



# Algae Data



## Algae Taxonomy Lab SOP

- Describes the methods for:
  - Laboratory processing, identification and enumeration of soft-bodied algae and diatoms
  - QA and QC procedures
  - Harmonization
  - Data reporting to SWAMP
- Internal and external QA/QC document – coming soon





## California Freshwater Algae Work Group (CFAWG)

### Purpose of the group:

- Convene nationally recognized taxonomists with expertise in diatoms and/or soft-bodied algae
- Develop and improve standard taxonomic procedures, QA/QC methods and harmonization practices
- Provide annual scientific and educational taxonomic workshops
- Support and educate the bioassessment community





# Candice Heinz

Quality Assurance and Data Manager for Algae Taxonomy  
Environmental Scientist  
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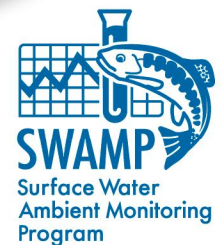
# Benthic Macroinvertebrate (BMI) Taxonomy

October 20<sup>th</sup> 2015



**Toni Marshall**  
**SWAMP IQ**

*QA and data manager for BMI*  
**Environmental Scientist**  
**Office of Information Management & Analysis**  
**(916) 322-2518**



# Standard Operating Procedure (SOP) for External Quality Control (QC) of BMI

## Goals:

- ✓ Ensure that taxonomic identifications are consistent
- ✓ Provides quantitative measures of accuracy and precision- MQOs

## Current:

- ✓ SWAMP IQ webpage for BMI taxonomy

## Future:

- ✓ Adapt the SWAMP database to accept QC data
- ✓ Develop tools to facilitate the use of this SOP for External QC of BMI



# Toni Marshall

QA and Data Manager for BMI

Taxonomy

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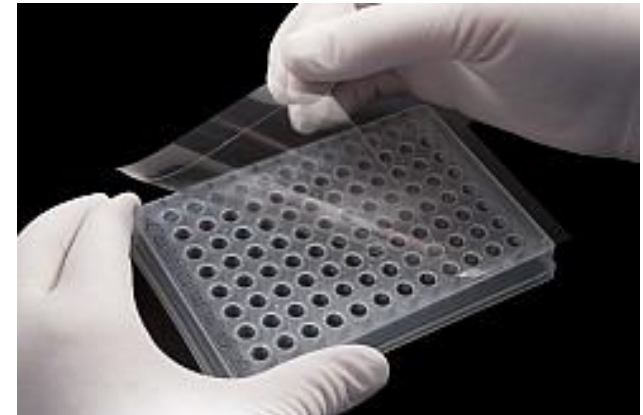
[toni.marshall@waterboards.ca.gov](mailto:toni.marshall@waterboards.ca.gov)





# Ambient Bacteria Data

October 20<sup>th</sup> 2015



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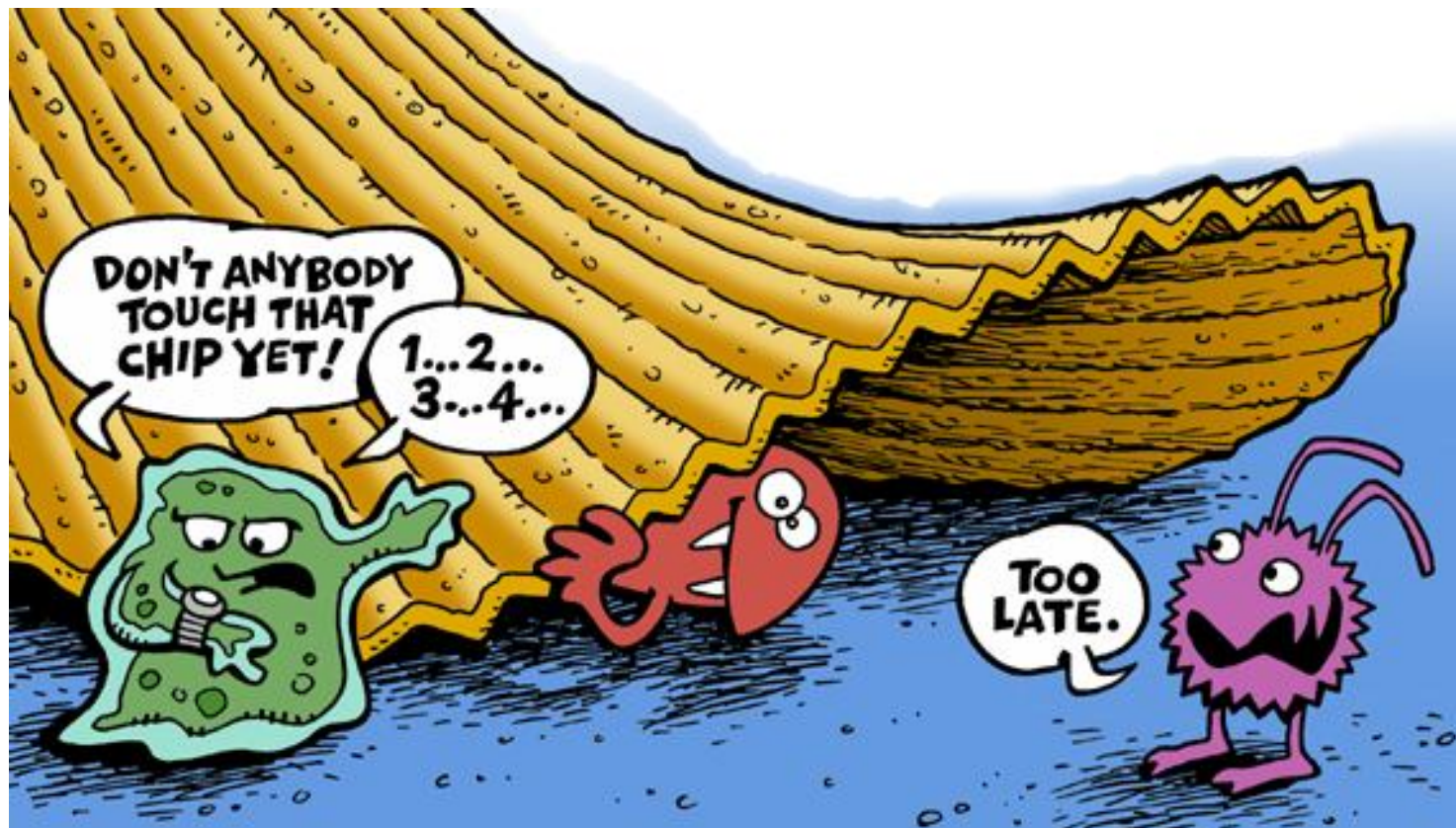
## Ambient Bacteria Data

- Includes: bacteria, pathogens, and their toxins
- SWAMP IQ recently developed MQOs for cyanobacteria toxins (cyanotoxins) in water and tissue samples
- Facilitating workgroups
  - CA Cyanobacteria Lab Network
  - Microbial Source Tracking Data (coming soon)
- Developing tools – MQO framework
- Planned updates to SWAMP's bacteria webpage and data management plan





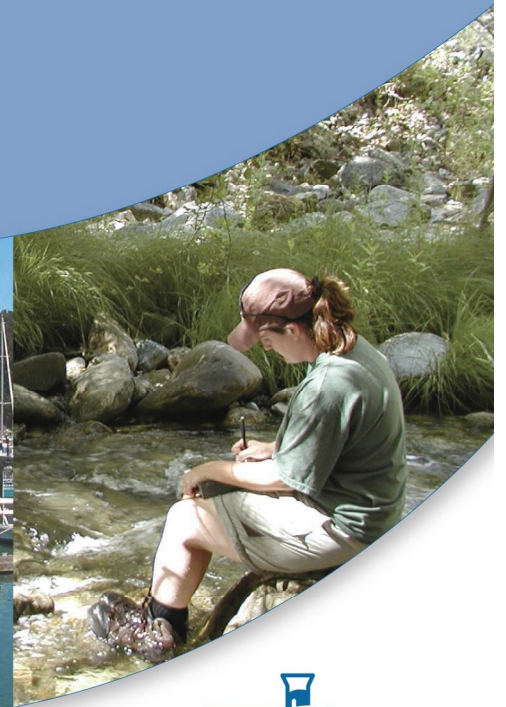
**Contact Information --**  
**Marisa.vandyke@waterboards.ca.gov**  
**(916) 322-8431**



# Chemistry

## Quality Assurance Data Manager

### October 20<sup>th</sup> 2015



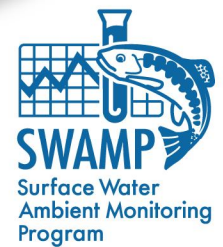
**Kimberly Pham**

*SWAMP IQ Center*

State Water Board

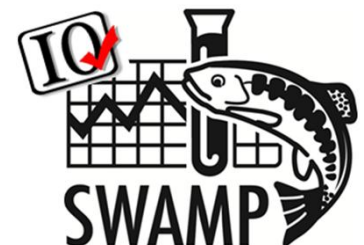
916-322-8429

[Kimberly.Pham@Waterboards.ca.gov](mailto:Kimberly.Pham@Waterboards.ca.gov)



# Ambient Chemistry Data

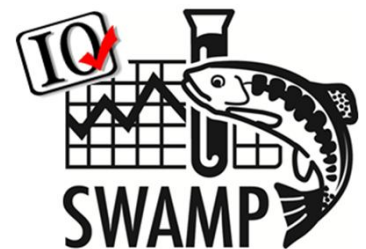
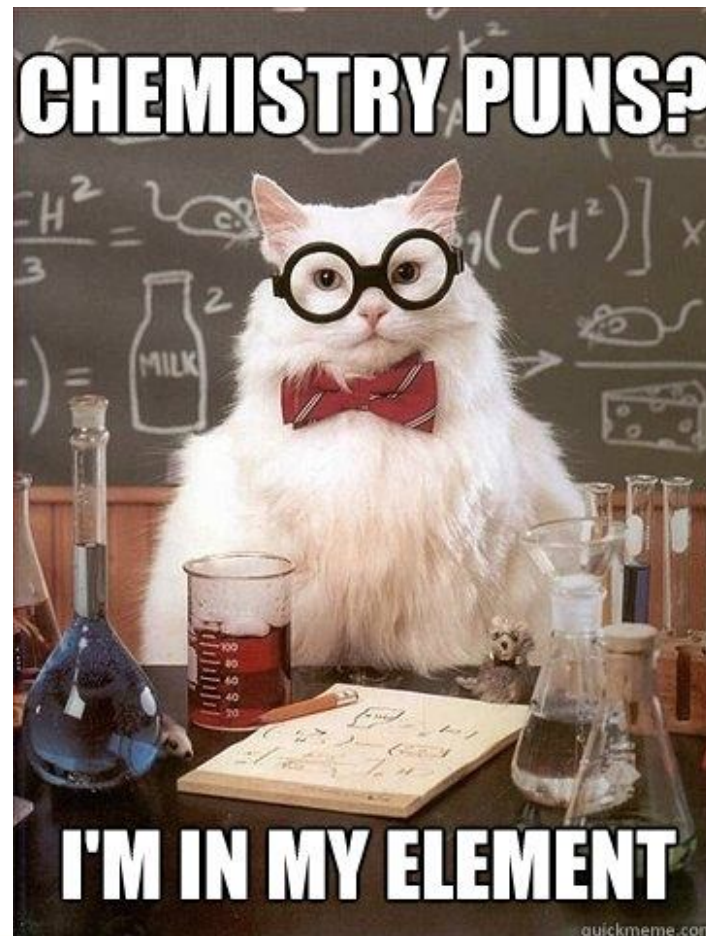
- Chemistry data for water, sediment, and tissue that includes but not limited to: Nutrients, Pesticides, Metals, Organic and Inorganic compounds
- SWAMP IQ will develop MQOs for Fipronil & Neonicotinoids
- Updates to SWAMP's Chemistry webpage and data management plan are underway





## Contact Information

- [Kimberly.Pham.waterboards.ca.gov](mailto:Kimberly.Pham.waterboards.ca.gov)
- (916) 322- 8429



# Ambient Toxicity Data



Brian Ogg  
SWAMP IQ

## Ambient Toxicity Data

- “Toxicity” refers to the negative impacts of pollutants upon aquatic life
- SWAMP incorporates toxicity monitoring in numerous Regional programs
- MQOs will be developed for the midge *Chironomus dilutus*
- Updates to SWAMP’s toxicity webpage and data management plan are underway

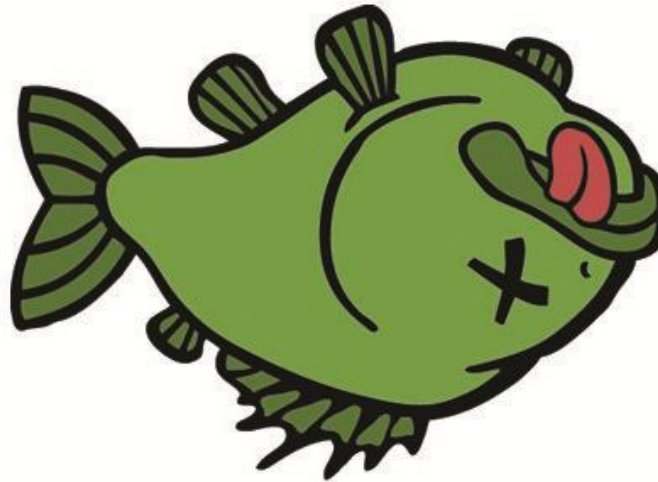


*C. dilutus*; photo courtesy of U.S.G.S.





# Ambient Toxicity Data



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