



San Diego Coastkeeper Water Monitoring Program

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mission



San Diego Coastkeeper aims to protect and restore fishable, swimmable, and drinkable waters in San Diego County

program history



< 2006

- Lack of environmental information
- Municipalities – infrequent and localized
- Need for better baseline data

Solution = start our own program

goals



1. DATA

2. MANAGEMENT

3. EDUCATION & ENGAGEMENT

volunteer led



volunteer scientists corps

quality controlled data



volunteer led



Standard Operating Procedure

QAPP

SDCK FIELD SOP



SDCK Lab/ Field collection and Analysis of Water Samples / Standard Operating Procedure

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50-16-40016 San Diego Regional Water Quality Assessment and Outreach Project 9 September 2010

1. Title and Approval Page

San Diego Regional Water Quality Assessment and Outreach Project **QUALITY ASSURANCE PROJECT PLAN**

COMPLETED PLAN PREPARED BY:
Clay Clifton: San Diego Coastkeeper, Local Project Sponsor Manager
And
John Rudolph: Nautikos
Dr. Rick Gersberg: San Diego State University
Bryan Bjornisd: Astroc Controls, Inc.
Morgan Justice-Black: I Love A Clean San Diego.

Refer correspondence to:
Clay Clifton, Watershed Monitoring Program Manager
San Diego Coastkeeper
2825 Dewey Road, Suite 200
San Diego CA 92105
cclif@sdcoastkeeper.org

Approvals:

State Project Manager, State Dept of Water Resources: [unnamed Chief, Division of IRWM]
Signature: _____ Date: _____

Contract Project Manager, San Diego County Water Authority: Mark Stadler
Signature: _____ Date: _____

Local Project Sponsor Manager, San Diego Coastkeeper: Clay Clifton
Signature: _____ Date: 9/23/10

Local Project Sponsor QA Officer, San Diego Coastkeeper: Travis Pritchard
Signature: _____ Date: 9/23/10

Contractor QA Officer (Invertebrate bio-assessment), Nautikos Environmental LLC: John Rudolph
Signature: _____ Date: _____

Contractor QA Officer (Metal and Nutrient), San Diego State University (SDSU): Dr. Rick Gersberg
Signature: _____ Date: 9/24/10

Contractor QA Officer (Trash Removal), I Love A Clean San Diego (ILACS): Morgan Justice-Black
Signature: _____ Date: 9-24-10

State QA Officer, San Diego Regional Water Quality Control Board (SD RWQCB): Helen Yu
Signature: _____ Date: 9/14/2010

volunteer led



Field Volunteers



Lab Volunteers



parameters



- ambient
- 'basic' measurements
- metals
- toxicity
- nutrients
- indicator bacteria



data



Transparency

- Coastkeeper database
- State of CA database – CEDEN
- Coastkeeper watershed wiki

Decision-making

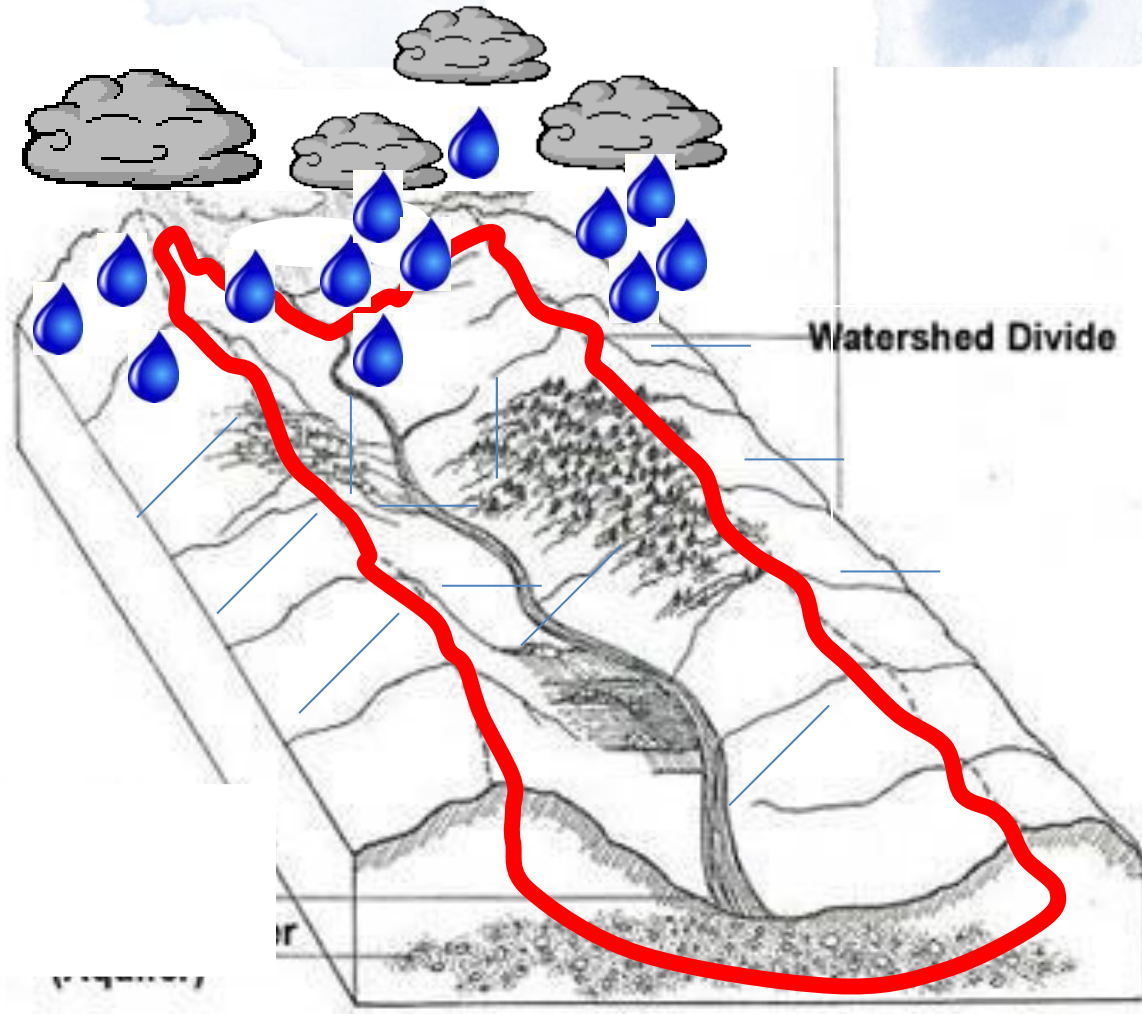
- State & Regional Water Board – 303d
- Municipalities
- Watershed reports



Training



Watersheds

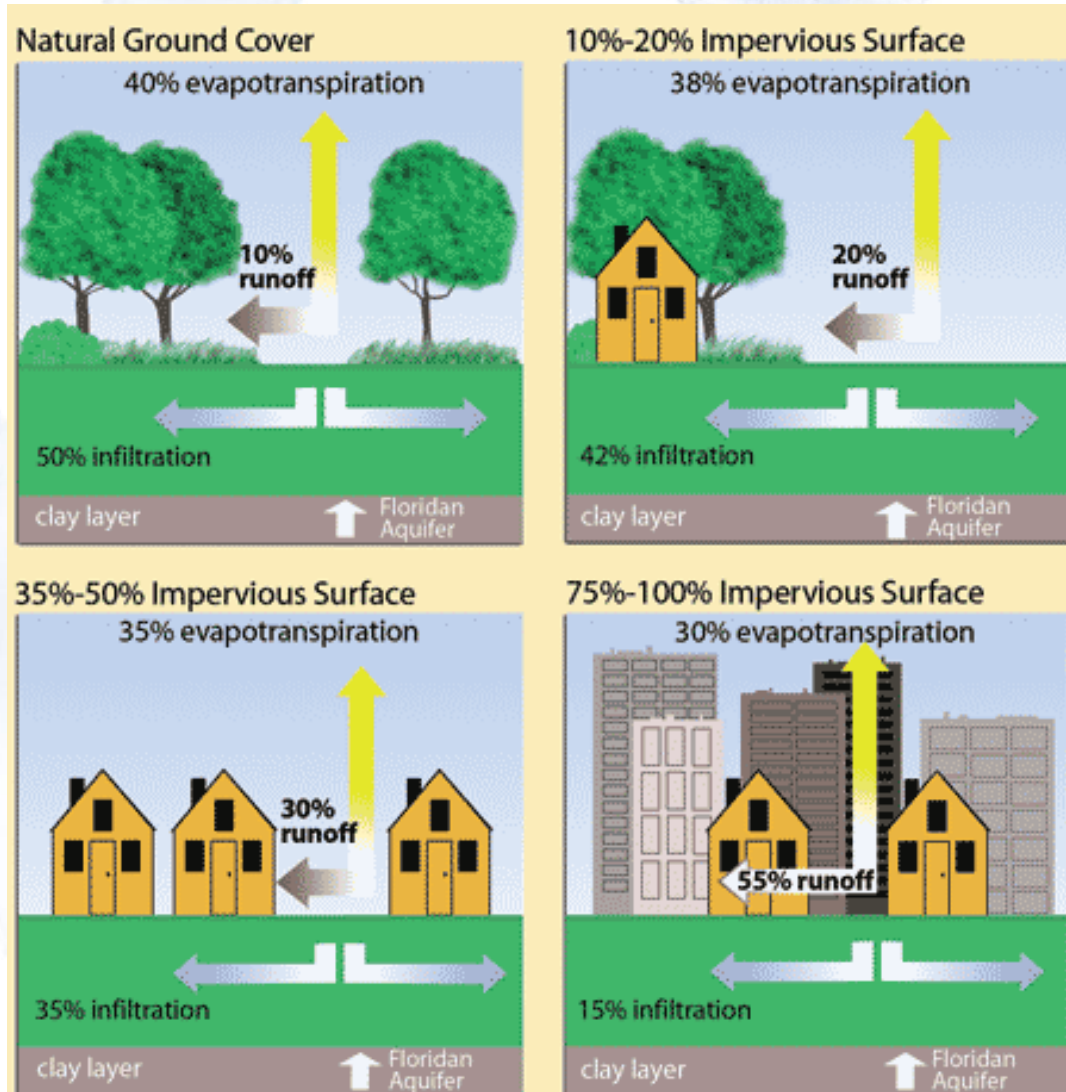


Watershed = A river runs through it

The Impact of Urbanization



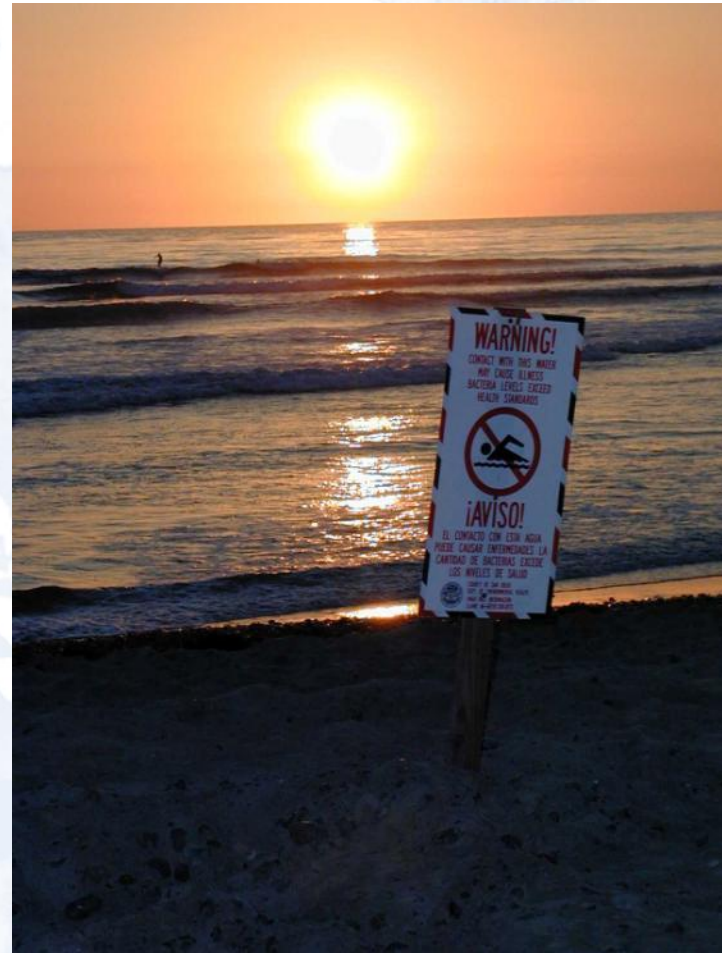
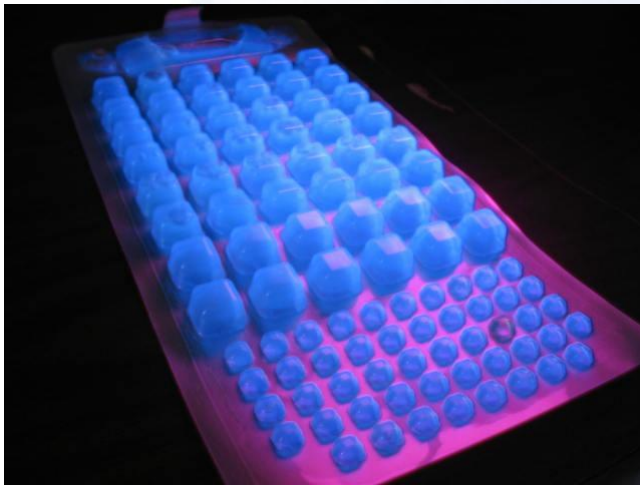
- Hard surfaces disrupt the normal water cycle



Bacteria / Pathogens



- Source = any warm blooded animal
- Disease causing
- Economic and social costs



Some Basics of Quality Control



Good data comes from:

1. Consistency
2. Completeness
3. Attention to detail

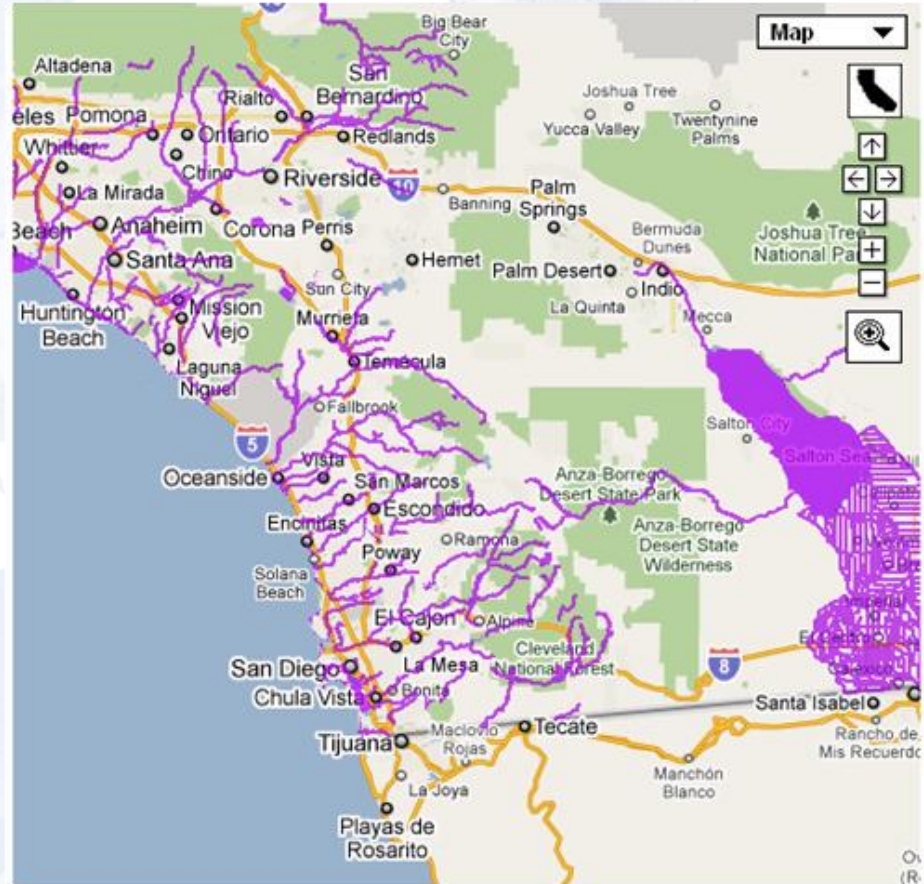


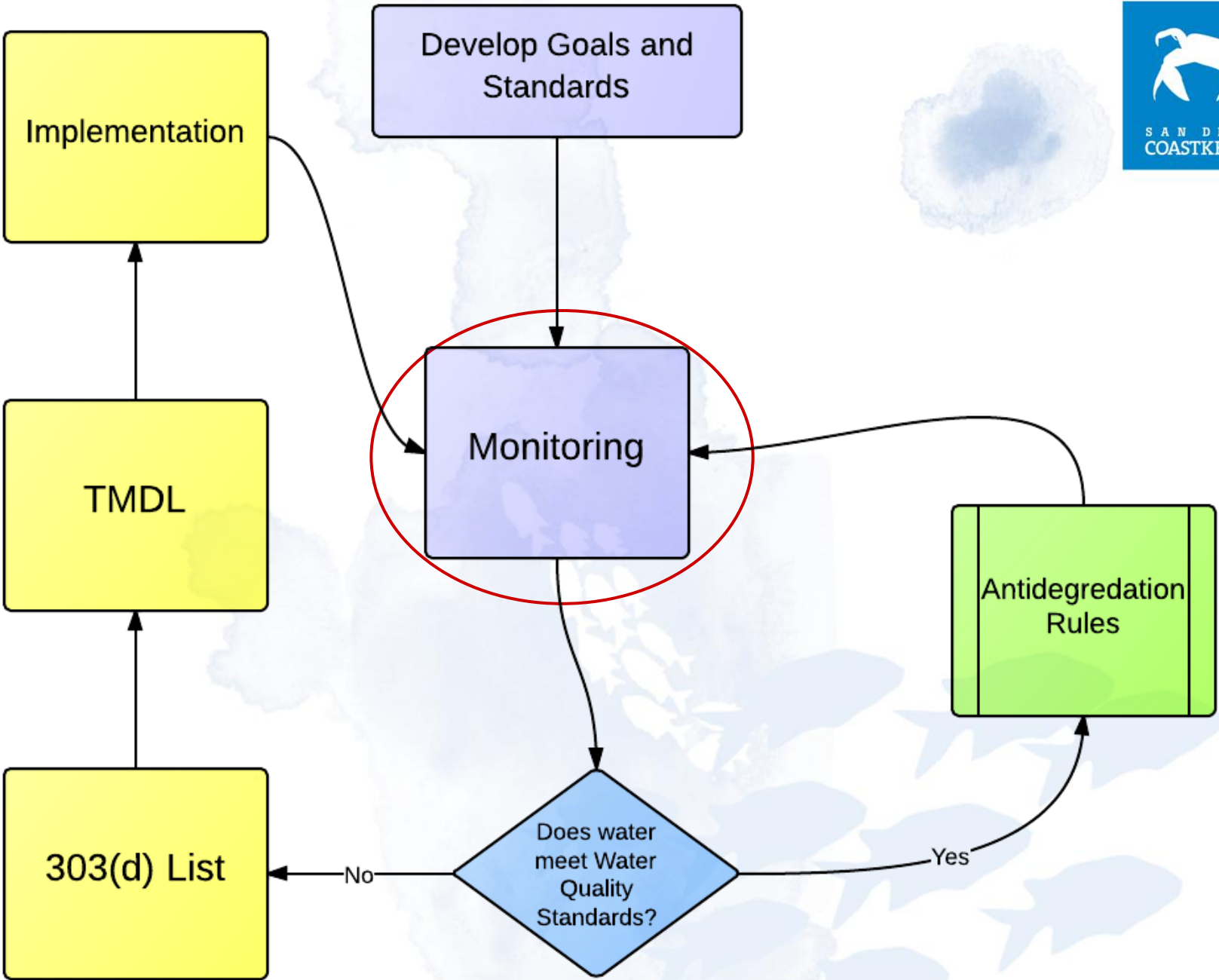
Quality assurance and quality control = usable data

Section 3 - Policy



- Many waterbodies are listed as impaired
- Only a few clean up plans completed







Methods



Sampling





Filtering in the field



Hach HQ40d with pH and Conductivity Probes



IDEXX Colisure and Enterolert



Hach TNT Nutrient Test Kits



Dissolved Metals



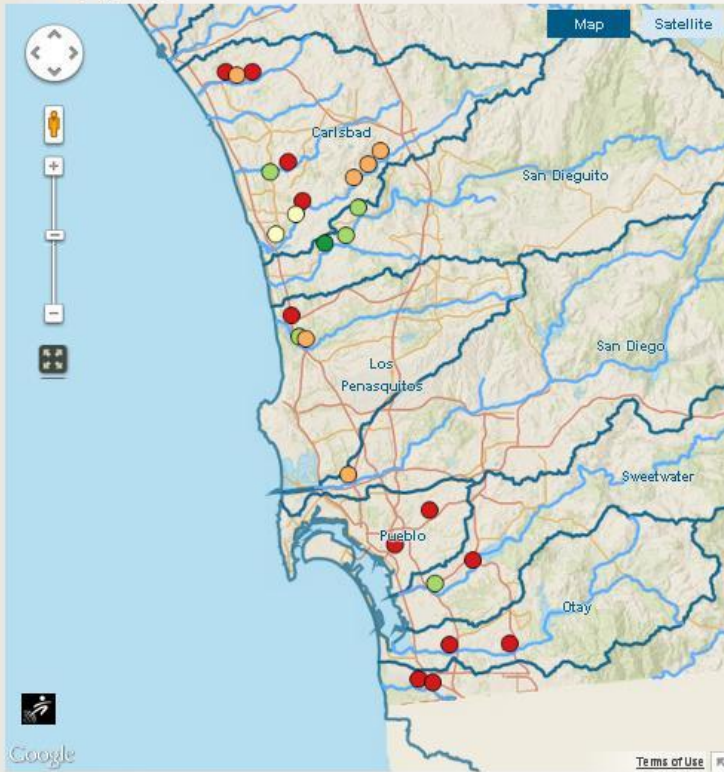


Communication

San Diego Watersheds

What is a watershed? A place in the backyard to store irrigation pipes? No, not quite. Watersheds are the ecosystems where we live. If we were to get rid of the country, state, and city political labels, we would see our lives defined by the ecosystems that surround us and the habitats, wildlife and rivers within them. Groundwater and surface waters like streams and rivers, and their end points at the ocean or in coastal lagoons, are the life blood for ecosystems. The water quality in them defines the flood control, habitat, wildlife and natural filtering resources and capabilities of a watershed. We have eleven watersheds in the county that drain toward the Pacific Ocean. Read more on these pages about the watershed that you live in.

View as: [Map](#) | [Graph](#)



Water Quality Rating

● Excellent ● Good ● Fair ● Marginal ● Poor

View San Diego Watersheds

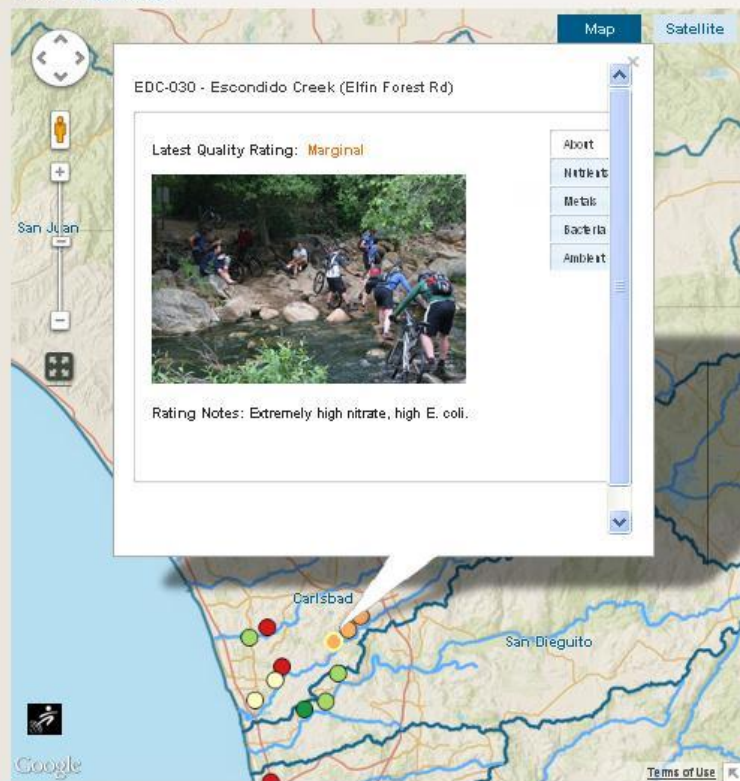
View Major Streams

data portal

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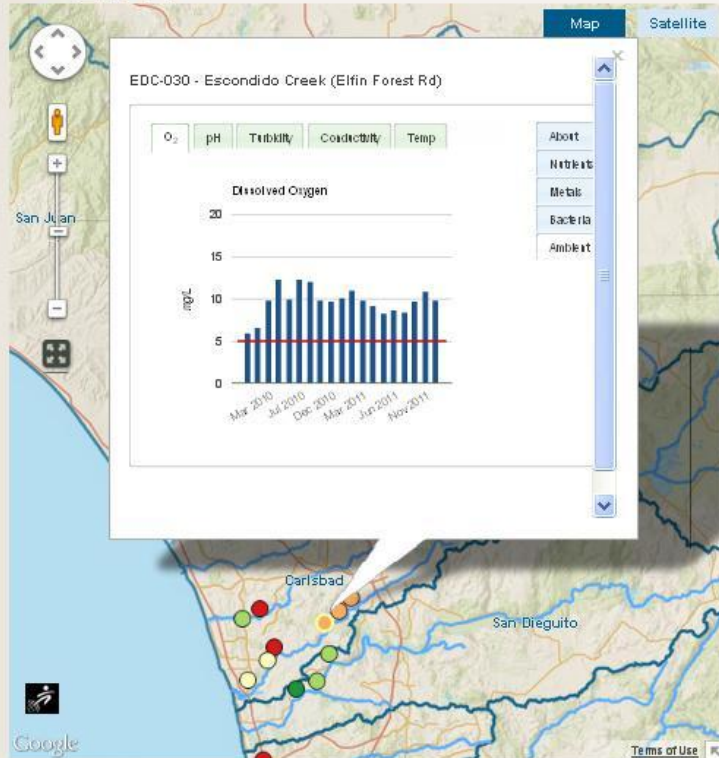


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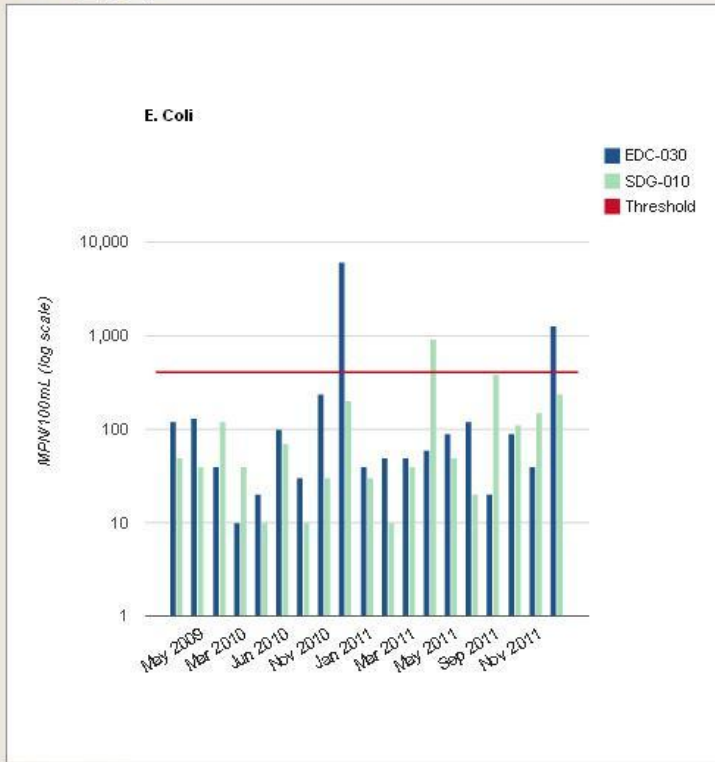
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Constituent: Sites:

Date:

Select up to 2 stations

data portal



Water Quality Index

$$F1 = \left(\frac{\# \text{ failed parameters}}{\text{Total \# of parameters}} \right) \times 100$$

$$\text{Excursion} = \left(\frac{\text{failed test value}}{\text{guideline value}} \right) - 1$$

$$NSE = \left(\frac{\sum \text{excursion}}{\text{Total \# of parameters}} \right)$$

$$F2 = \left(\frac{nse}{0.01(nse) + 0.01} \right)$$

$$WQI = 100 - \left(\frac{\sqrt{F1^2 + F2^2}}{1.4142} \right)$$

Adapted from: C. Rickwood and G. Carr, "Global Drinking Water Quality Index Development and Sensitivity Analysis Report," 2007.

<http://www.unep.org/gemswater/>



HOW DO I? [contact us](#) | [site map](#)

[Find Data](#)

[Submit Data](#)

[About CEDEN](#)

Visit the
Water Quality Monitoring Council's



[data interpretation web portal](#)

The California Environmental Data Exchange Network (CEDEN) is a central location to find and share information about California's water bodies, including streams, lakes, rivers, and the coastal ocean. Many groups in California monitor water quality, aquatic habitat, and wildlife health to ensure good stewardship of our ecological resources. CEDEN aggregates this data and makes it accessible to environmental managers and the public.

For more information, a two page [CEDEN Fact Sheet](#) and eight page [Information Document](#) are available for download.

News & Highlights

Welcome to the CEDEN website. Please subscribe to our Twitter feed: [@CEDEN_News](#) for occasional updates about CEDEN products and data.

8/10/12: New guidance documents for Taxonomy and Tissue data have been added to the data templates page.



Travis Pritchard <travis@sdcoastkeeper.org>

Request for data from stream monitoring to incorporate into Copermittees MS4 Report

3 messages

Weber, Jo Ann <JoAnn.Weber@sdcounty.ca.gov>
To: Travis Pritchard <travis@sdcoastkeeper.org>

Mon, Aug 6, 2012 at 11:21 AM

Dear Travis, Copermittees had wanted to incorporate the analytical data you collect from streams in our MS4 Annual Report that is due to the RWQCH at the end of January 2013. At your convenience, could you please send it in an Excel or other similar format from approximately July 1, 2011 to June 30, 2012? Thanks Travis and I hope you are enjoying the summertime! Please do call me if you have any questions. Take care, Jo Ann



Travis Pritchard <travis@sdcoastkeeper.org>

Inquiry about SD Coastkeeper's volunteer program

SF Baykeeper Volunteers <volunteer@baykeeper.org>
To: travis@sdcoastkeeper.org

Thu, Jun 14, 2012 at 8:48 AM

Dear Travis,

My name is Shirley and I am currently helping the San Francisco Baykeeper develop its volunteer program, specifically to collect more water quality samples in the San Francisco Bay area.

I was wondering if it would be possible to schedule a phone conference and ask a few questions about San Diego Coastkeeper's water sampling volunteer program as reference for SF Baykeeper's volunteer program development. We have heard so much about SD Coastkeeper's extensive and successful volunteer program and definitely want to learn from you, especially as we are also trying to establish a volunteer program in a large city. Thank you in advance!



**FACTORS AFFECTING REGIONWIDE WATER QUALITY OF SAN
DIEGO COUNTY WATERSHEDS**

A Thesis
Presented to the
Faculty of
San Diego State University

In Partial Fulfillment
of the Requirements for the Degree
Masters
in
Public Health

by
Melissa Ta
Summer 2012



Outreach Events



- 5 World Water Monitoring Day Events
- High Tech Fair
- Walk the Watershed
- San Diego Science Festival
- Signs of the Tide Community Forums
- San Diego River Watershed Regional Monitoring Workgroup
- Coastal Cleanup Day





Success Stories



2008-2012



- Trained over 698 community members
- Collected and analyzed approximately 1,220 water samples
- Performed 7 rapid trash assessments and clean-ups utilizing the San Francisco Bay Regional Water Quality Control Board's Surface Water Ambient Monitoring protocols
- Bioassessments at five sites
- 55 new volunteers already signed up for training through May



Sewage Spill Highlights



- Region wide blackout - 4 pm - 11 pm
- 2 Sewage pump stations failed releasing 3.5 million gallons of water
- Wastewater authorities assumed sewage water flowed straight to ocean

Sewage spills still coastline

by **Mike Lee** 12:36 PM, SEPT 12, 2011 Updated 5:28 PM



Dead fish in Los Peñasquitos Lagoon were reported by the Sept. 8 sewage spill into the waterway. — San Diego Ocean

Sewage pollution from last week growing worse in other areas as shoreline, environmental health

At the same time, San Diego another million gallons of sewage that hit Peñasquitos Lagoon.

Tests announced Monday show state standards at beaches near to remain in place through the week health officials require two days

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SD Sewage Pumps Need New Generators

Stations due for backup generators: \$17 million price tag

By Gene Cubbison | Wednesday, Feb 29, 2012 | Updated 9:14 PM PST

View Comments (0) | Email | Print | +1 0 | Tweet 7 | Recommend 2 | Send



The City of San Diego will have to spend millions on new generators to prevent raw sewage from spilling into the ocean. University City resident Pieter Leeftang, Canadian resident Lisa Davidson and Craig Thompson, a Rancho Peñasquitos resident, discuss the implications of the situation. Gene Cubbison reports.

When the power went out all over our region last year, millions of gallons of raw sewage poured into the Pacific and San Diego Bay.

Now the city is having to spend big bucks to prevent a re-run, if there's another blackout.

The sewage facility that broke down when electrical service failed -- Pump Station 64, located west of southbound Interstate 5 on the edge of Los Peñasquitos Lagoon -- doesn't have an emergency backup generator.

City officials decided not to install one a decade ago.

The events of last Sep. 8 have since changed their minds

search

effects of sewage spill may closures

On Sept. 8, an unprecedented region wide blackout threw communities from Orange County to northern Mexico and east to Yuma, Ariz. into darkness.

La Jollans experienced long waits at blacked-out traffic lights, dinner by candlelight and dark beaches lit only by the glow of phosphorescent plankton. District 1 City Councilwoman Sherri Lightner used her Facebook page to alert residents to the boil water advisory, which affected La Jollans west of I-5 and north to La Jolla Parkway.

stkeeper's water quality monitoring program of fecal indicator bacteria, ammonia, in the Los Peñasquitos Lagoon, the site of a San Diego's power outage on Sept. 8.

10745 Roselle St. — was discovered just

Beach were immediately closed due to On Sept. 13, however, Scripps Pier and easurements indicating those waters were safe

press time, and city officials reported that likely to remain closed throughout the week.

leased by the news of some reopenings, the \$.

Peñasquitos Lagoon — typically one of the top bacterial concentrations were at least 600

Next Steps



- Using monitoring data to find and fix stormwater problems
- GIS based tracking of pollutants
- Integrate Trash Assessment Program into '13 Bight Marine Debris Study