

Water Board Open Data Initiative



Greg Gearheart
Deputy Director, Information Management and Analysis

March 18, 2016



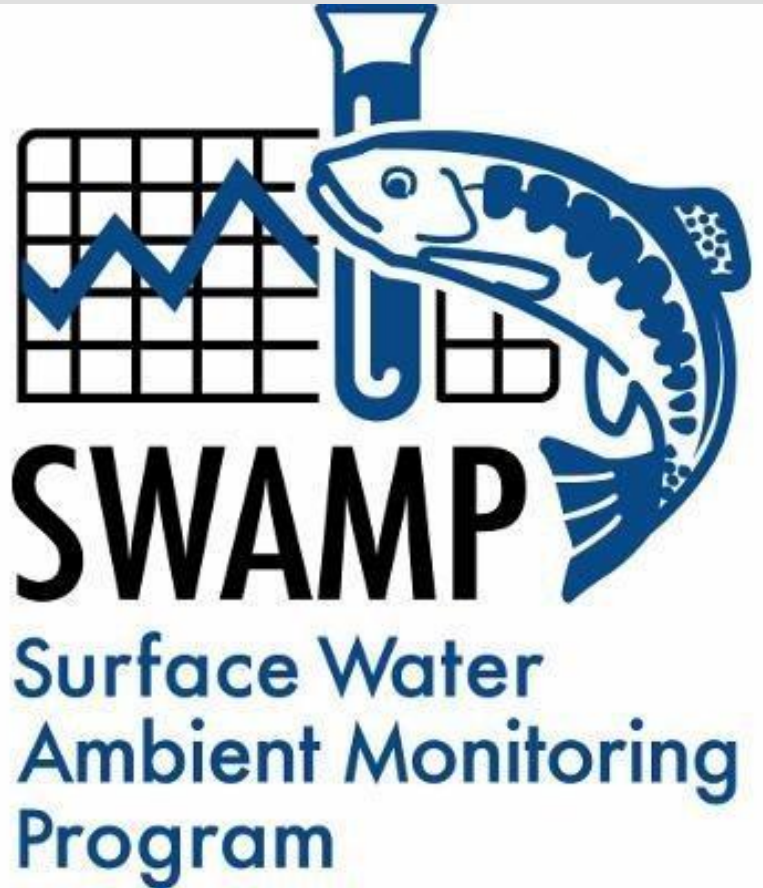
#CAWaterDataDive Team Acknowledgement

- Jarma Bennett - jarma.bennett@waterboards.ca.gov
- David Altare - david.altare@waterboards.ca.gov
- Erick Burres - erick.burres@waterboards.ca.gov
- Charlow Arzadon – charlow.arzadon@waterboards.ca.gov

GovOps! – **Stuart Drown, Angie Quirarte, John Cornelison, Scott Gregory et al.**

SWAMP

- Statewide Monitoring
- Regional Projects
- Data Outreach and Inreach



Open Data Culture



Office of Information Management and Analysis (OIMA)

SWAMP Unit

Lori Webber (Sr ES)

Surface Water Ambient
Monitoring Program -
Overall Program
Management and Support

SWAMP IQ Unit

Melissa Morris (Sr ES)

Quality Assurance and
Quality Management
Support for SWAMP and
the CA Env Data
Exchange Network
(CEDEN)

Data Integration

Jarma Bennett (Sr Eng)

Data integration and
analysis, CEDEN and
CIWQS Project
Management, “Open
Data” Initiative

Additional OIMA Staff/Services/Functions

SWAMP Senior Scientist - Dawit Tadesse, Staff Scientist

QA Officer - Renee Spears, Staff Scientist

Citizen Monitoring - Erick Burren, Staff Scientist

Water Quality Monitoring Council - Jon Marshack, Executive
Director

Open Data

“Open data is data that can be freely used, re-used and redistributed by anyone - subject only, at most, to the requirement to attribute and sharealike.”

Technically open: [data] available in a machine-readable standard format, which means it can be retrieved and meaningfully processed by a computer application.

Legally open: [data] explicitly licensed in a way that permits commercial and non-commercial use and re-use without restrictions.

Water Boards Open Data Initiative

Phase 1

1. URL wrangling and the creation of an open data “corral” or single entry point for all Water Board data
2. Pilot use of open data platform with small set of datasets

Phase 2

URL wrangling and the creation of a the Open Data Corral

“Water Data Integration” Opportunities

OIMA Water Board Events

March 18 - Data Fair

April 2-22 - Data Innovation
Challenge

June 29 - Water Quality Science
Symposium

OIMA Brown Bag Series

Water Data Integration Topics in OIMA

Science Topics

Biointegrity

Pesticides/toxicity

Bioaccumulation

CECs

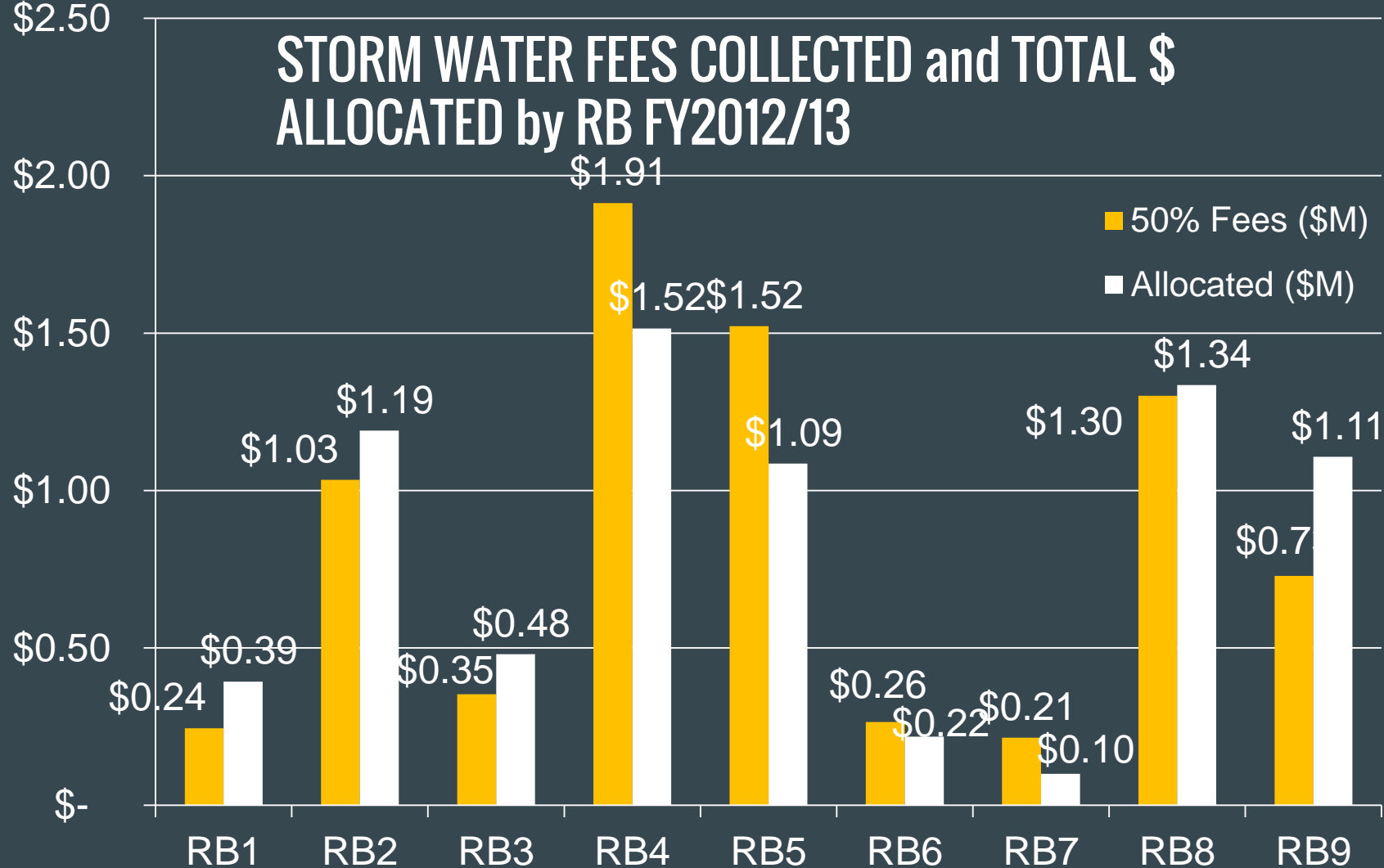
Climate

Case Study

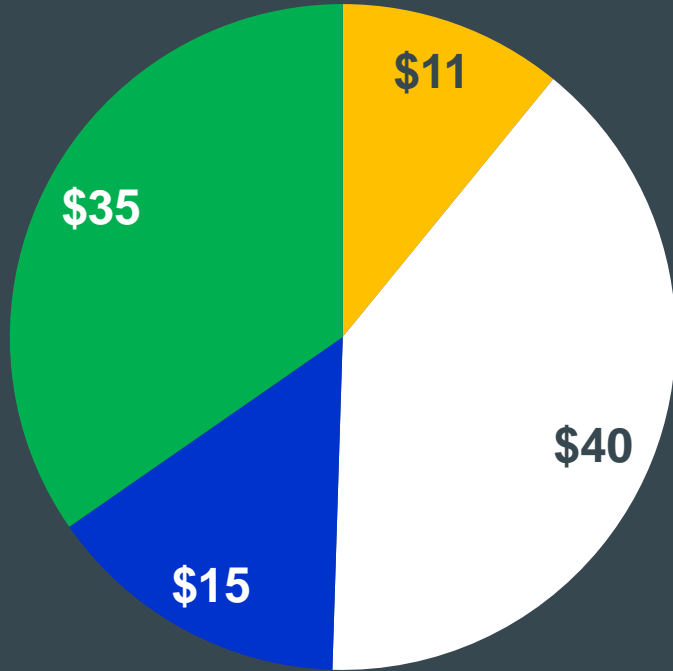
Storm Water Program Resources
“Performance Report” for FY2012/13



STORM WATER FEES COLLECTED and TOTAL \$ ALLOCATED by RB FY2012/13

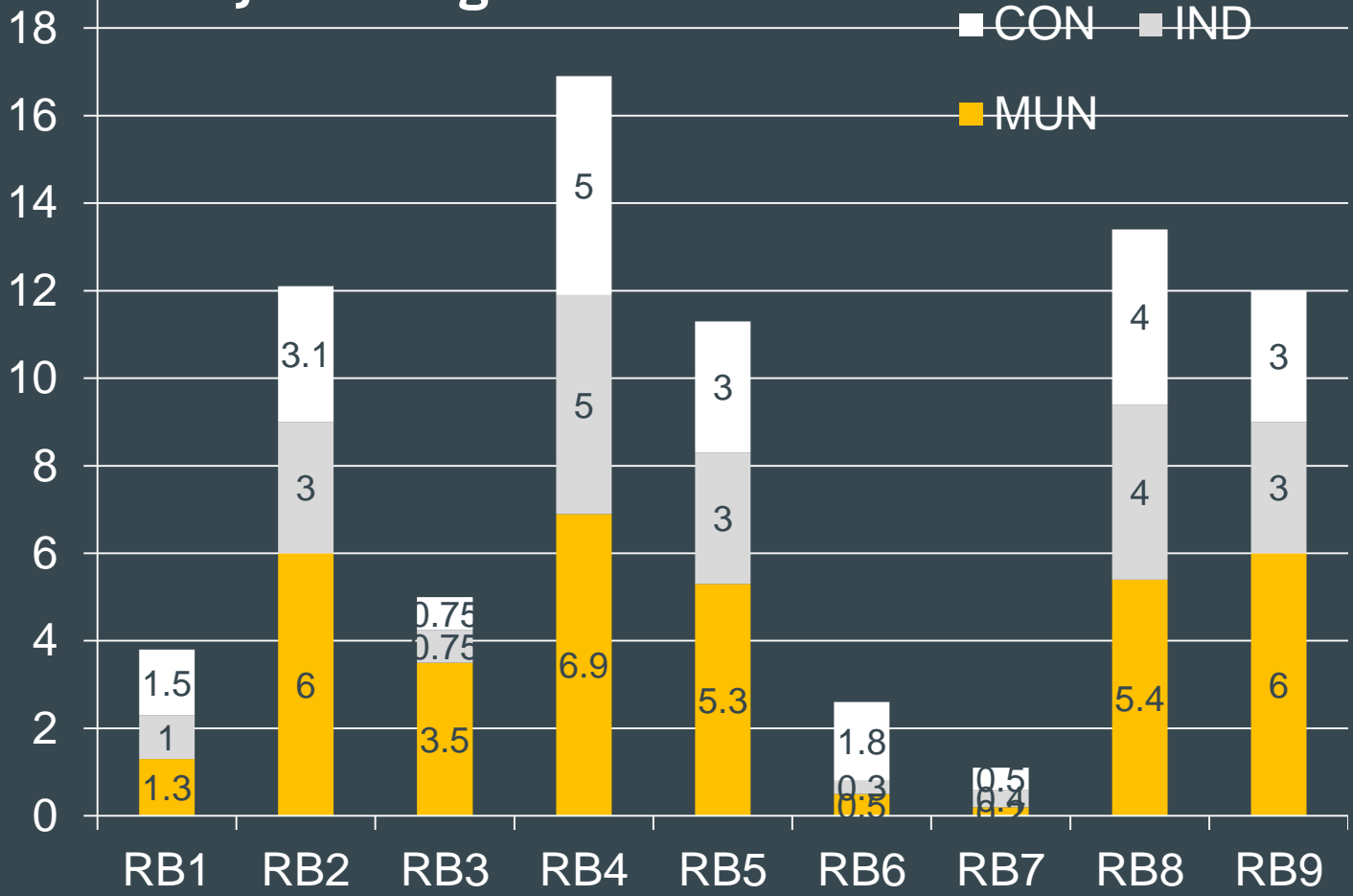


Where does \$100 in fees collected under SW go



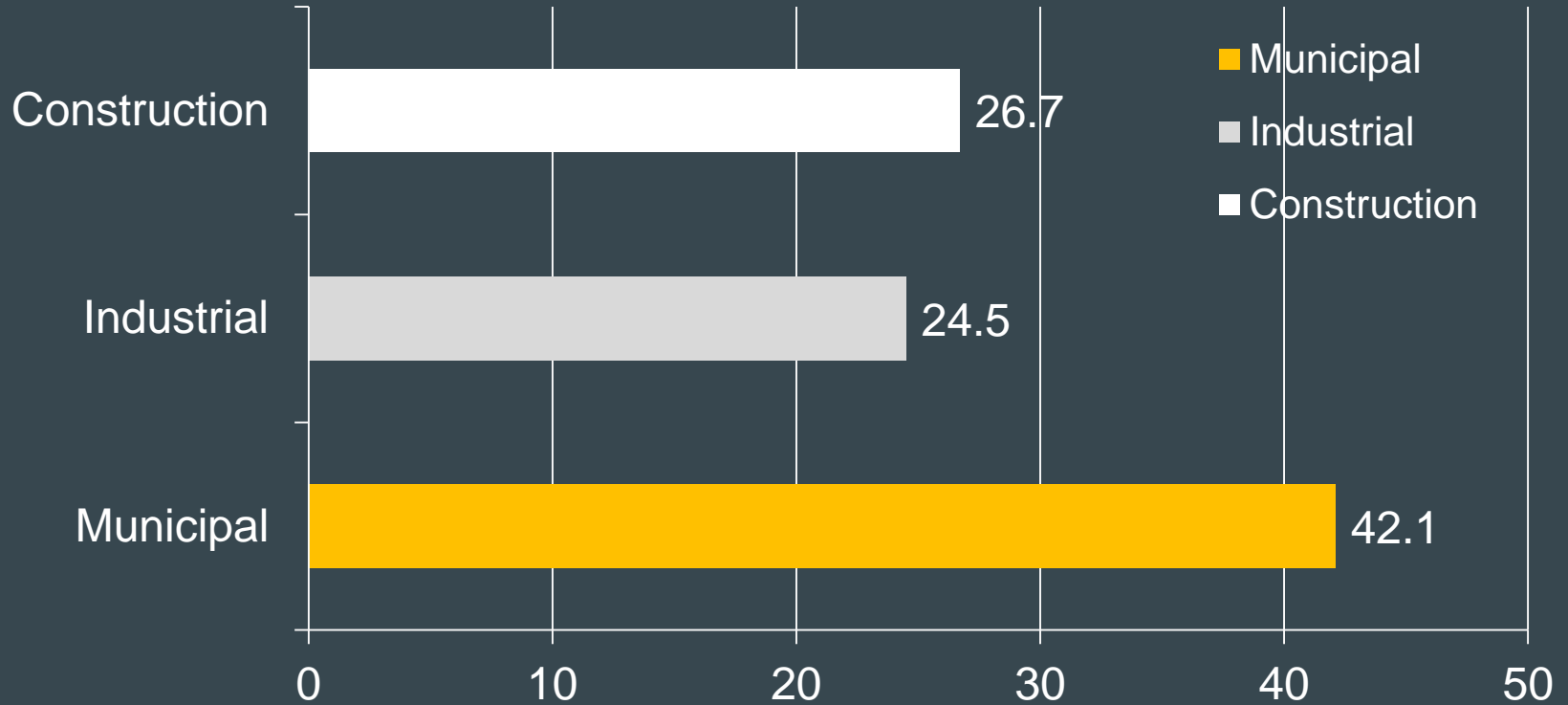
- WDPF
- Personnel
- Operating and Equipment
- Indirect

PYs by Sub Program



Rollup of PYs by Sub Program

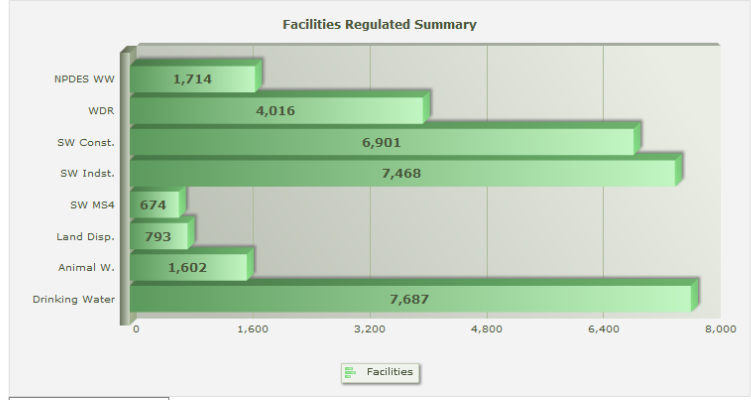
PYs



Water Boards' Performance Reporting System

Office of Research Planning and Performance

The California Water Boards' Annual Performance Report - Fiscal Year 2014-15



Summaries:

Click on one of the bars on the above, or select from the drop-down menu, to see details for that program. Click on one of the columns on the right, to see further details.

Fiscal Year 2014-15 Statewide Overview of Regulated Facilities	
Total Regulated Facilities:	30,855
Total Inspections Conducted:	6,842
Individual Permits Adopted	587
Enrollments in General Permits	3823
Monitoring Reports Reviewed:	27,887

Programs:

What We Do and How We are Doing

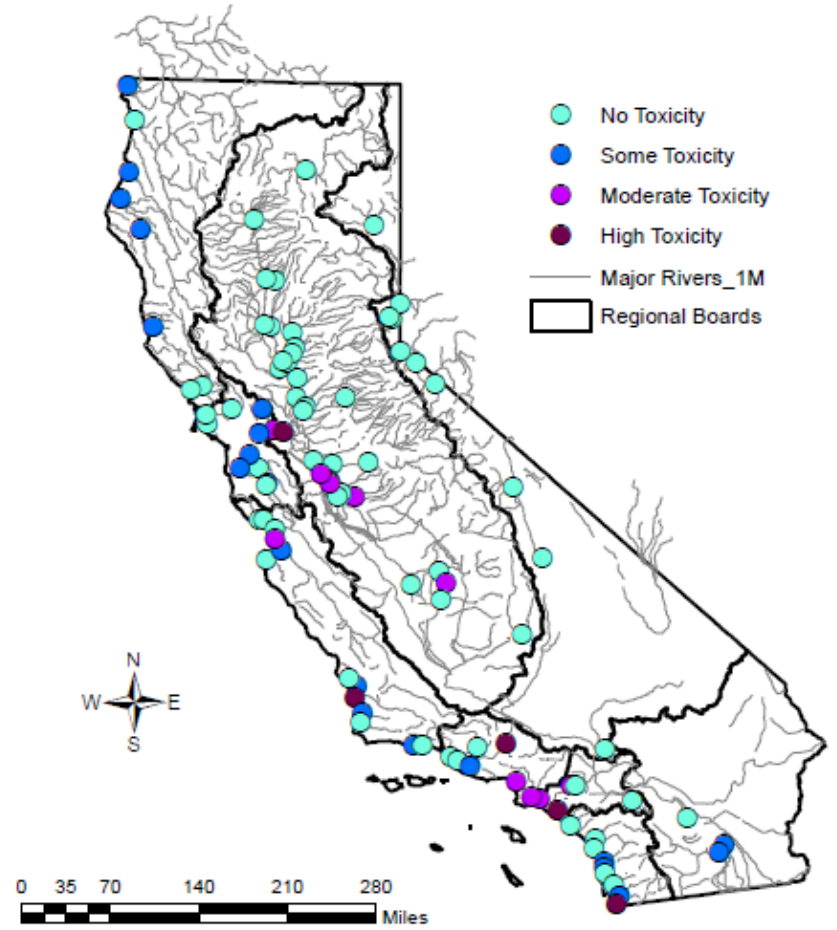
THE WATER BOARDS REGULATE

The State and Regional Water Boards identify the sources of pollutants that threaten the quality of the State's waters and regulate those sources by imposing requirements to control the pollutants, based on laws, regulations, plans and policies designed to protect water quality. The State Water Board also regulates water utilities that serve drinking water to the public. Discharges of pollutants come in various forms and amounts, and from a variety of sources. Where a discharge is being made or will be made to a water body, a permit to discharge is needed. Such permits are called "waste discharge requirements". To be effective, the Water Boards must ensure that permit requirements are enforceable. Discharger and water system's compliance with permits is assessed through review of waste discharge reports, and drinking water quality and operational reports, respectively, and inspections. Where documented violations of permit requirements occur, the Water Boards are responsible for taking enforcement actions. [more...](#)

Toxicity and Pesticides

[What if we added biological and physical assessment data?]

Mean Magnitude of Toxicity 2008 - 2012



How toxic are California's waters?

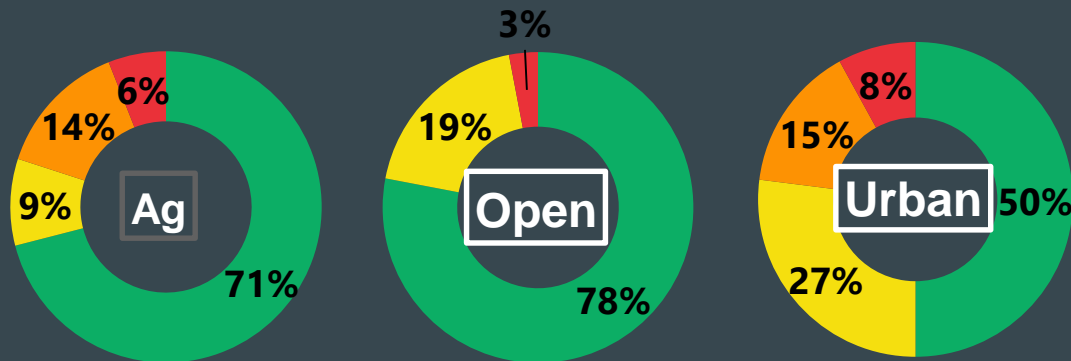
- Surface water toxicity pervasive in California
- 50% water and sediment samples statewide toxic 2001-2010
- Most toxicity observed in urban areas

50%

of sites sampled for toxicity had at least one toxic sample

Toxicity Related to Land Use

■ No Toxicity ■ Some Toxicity ■ Moderate Toxicity ■ High Toxicity

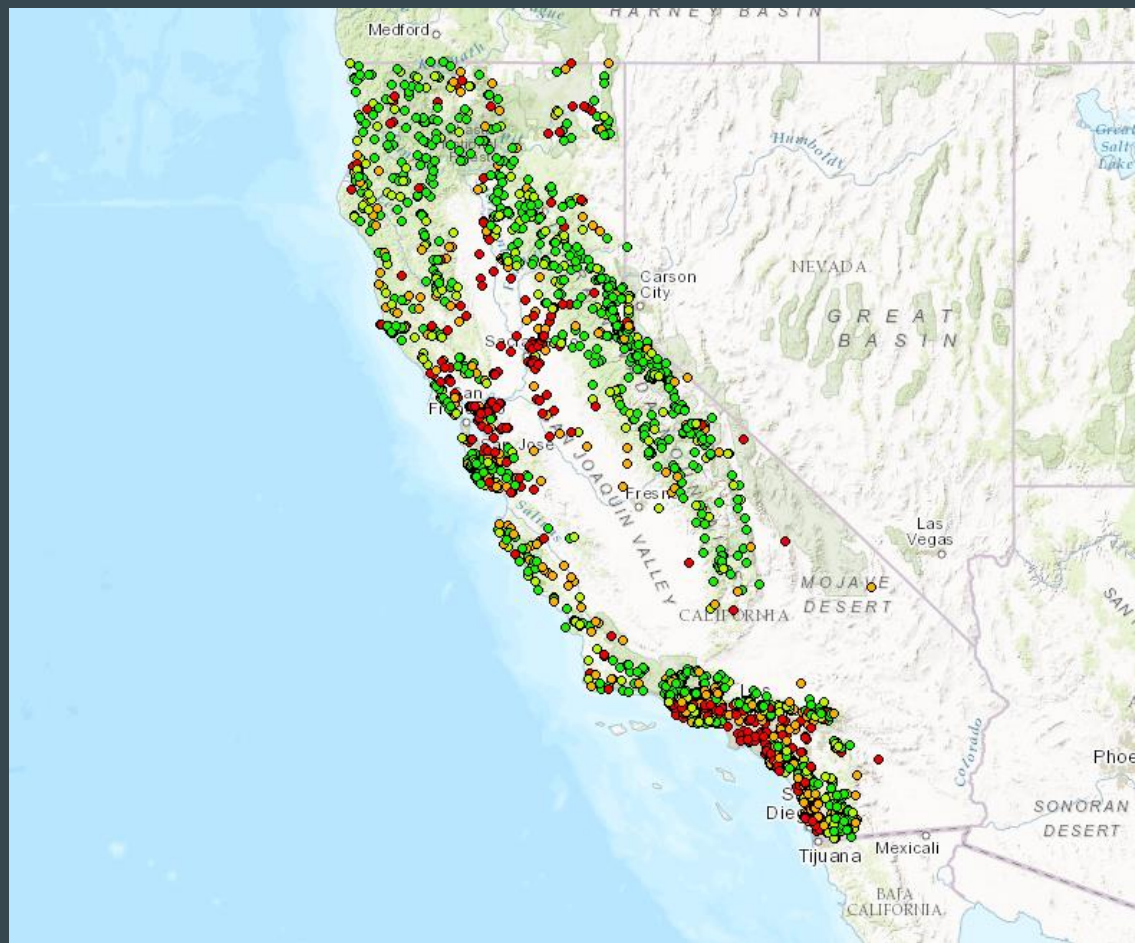


Samples in Land Use (%)

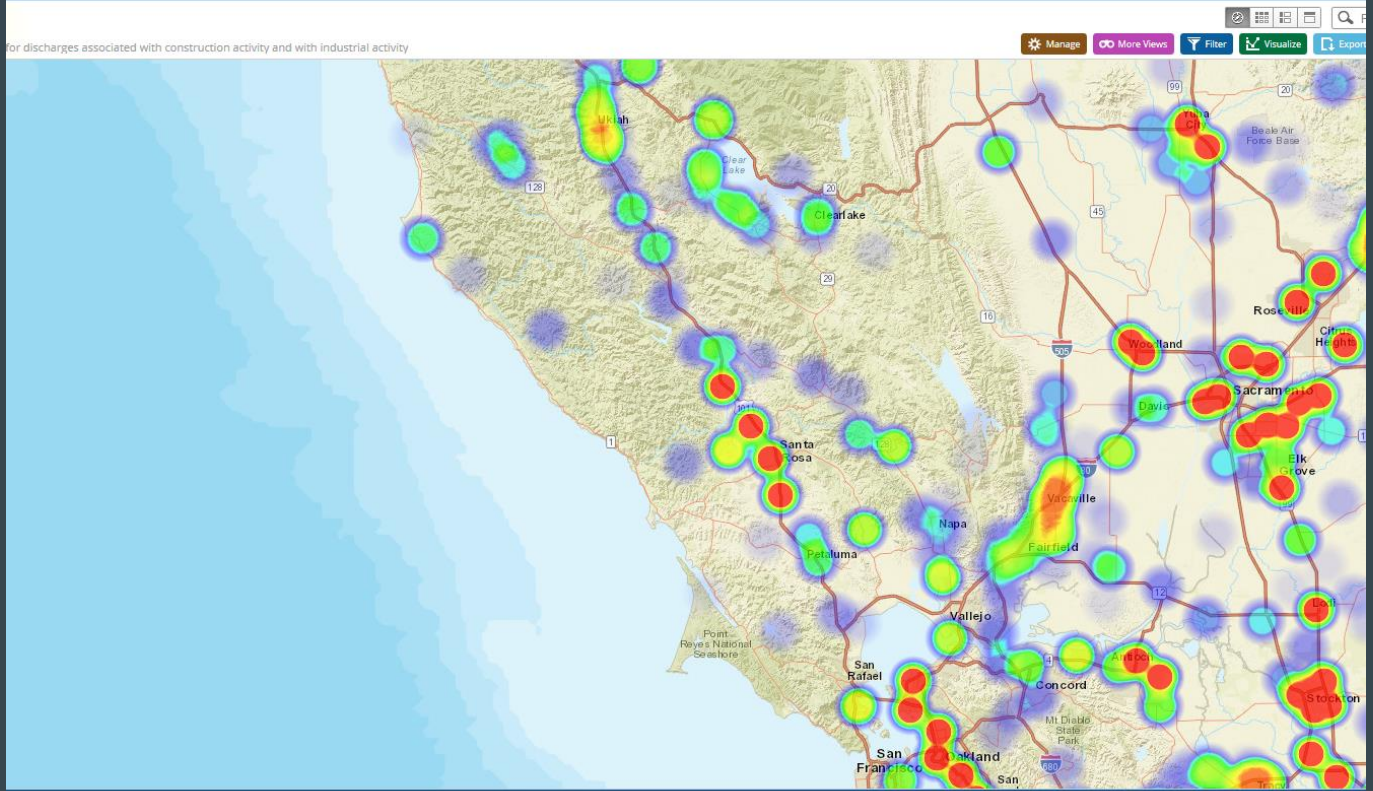
Source: SWAMP 10-Year Toxicity Report, Anderson et al. 2011

California
Stream
Condition
Index

S
C
O
R
E
S



http://www.waterboards.ca.gov/water_issues/programs/swamp/bioassessment/csci_scores_map.shtml



Heat Map
Storm Water Violations
SMARTS & Socrata

<https://greengov.data.ca.gov>

Water Board Datasets on greengov.data.ca.gov

System	Dataset	Data Status
CEDEN	Toxicity	Available April 1
CEDEN	Chemistry	Available April 1
CEDEN	Tissue	Available April 1
CEDEN	Habitat	Available April 1
CEDEN	Benthic	Available April 1
CIWQS	Violations	Available today
CIWQS	Enforcement Actions	Available today
CIWQS	Violations Linked to Enforcement Actions	Available today
CIWQS	Self Reported Water Data	Available today
CIWQS	Regulatory Measures (permits, etc.)	Available today
CIWQS	Inspections	Available today
SMARTS	Violations	Available today
SMARTS	Enforcement Actions	Available April 1
SMARTS	Inspections	Available April 1
SMARTS	Enrollment	Available April 1

Web stuff:

- www.waterboards.ca.gov/resources/data_databases/
- www.waterboards.ca.gov/water_issues/programs/swamp/
- findanewway.ca.gov (#CAWaterDataDive)
- www.ceden.org

Why?



Whistleblower

betrayal

double-crosser

snitcher

squealer

tattletale

Marc Edwards, Ph.D.
Charles P. Lunsford Professor
Virginia Tech University



Who?

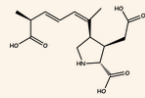


Elden Vestal

CA Fish and Game Biologist

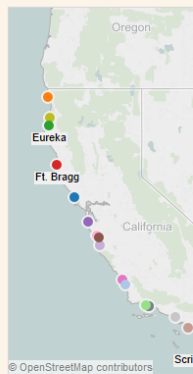
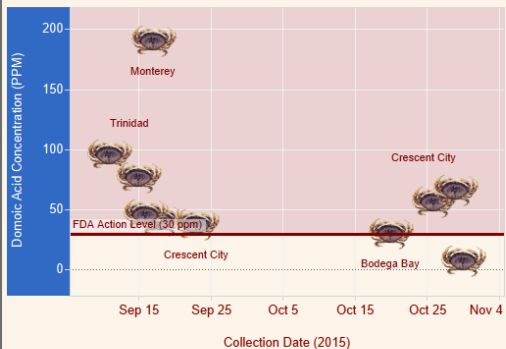


Domoic Acid From Nasty Algae Shuts Down Dungeness Crab Fishery!

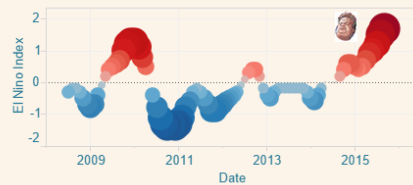


Domoic acid levels in crab tissue are extremely high. Click on the chemical formula to see how domoic acid wreaks havoc on ocean life. Check back regularly for the latest domoic acid crab data.

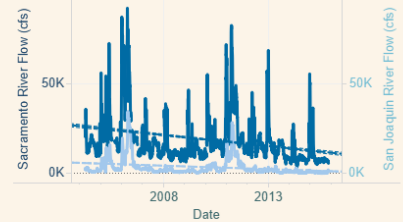
Hover over a crab sampling location to see its data.



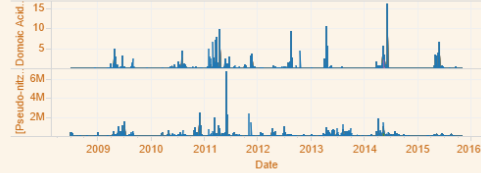
What is different about 2015 that might be causing this unprecedented contamination of Dungeness crabs? First, 2015 is shaping up to be one of the most extreme El Nino events in recorded history. Click on Chris Farley for more information.



At the same time El Nino is driving record ocean water temperatures, the epic California drought has reduced flows in California's rivers to a trickle.



Domoic acid-spewing algae blooms appear lower than previous years - so why are the crabs so gnarly this year? Click on the map to the right to see a decade of Pacific Ocean algae blooms.



Select years

(Multiple va...)

Select location

(All)

Select California River flows from any period in recorded history.

March 30, 2004

November 9, 2015

This analysis was performed by avid crabbers at FlowWest, LLC with publically available data from multiple sources. We are not Dungeness crab experts. Please contact us with questions or additional data you'd like to see included at info@flowwest.com.



Undo Redo Reset

1,230 views | more by this author

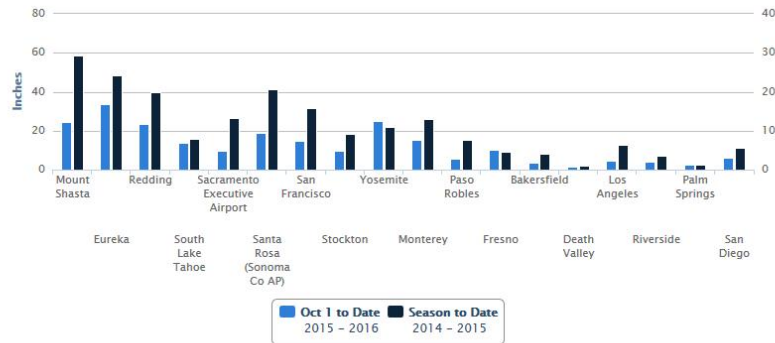
Share Download

[LOGIN](#)[JOIN BDL COMMUNITY](#)[HELP](#)[SEARCH](#)

EXECUTIVE UPDATE

Snow Water Content**Precipitation**

Selected Cities Precipitation Accumulation



HYDROLOGIC CONDITIONS IN CALIFORNIA: PRECIPITATION

Daily Precipitation (In Inches) for Selected Stations as of 03/01/2016

Station	Oct 1 to Date 2015 - 2016	% Average	Season to Date 2014 - 2015	% Average	% Average Oct 1 - Sep 30