

## From the Working Desk of Bert E. Perello

Oxnard City Councilman

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August 10, 2018

Los Angeles Regional Water Board Members  
C/O Rosario Aston, LARWQB Staff Representative  
Los Angeles Regional Water Quality Control Board  
320 West 4<sup>th</sup> Street, Suite 200  
Los Angeles, CA 90013

Via E-Mail: [rosario.aston@waterboards.ca.gov](mailto:rosario.aston@waterboards.ca.gov)

Attention: Madelyn Glickfeld, Chair  
Lawrence Yee, Vice- Chair  
Irma Munoz, Member  
Charles Stringer, Member  
Cynthia Guzman, Member

and: Cassandra D. Owens, LARWQB Chief, Industrial Permitting Unit

Regarding: Notice to Thomas DiCiulli, Plant Manager Dated June 28, 2018  
Mandalay Generating Station Tentative Termination of WDRs etc., Oxnard CA  
California South LP Mandalay  
NPDES No. CA00001180 / CI No. 2093

Dear Honorable LARWQCB Members:

I am writing this letter as current member of the Oxnard City Council, as well as one of two Members of the Oxnard City Council that serve on the City's Channel Islands Harbor Task Force.

And I also happen to reside within the boundaries of Councilmatic District No. 1, which will become effective upon the conclusion of the upcoming November 6, 2018 General Election. Councilmatic District No. 1 includes the Channel Islands Harbor Waterways communities of interest, and is the westernmost councilmatic district in the City of Oxnard.

My overarching public policy concern and focus on the Oxnard City Council has been and continues to be the preservation, protection, and defense of the public health, safety and welfare of ALL residents of the City of Oxnard, including those who reside in District 1.

I fully endorse and support the critical public policy arguments and requests for proactive, positive, and purposeful action by the Los Angeles Regional Water Quality Control Board in this matter that are contained in the August 9, 2018 letter signed by Mayor Pro Tem Carmen Ramirez, on behalf of the City of Oxnard. However, I wish to make some additional points which I believe are worthy of thoughtful consideration and purposeful action by your Board.

Earlier this year, beginning in mid-June, an adverse environmental event occurred in the Channel Islands Harbor Waterways. Namely an unprecedented Algal Bloom appeared and substantially degraded the clarity, appearance, and generally good ambient water quality condition of the harbor waterways that was typically experienced before this event.

Rightly so, numerous Channel Islands Harbor Waterway residents were greatly alarmed, and contacted the City of Oxnard reporting unusual algae, murky water, and clear visibility depths diminishing to 3 feet or less, as opposed to the prior typical condition of being able to see the bottom of the channel at over 10 feet deep.

On June 23<sup>rd</sup>, the Oxnard Public Works Department started testing water quality at 25 sites in the Channel Islands Harbor. And they reported that several of the sites showed dissolved oxygen (DO) **below** 5.0 through early July. *As your Board is well aware, DO levels below 5.0 ppm are considered hazardous to aquatic species.* Oxnard Public Works also tested 5 sites on June 28<sup>th</sup> for bacteriological contaminants and found that the results were within acceptable levels on that date.

Additionally, Aquatic Eco Technologies and Aquatic Bioassay Consulting, a firm retained by the City of Oxnard, reported that they had tested the water quality at 5 locations in the Channel Islands Harbor on June 19<sup>th</sup>, 21<sup>st</sup> and 22<sup>nd</sup> 2018 and reported that Total Nitrogen (TKN) and Ortho Phosphates **exceeded** levels "Of Concern". Typically, as your Board is well aware, these contaminants come from irrigation and storm water run-off.

During a well-attended, public meeting of the City's Channel Islands Harbor Task Force held on July 11, 2018, Aquatic Eco Technologies and Aquatic Bioassay Consulting stated that in their professional opinion, the unprecedented algal bloom experienced starting in mid-June *was the result of low dissolved oxygen, higher water temperatures, increased nutrients and reduced water circulation.*

Aquatic Eco Technologies and Aquatic Bioassay Consulting compared our situation with the massive Algae Blooms that killed over 175 tons of fish in King Harbor Redondo Beach in 2005 and 2011. **[Attached you will find a PDF of the Power Point Presentation delivered by Aquatic Eco Technologies and Aquatic Bioassay Consulting during that public meeting].**

With respect to the last point, reduced water circulation, as your Board is well aware, the NRG Mandalay Generating Station used cooling pumps that circulated 50 million gallons of seawater per day from the Channel Islands Harbor through the Edison Canal and out to the Pacific Ocean. A 2001 **Water Quality Study Report** by Moffatt and Nicolls Engineering predicted that water quality in the Channel Islands Harbor **would deteriorate** when the NRG pumps were scheduled to be shut down in 2020, in compliance with the Once-Through-Cooling requirements. They estimated the "residence time" would increase from 6 days to 17 days at Seabridge.

NRG's pumps were shut down in March 2018 and given the high pump flow rates and water volumes reported by NRG to the LARWQCB, it is clear to me that the cessation of that pumping has contributed substantially to the degraded water quality in the Channel Islands Harbor waterways.



Further empirical evidence of this rests in the data collected and published by the **Ventura County Resource Management Agency** (VCRMA.org) which routinely conducts weekly tests at 2 locations near the entrance of the Channel Islands Harbor (Hobie Beach and Kiddie Beach) and those areas have **exceeded California State safety standards for 20 days since the NRG pumps have been shut down**. The beaches were posted with signs warning people to avoid body contact due to health concerns.

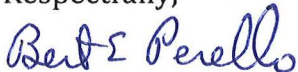
It is my understanding from examining the California Water Boards Website ([www.waterboards.ca.gov/](http://www.waterboards.ca.gov/)) that it is both the State and Regional Water Quality Control Boards mission to "*preserve, enhance, and restore the quality of California's water resources and drinking water for the protection of the environment, public health, and all beneficial uses, and to ensure proper water resource allocation and efficient use, for the benefit of present and future generations.*"

Given the testimony provided to you today, along with the content of the many letters you have received regarding this matter, including mine, the City of Oxnard's and from many Channel Islands Harbor Waterways residents deeply concerned about the public health, safety, quality and enjoyment of harbor waterways, *I strongly believe that your Board's approval of the Tentative Termination of NRG's WDR's that is before you today, **would be contrary to your mission, contrary to sustainable resource best management practices, and contrary to your sustainable stewardship responsibilities for the beneficial use of the State's water resources for the benefit of present and future generations.***

On behalf of the residents of the Channel Islands Harbor Waterways, Councilmatic District 1, and indeed ALL the residents of the City of Oxnard, I respectfully ask the Los Angeles Regional Water Quality Control Board to reconsider this order, and require NRG to research and recommend a solution to re-establish the flow of water through the Edison Canal that will provide circulation that restores the water quality in Channel Islands Harbor to the levels prior to the shutdown.

Thank you for your consideration and your hoped-for positive action to continue to preserve, enhance, and restore the quality of water in the Channel Islands Harbor waterways.

Respectfully,



Bert E. Perello, Member  
Oxnard City Council and  
City of Oxnard Channel Islands Harbor Task Force

pc: Members of the Oxnard City Council  
Members of the Ventura County Board of Supervisors  
Members of the California State Legislative Delegation Representing Ventura County  
Members of the California Federal Delegation Representing Ventura County  
Alex Ngyuen, City Manager, City of Oxnard  
Mike Powers, CEO, County of Ventura  
Mark Sandoval, Director, Ventura County Harbor Department  
Channel Islands Neighborhood Council  
Members, Executive Board, Inter-neighborhood Council Organization



An aerial photograph of Channel Islands Harbor, showing a coastal town with a large marina filled with boats, a sandy beach, and a pier extending into the ocean. The background features rolling hills under a clear sky.

# Channel Islands Harbor

Water Quality Event  
June & July, 2018



# Presented by:

- Dr. David A. Caron
  - Professor of the Department of Biological Sciences, USC (since 1999)
  - Chief Science Officer of Aquatic EcoTechnologies, Inc.
  - Ph.D in Biological Oceanography conferred jointly by the Massachusetts Institute of Technology and the Woods Hole Oceanographic Institution
  - 250 scientific articles and book chapters on the ecology of microbes in marine and freshwater systems



- Mr. Scott C. Johnson
  - Senior Scientist/Laboratory Director, Aquatic Bioassay & Consulting Laboratories, Inc.
  - M.S. in Marine Biology  
California State University Long Beach



# Tonight's Presentation

- The Problem?
- The Response
- The Data
- Potential Causes of Water Quality Issue
- What's next?





# The Problem

- “Dark murky water” reported in Channel Islands Harbor by the public beginning in early June
- Present throughout back basins, especially at Seabridge and Mandalay
- Strong odor accompanied murky water



# The Response

- City collects water quality samples for:
  - Dissolved oxygen; pH; temperature; salinity – beginning mid-June
  - Nutrients
  - Bacteria
  - City hires marine biology team – July 5<sup>th</sup>







Oxnard Shores

Via Marina

Channel Islands



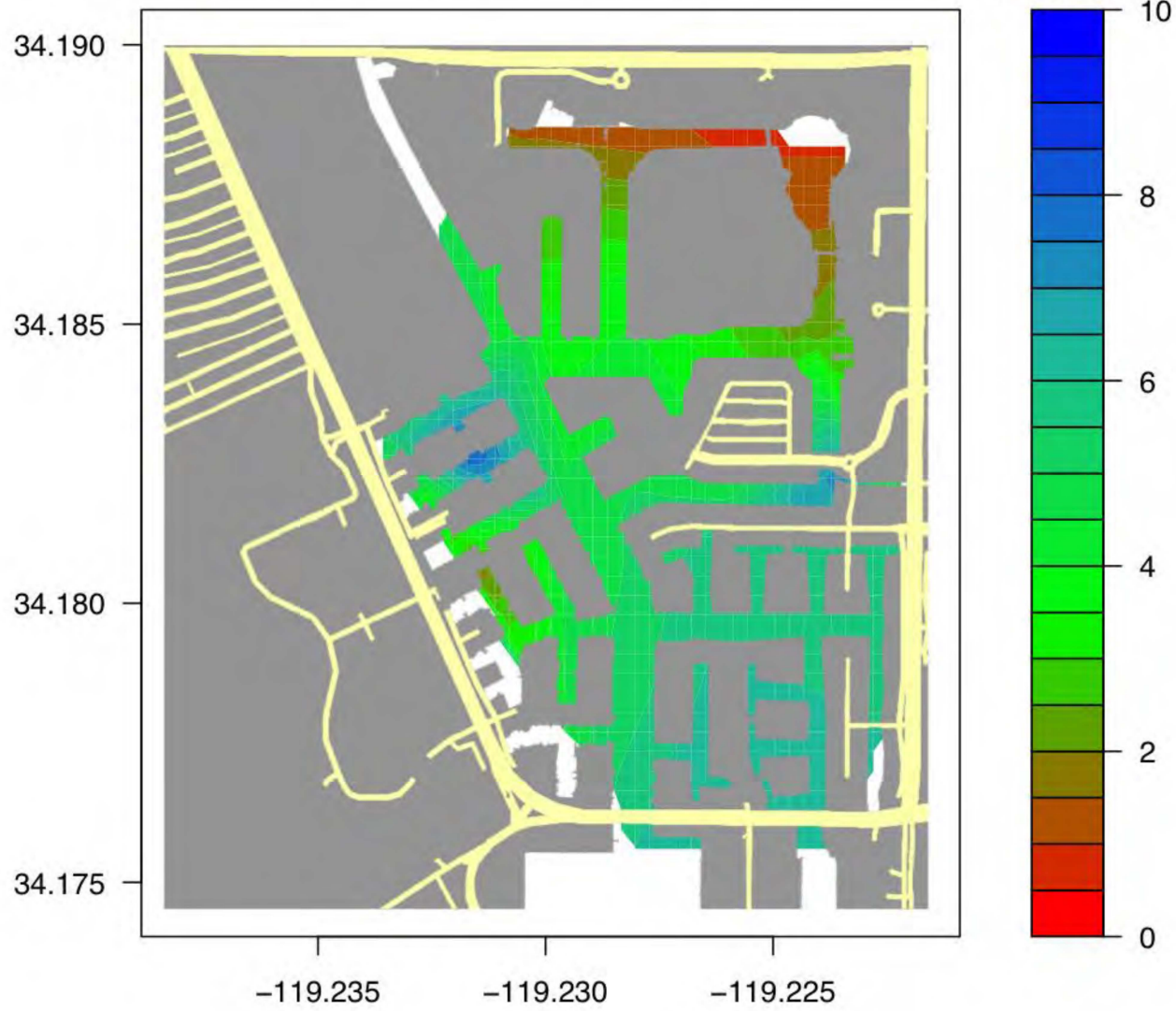
# The Response

- Aquatic Bioassay & Aquatic EcoTechnologies collect samples at 11 locations for:
  - Water quality profiles: DO, pH, temp, chl a, salinity, transmissance
  - Phytoplankton & chl a
  - Nutrients: ammonia, nitrate, orthophosphate

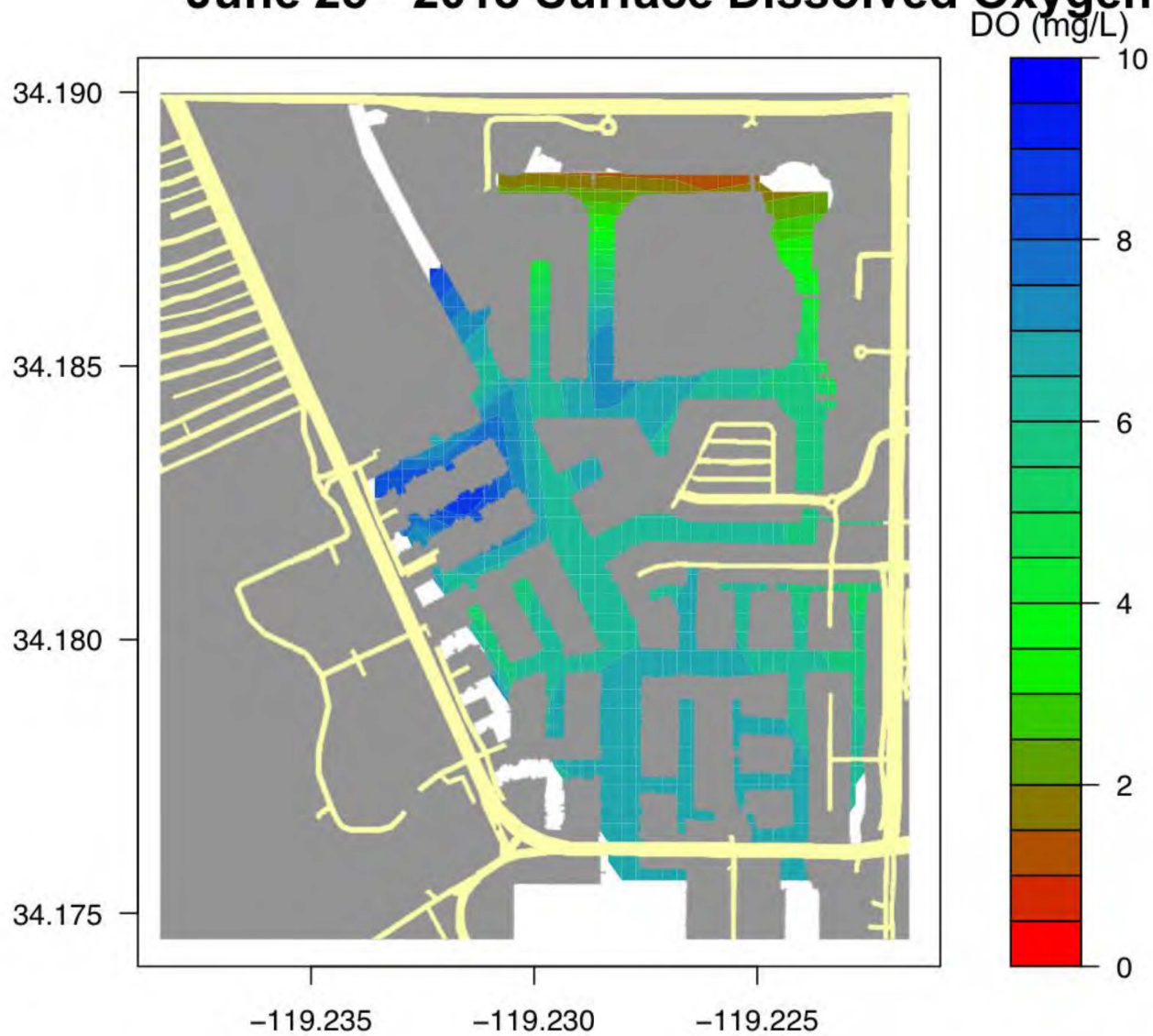




# June 23<sup>rd</sup> 2018 Surface Dissolved Oxygen

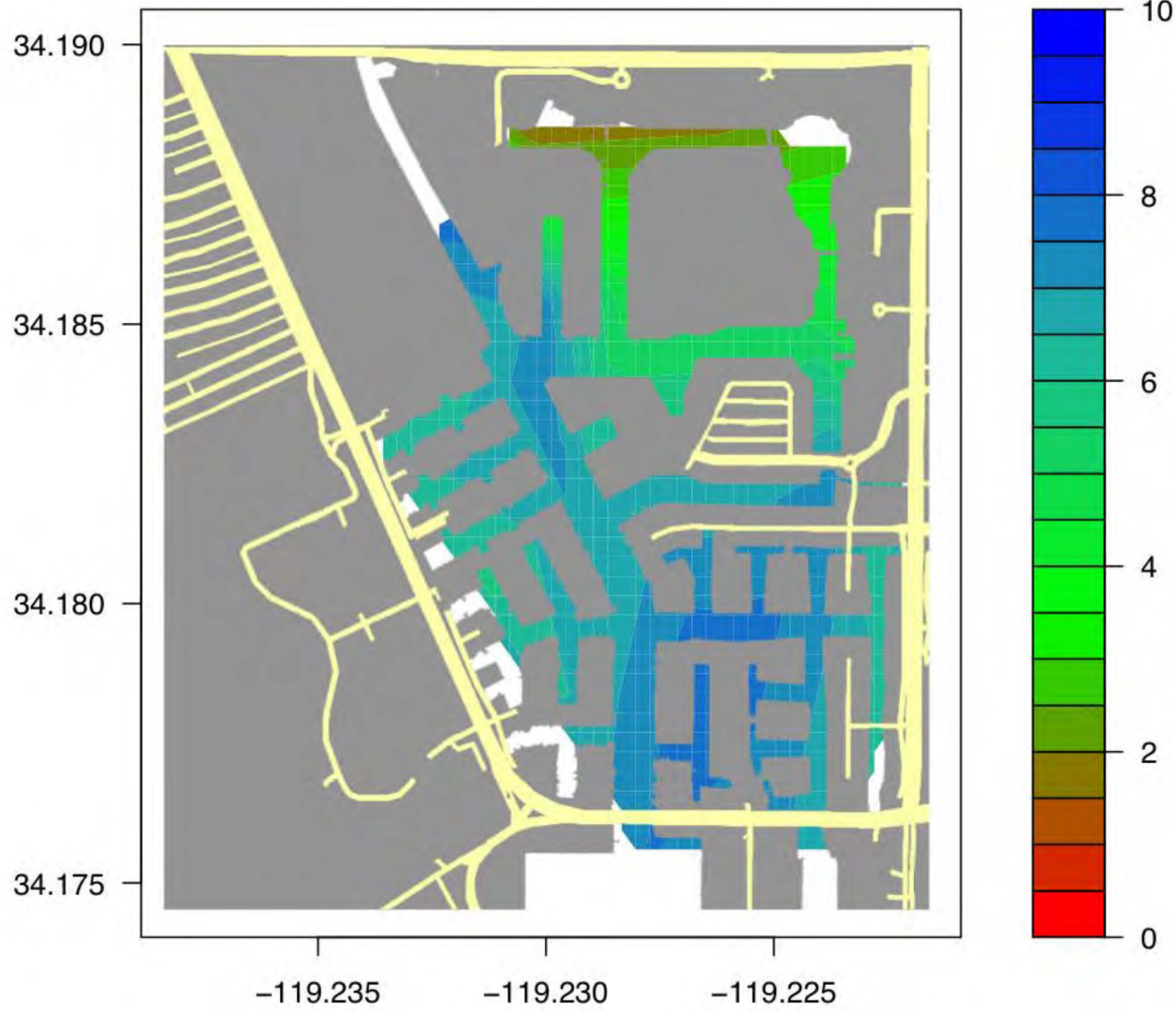


# June 25<sup>th</sup> 2018 Surface Dissolved Oxygen

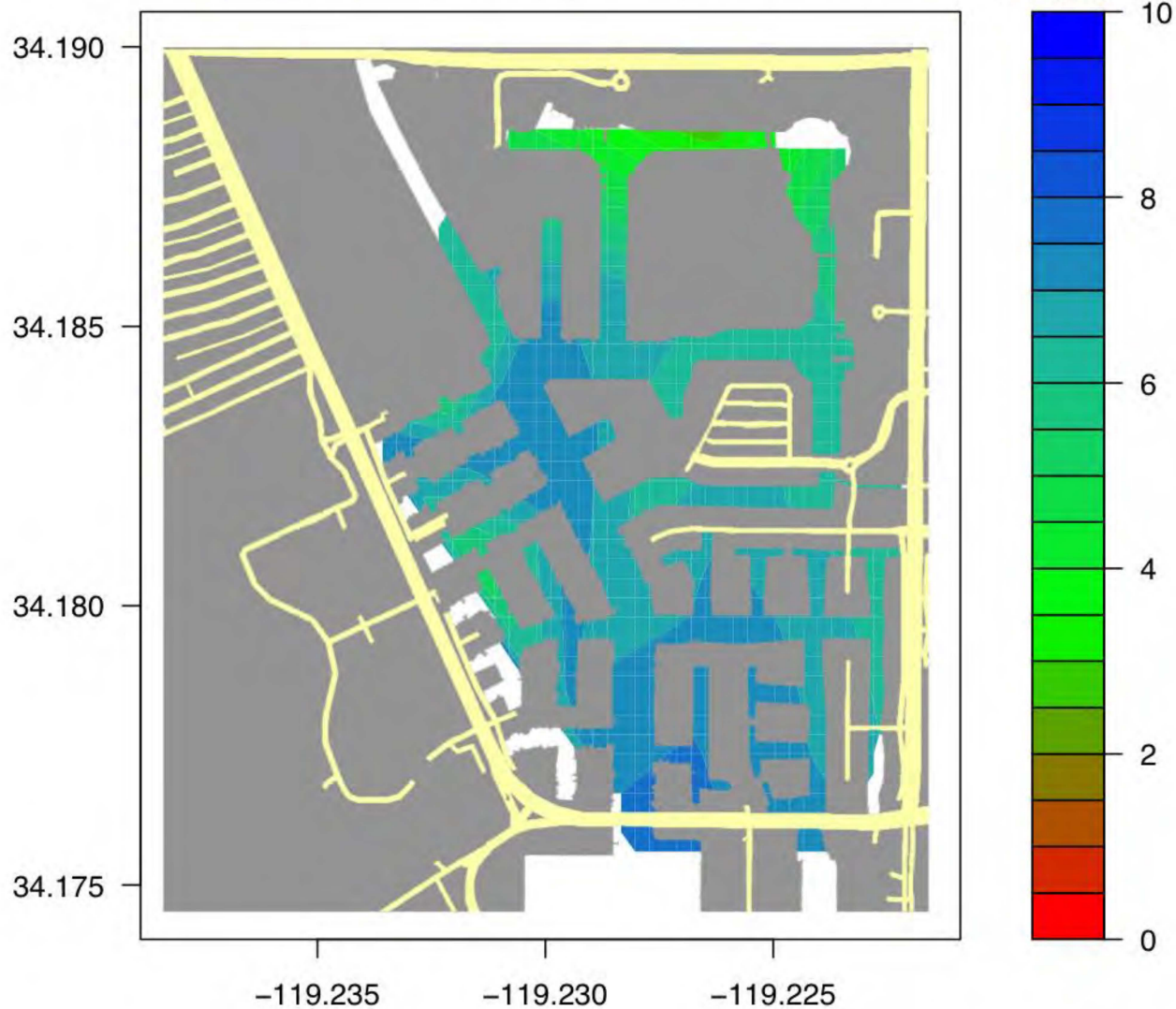




# June 27<sup>th</sup> 2018 Bottom Dissolved Oxygen

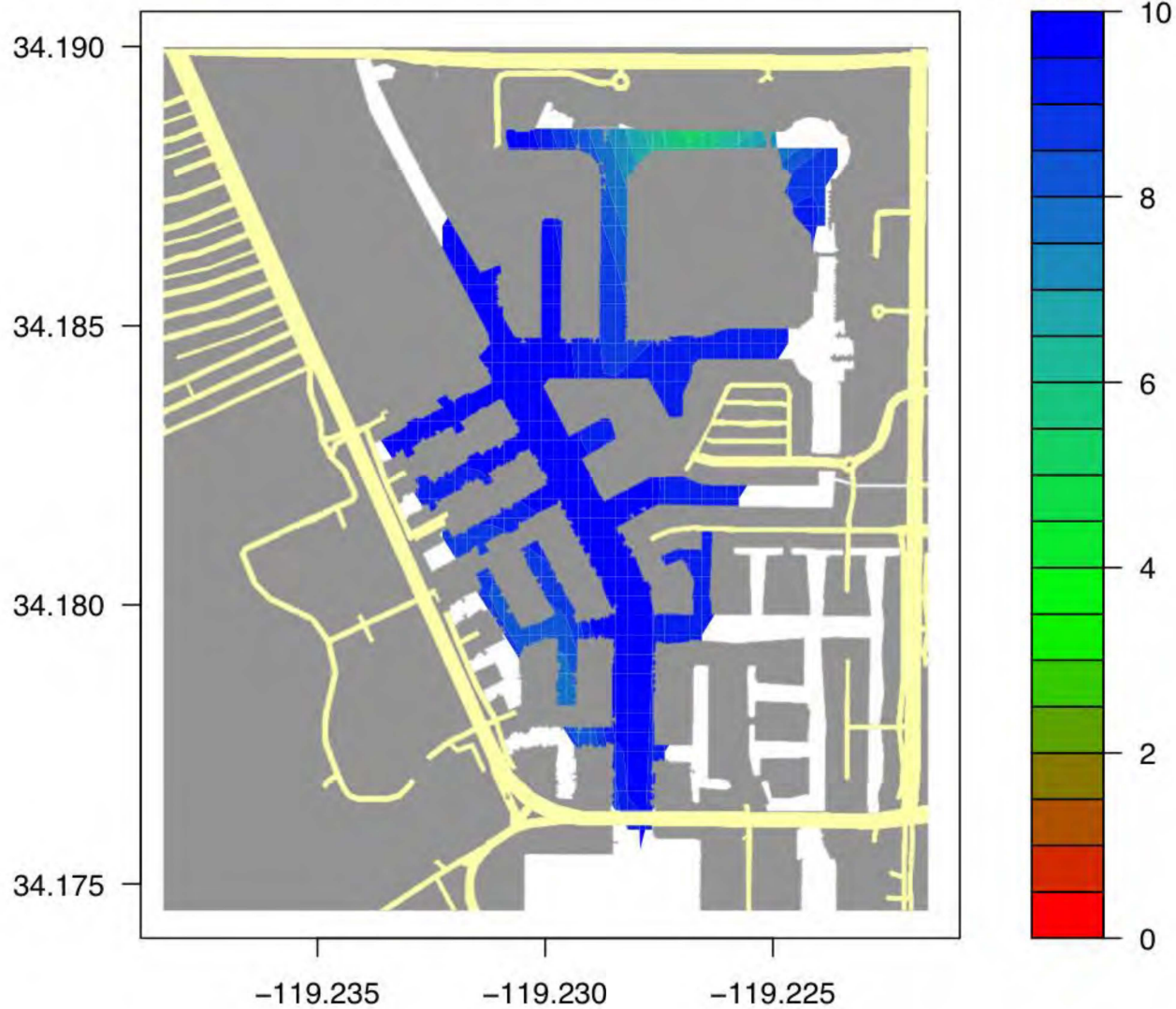


# June 29<sup>th</sup> 2018 Bottom Dissolved Oxygen





# July 5<sup>th</sup> 2018 Bottom Dissolved Oxygen



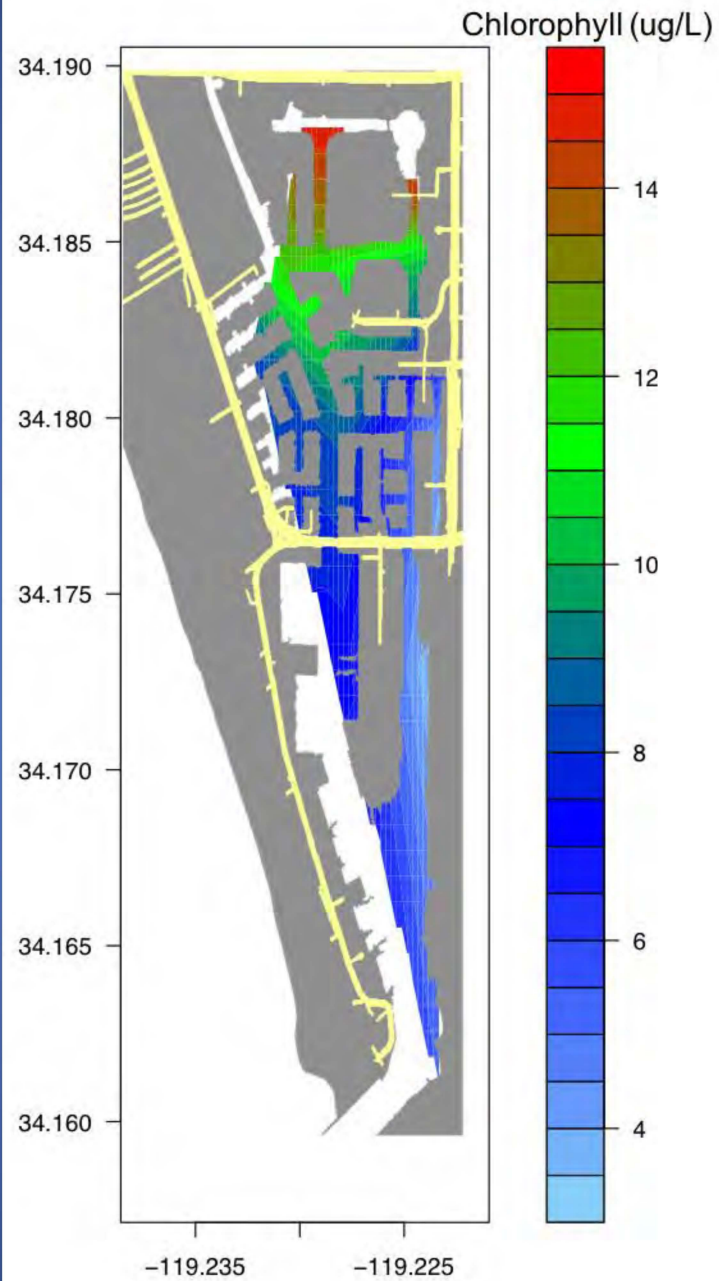
# The Data

Bacteria: June 18th, 21st and 28th, 2018			Stations	REC1 Standard
	Method	MDL	Range (n = 16)	
Total Coliform	SM 9223 COLert	10 MPN/100 mL	<100 - 272	10,000
Fecal Coliform	SM 9223 COLert	10 MPN/100 mL	<10 - 63	400
Enterococcus	Enterolert	10 MPN/100 mL	<10 - 10	104



# The Data

Nutrients: June 19th, 21st and 22nd 2018			Stations	Range	
			Range (n = 15)	Background	Of Concern
Nitrate	EPA 300.0	0.02 - 161.29 uM	ND	<1	>5
Nitrite	EPA 300.1	0.58 - 145 uM	ND - 1.7		
Total nitrogen (TKN)	EPA 351.2	3.57 uM	17.14 - 69.29	<10	>10 - 20
Ortho Phosphate	EPA 365.1	0.002 uM	0.16 - 1.05	<0.1	>1





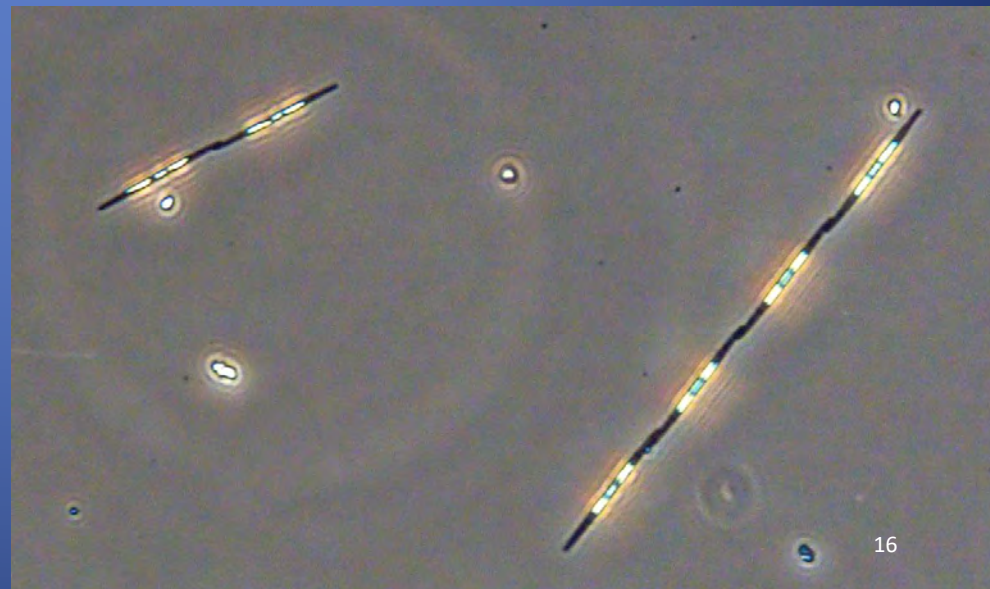
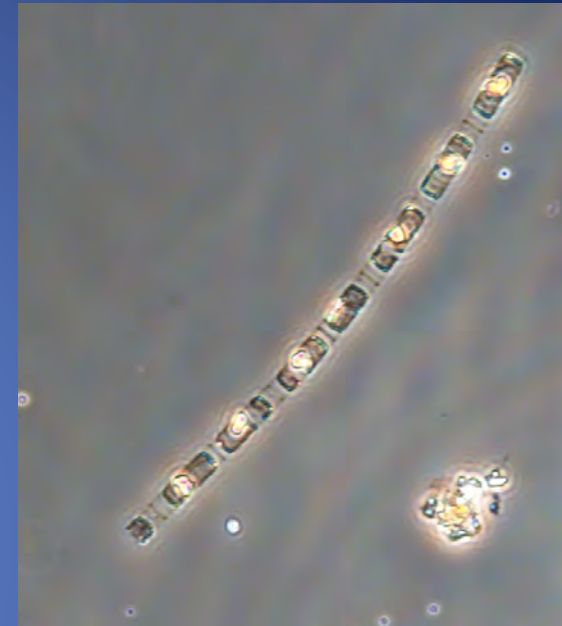
# Phytoplankton composition (July 6, 2018)

## Diatom genera:

Pseudo-nitzschia\*\*\*  
Skeletonema  
Leptocylindrus  
Chaetoceros  
Nitzschia

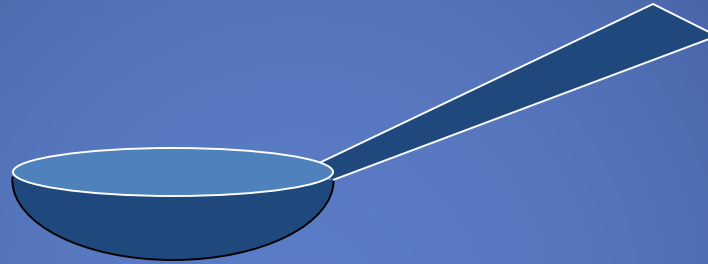
## Other taxonomic groups:

Euglenoids\*\*\*  
Ciliated protozoa  
Prorocentrum  
Misc. small algae



# Potential Causes of Water Quality Issue

What's in a teaspoon of seawater?



1 tsp of seawater  $\approx$  5 milliliters

$\approx$  100,000,000 viruses

$\approx$  10,000,000 bacteria

$\approx$  5,000 microalgae

$\approx$  3,000 protozoa



most are harmless, even beneficial...  
...a few are not.



# SoCal 'Local' Harmful Algal Blooms

(from bad-to-worst)

Fairly innocuous 'red tides'

*Mostly color, but lots of biomass*

Noxious 'foams' and 'scums'

*Food web disruption*

Toxic truly species

*Paralytic, amnesic, diarrhetic shellfish poisoning*

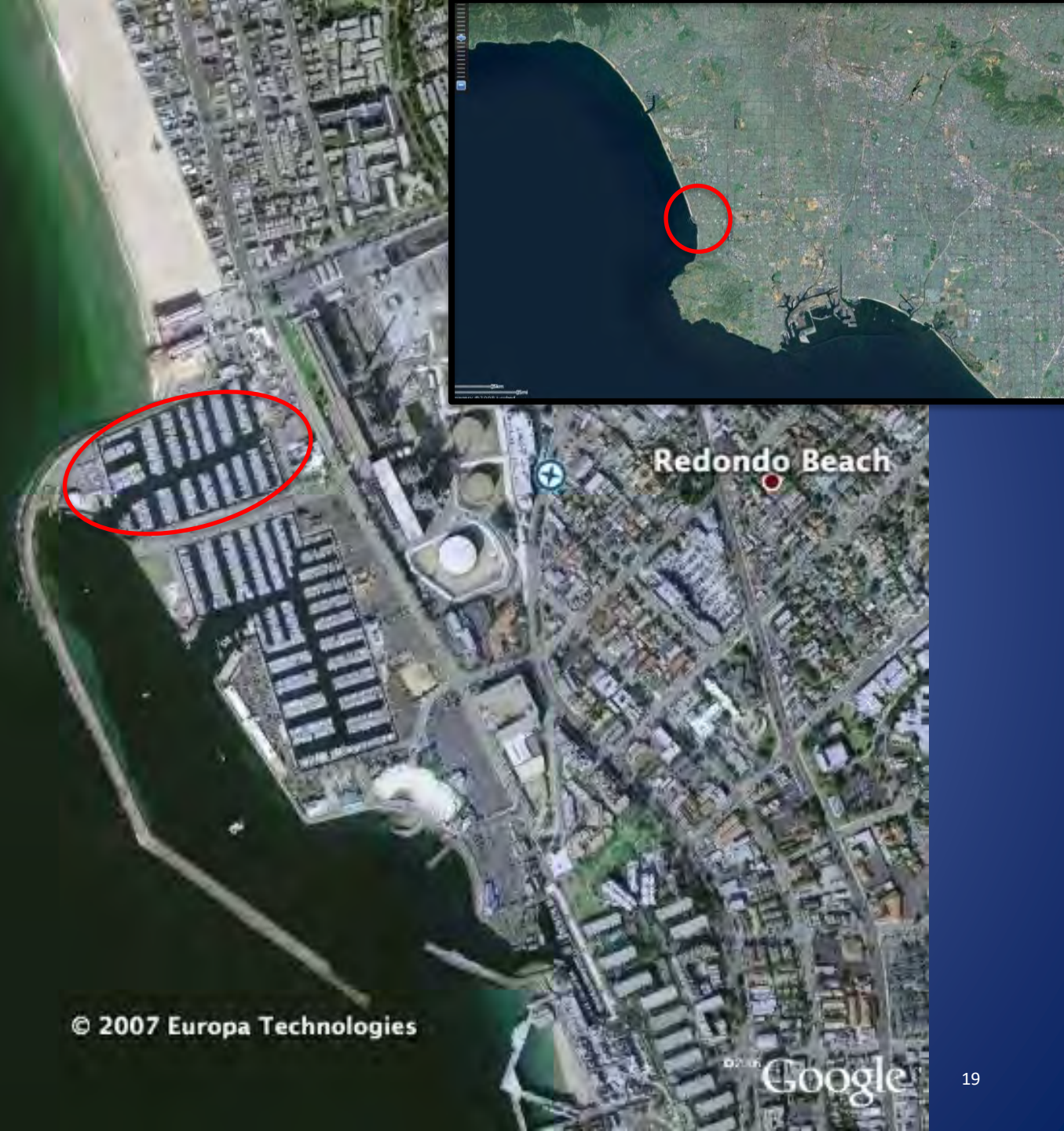
Newly introduced or newly recognized species:

*Fish-killing taxa*

King Harbor  
City of Redondo Beach  
Fish Kill in 2005

Coincided with a  
massive algal bloom

March 8, 2011



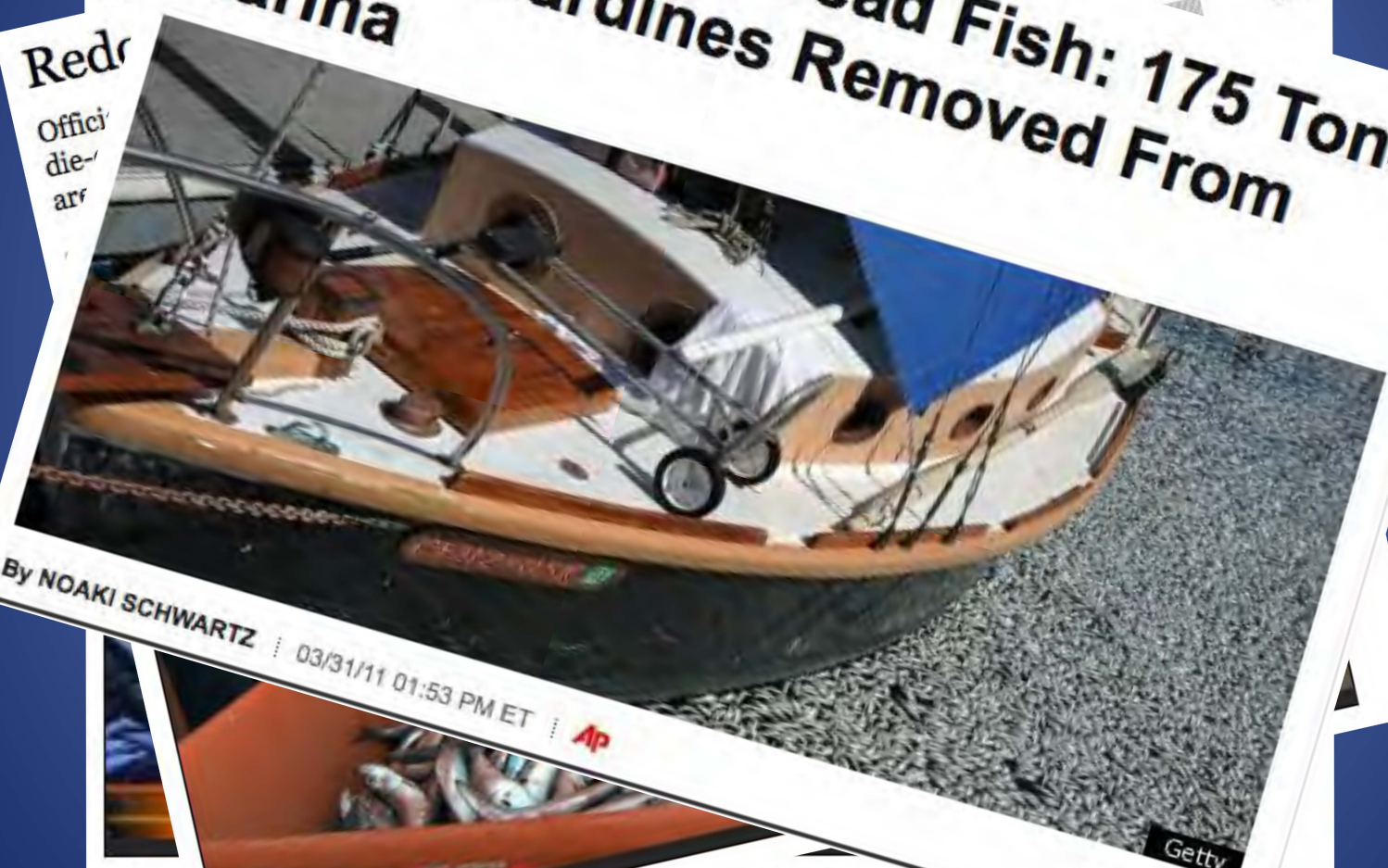


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the  
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# Redondo Beach Dead Fish: 175 Tons Of Dead Sardines Removed From Marina

dead fish  
& dead sardines  
Harbor after the fish  
30 tons or more  
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Redr  
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die-  
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By NOAKI SCHWARTZ : 03/31/11 01:53 PM ET : **Ap**

Getty



KTLA

Redondo Beach - Lynette Romero



March 8, 2011

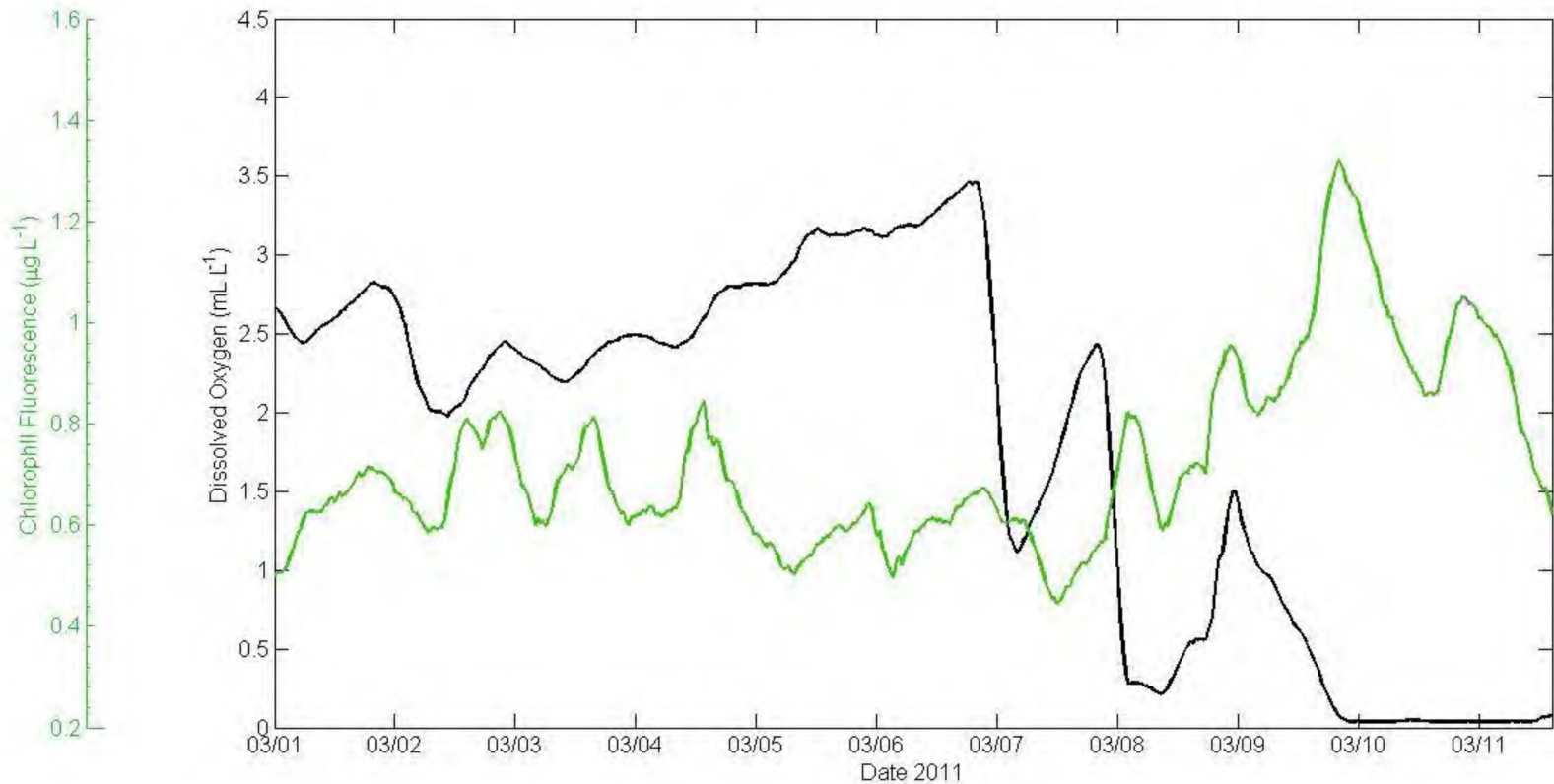






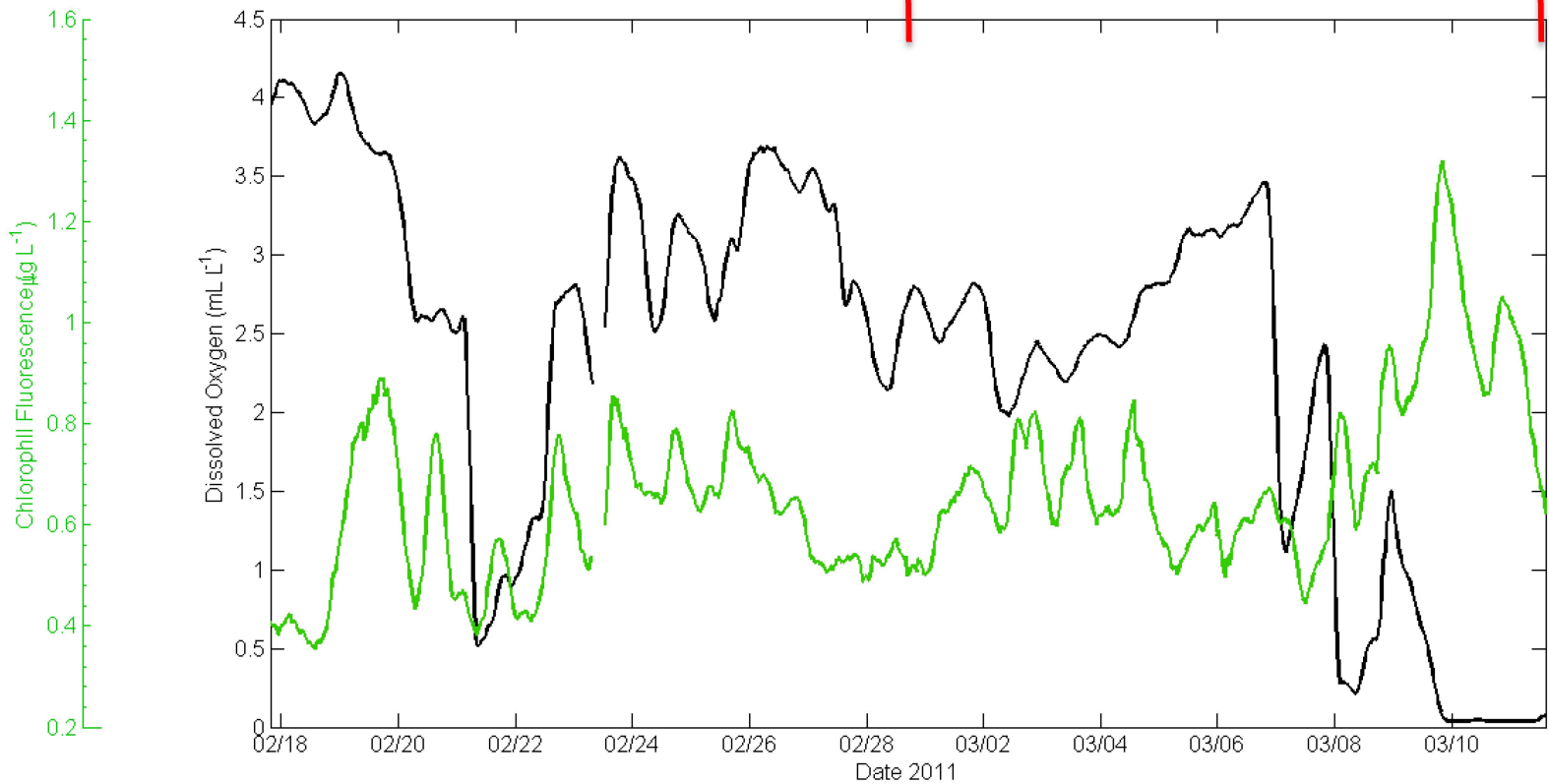


# Temporal changes in Chlorophyll fluorescence (algal biomass) and dissolved oxygen



# Temporal changes in Chlorophyll fluorescence (algal biomass) and dissolved oxygen

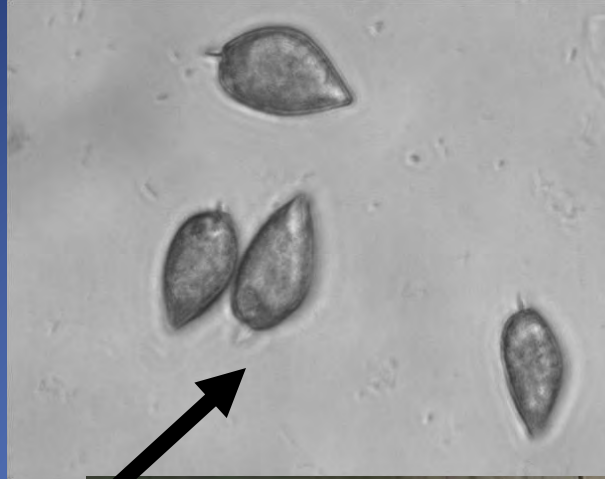
Time frame of previous slide





*Prorocentrum micans*  
King Harbor,  
Redondo Beach  
(May 2006)

(unknown if a toxin was  
produced during this  
bloom)





Pescadero

# Huge Die-off of Anchovy Brings Unique Aroma to Santa Cruz Harbor

CALIFORNIA DIVER — AUGUST 1, 2014



Facebook



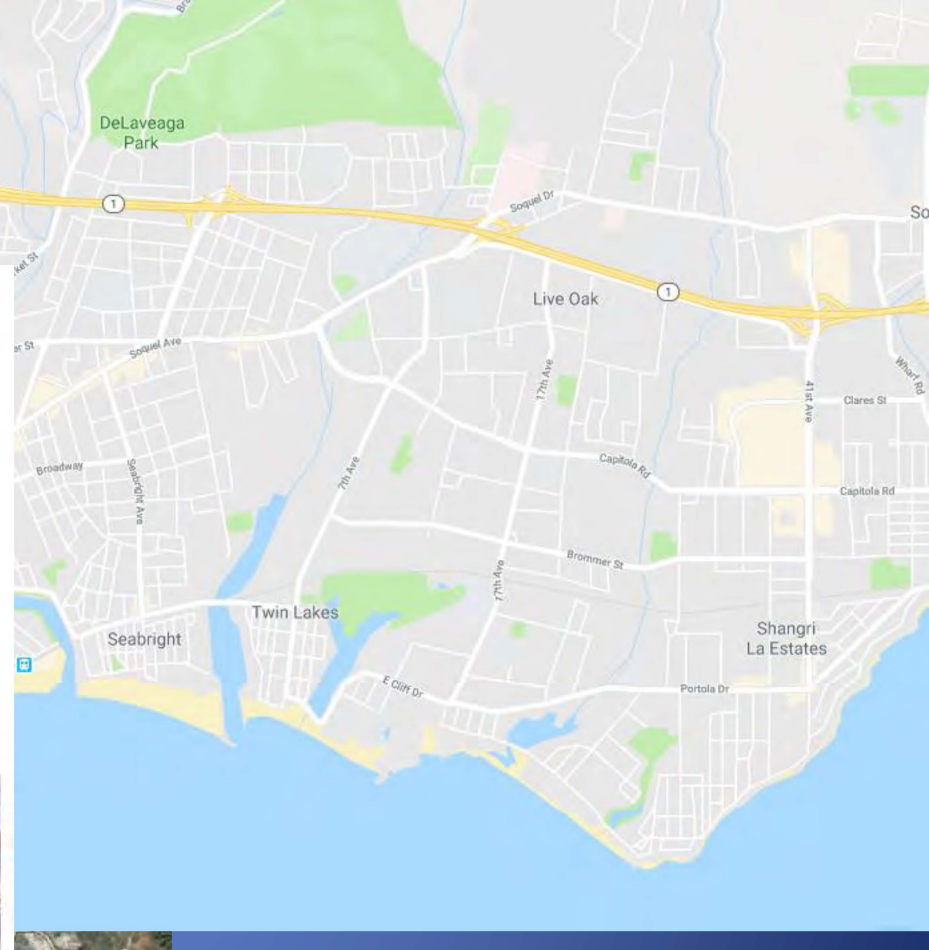
Twitter



LinkedIn



Mail



News

## Fish meet grisly end at Santa Cruz harbor



By **MERCURY NEWS** | themerc@bayareanewsgroup.com |  
August 1, 2014 at 2:09 am

# Next Steps

- Finalize analysis of data collected on July 6<sup>th</sup>
- Reduce frequency of City WQ sampling to 2x's per week
- Two sampling events remaining on contract:
  - Await potential next event to sample at peak of bloom
- Install aerators in back basins
- Establish a Monitoring & Action Plan
  - Install remote sensor(s) to continuously monitor dissolved oxygen, pH and chlorophyll
  - Prepare action plan to mitigate water quality problems

