

CA Water Board Data Innovation Challenge

OpenGov

Sami Baig

Andrew Blythe

Mike Dougherty

Joel Natividad

Cyrus Pinto

www.opengov.com

Problem

The Water Board is responsible for regulating discharges of waste that may impact surface or groundwater quality. Many of today's challenges are related to human behavior, some of which may be unique to residents of California. How does water quality information inform the demographics of the areas around it?

Question: Is there a correlation between reported water quality and toxicity metrics with the average income levels or ethnic makeup of a region?

Example Link: <http://www.santacruzsentinel.com/article/ZZ/20140426/NEWS/140428112>



Santa Cruz Sentinel
NEWS

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Reports knocks Santa Cruz County water quality

Methodology

Step 1: Selected the following datasets.

- ❖ CEDEN Water Quality and Toxicity 2012-2015
- ❖ CA Water Quality Goals
- ❖ US Census 2014
- ❖ Average Income 2006-2010

Step 2: Inputted data into enterprise built Open Data CKAN Portal.

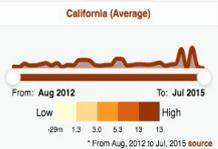
Step 3: Examined correlations between water quality tests and socio-economic factors.

Step 4: Visualized data using CivicDashboards.

Solution

California Water Quality

Analyte	Value	Unit
Amonia as N	0.29	(mg/L)
Arsenic	8.49	(mg/Kg dw)
Coliform	27,595.32	(MPN/100 mL)
E coli	924.81	(MPN/100 mL)
Iron	34,660.27	(mg/Kg dw)
Lead	17.27	(mg/Kg dw)
Manganese	720.87	(mg/Kg dw)
Nitrate + Nitrite as N	3.38	(mg/L)
Nitrate	1.23	(mg/L)
Nitrite as N	0.06	(mg/L)
pH	7.85	
Hexachlorobenzene		(ug/L)
PBDE 140		(ug/L)



Water Data with Demographics

Followers
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Organization



California

There is no description for this organization

Social

Google+

Dataset Groups Activity Stream Showcases

Water Data with Demographics

The CEDEN database contains field, chemistry, sediment and water column toxicity, tissue, taxonomy and benthic data. The data are collected by a large variety of environmental monitoring programs throughout California that monitor streams, lakes, rivers, and the coastal ocean. It includes quality assurance-related data.

Data and Resources

Water Data with Demographics

Explore

environment health water

Additional Info

Field	Value
Source	http://ceden.waterboards.ca.gov/AdvancedQueryTool
Last Updated	April 19, 2016, 2:41 PM (UTC-07:00)

Links:

<http://www.cividdashboards.com/project/cawater>

<http://catalog.cividdashboards.com/dataset/water-data-with-demographics>

Conclusions

- ❖ Negative relationship found between higher levels of several pesticides or chemicals and lower income levels
- ❖ Analyte levels also show strong relationship with ethnic makeup of test area
- ❖ Greater breadth of data needed but suggests further investigation warranted

Opportunities:

- A) Compute Hyperlocal Key Performance Indicators using Challenge data, similar to what we've done for other topic areas in CivicDashboards.
- B) There are Open Data tools available for archiving, curating, visualizing, and analyzing data. Open Source CKAN is an ecosystem that will enable the public sector to stay current with technological trends while meeting their immediate agency goals. Leveraging a managed service, enterprise open source platform will provide the best of both worlds, accomplishing technological and business needs.