

# Water Quality Monitoring & Impairments in the Ventura River Watershed



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# Overview

- Water quality monitoring programs
- History of impairments in watershed
- Current impairments in draft regulation for Algae, Eutrophic Conditions and Nutrients Total Maximum Daily Loads (TMDL)
  - Receiving water monitoring requirements
- Current dissolved oxygen (DO) and nitrogen monitoring

# Types of Water in Watershed

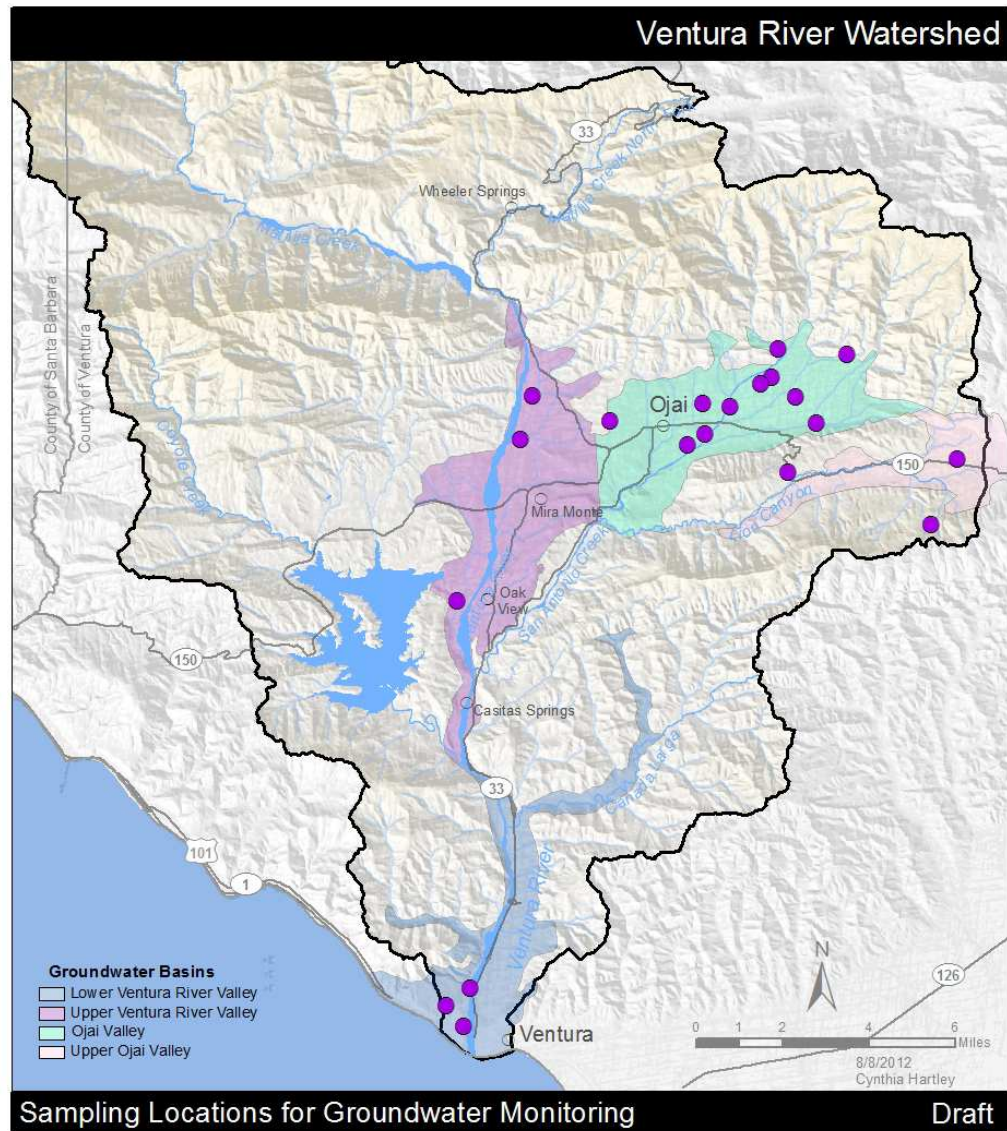
- Groundwater
- Surface water – lake, reservoir, creeks, river and groundwater under direct influence of surface water (GUDISW)
- Estuary
- Ocean

*This presentation will focus only on non-drinking water.*

# Groundwater Quality Monitoring

- 20 groundwater wells sampled annually by Ventura County Watershed Protection District (VCWPD)
  - 1: Upper Ojai Valley Basin
  - 11: Ojai Valley Basin
  - 3: Upper Ventura River Valley Subbasin
  - 3: Lower Ventura River Valley Subbasin
  - 2: Other
- Monitored for *in situ* parameters, anions, cations, nutrients (N and P), conventionals and metals
- Also 10 groundwater wells in Ojai Valley Basin sampled by Ojai Basin Groundwater Management Agency (OBGMA)

Source: VCWPD Monitoring Program and OBGMA 2010 Annual Report



## Monitoring Program

- Ventura County Watershed Protection District

Source data:  
Sampling locations: Ventura County Watershed Protection District  
Groundwater basins: Regional Water Quality Control Board-Los Angeles



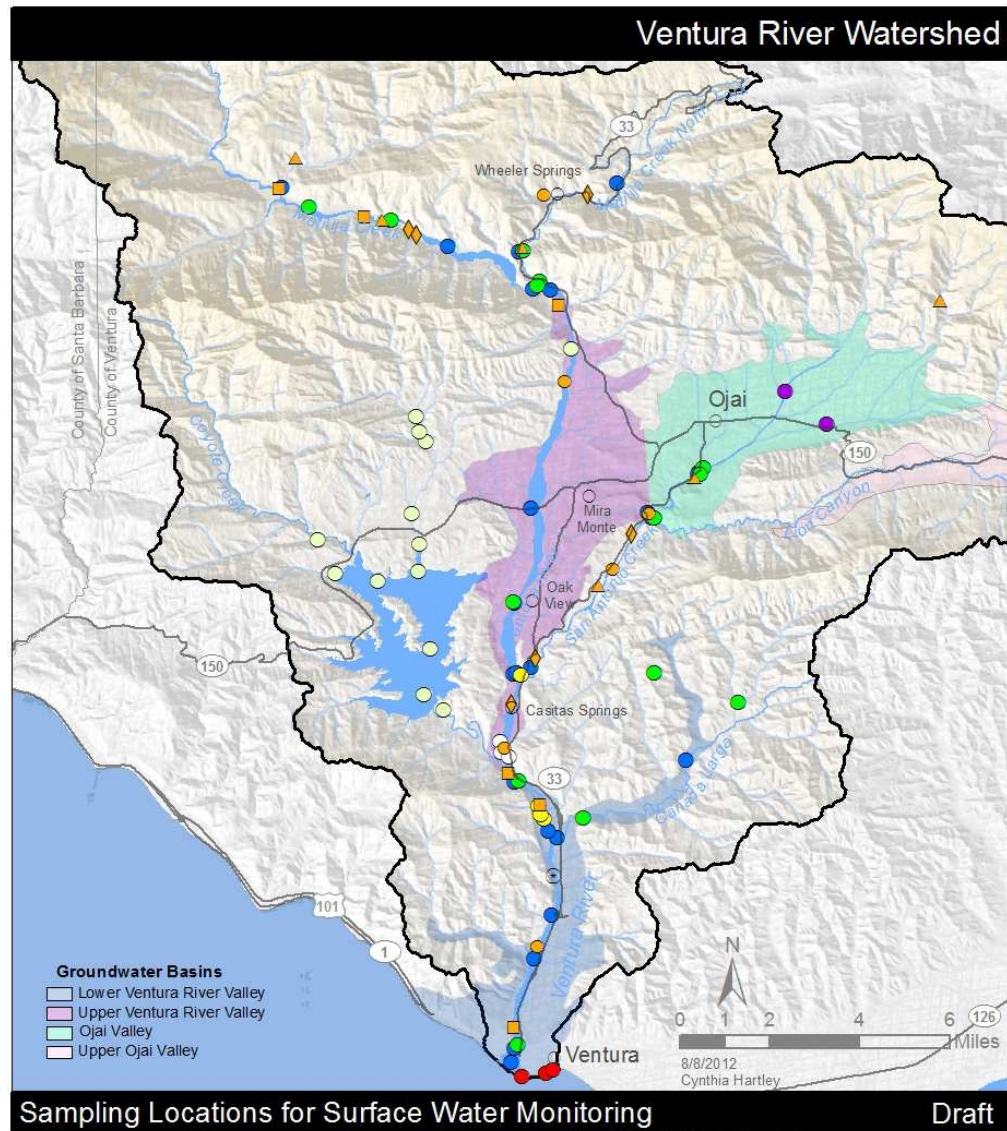
# Surface Water Quality Monitoring

Monitoring Program	Current Sites	Type of Water	Minimum Frequency	Type of Monitoring*
Casitas Municipal Water District	13	Surface water	Monthly	All except bioassessment
City of Ventura	8	Surface water and GWUDISW	Monthly	All except bioassessment
Ojai Valley Sanitary District	5	Surface water	Weekly - monthly	All
Santa Barbara Channelkeeper – Ventura Stream Team	14	Surface water	Monthly	<i>In situ</i> , nutrients, bacteria
Ventura County Agricultural Irrigated Lands Group (VCAILG)	2	Surface water	Quarterly	All except bacteria and radiological
Ventura County Environmental Health Division	3	Ocean water	Weekly	Bacteria
Ventura County Stormwater Monitoring Coalition (SMC Bioassessment)	7	Surface water	Annually	All except bacteria and radiological
Ventura Countywide Stormwater Quality Management Program (VCSQMP)	3	Surface water	Quarterly	All except radiological

\*All = *in situ* parameters, anions, cations, nutrients, metals, organics, bacteria, bioassessment and radiological parameters.

Source: Monitoring Programs





## Monitoring Programs

- City of Ventura
- Ventura County Agricultural Irrigated Lands Group
- Ventura County Environmental Health Department
- Ojai Valley Sanitary District
- Ventura Stream Team
- Ventura Countywide Stormwater Quality Management Program – past and current

## VCWPD for Stormwater Monitoring Coalition

- 2009
- 2010
- 2011
- 2012
- Trend Site
- Casitas Municipal Water District

Source data obtained from each monitoring program  
Groundwater basins: Regional Water Quality Control Board-Los Angeles



# Impairment History

- Clean Water Act Section 303(d) List

[http://www.swrcb.ca.gov/rwqcb5/water\\_issues/tmdl/impaired\\_waters\\_list/2008\\_2010\\_usepa\\_303dlist/20082010\\_usepa\\_aprvd\\_303dlist.pdf](http://www.swrcb.ca.gov/rwqcb5/water_issues/tmdl/impaired_waters_list/2008_2010_usepa_303dlist/20082010_usepa_aprvd_303dlist.pdf)

- LA Consent Decree

<http://www.epa.gov/region9/water/tmdl/la-lakes/LaConsentDecreeTMDLsRevSched2.pdf>

- Draft TMDL of 7/20/12

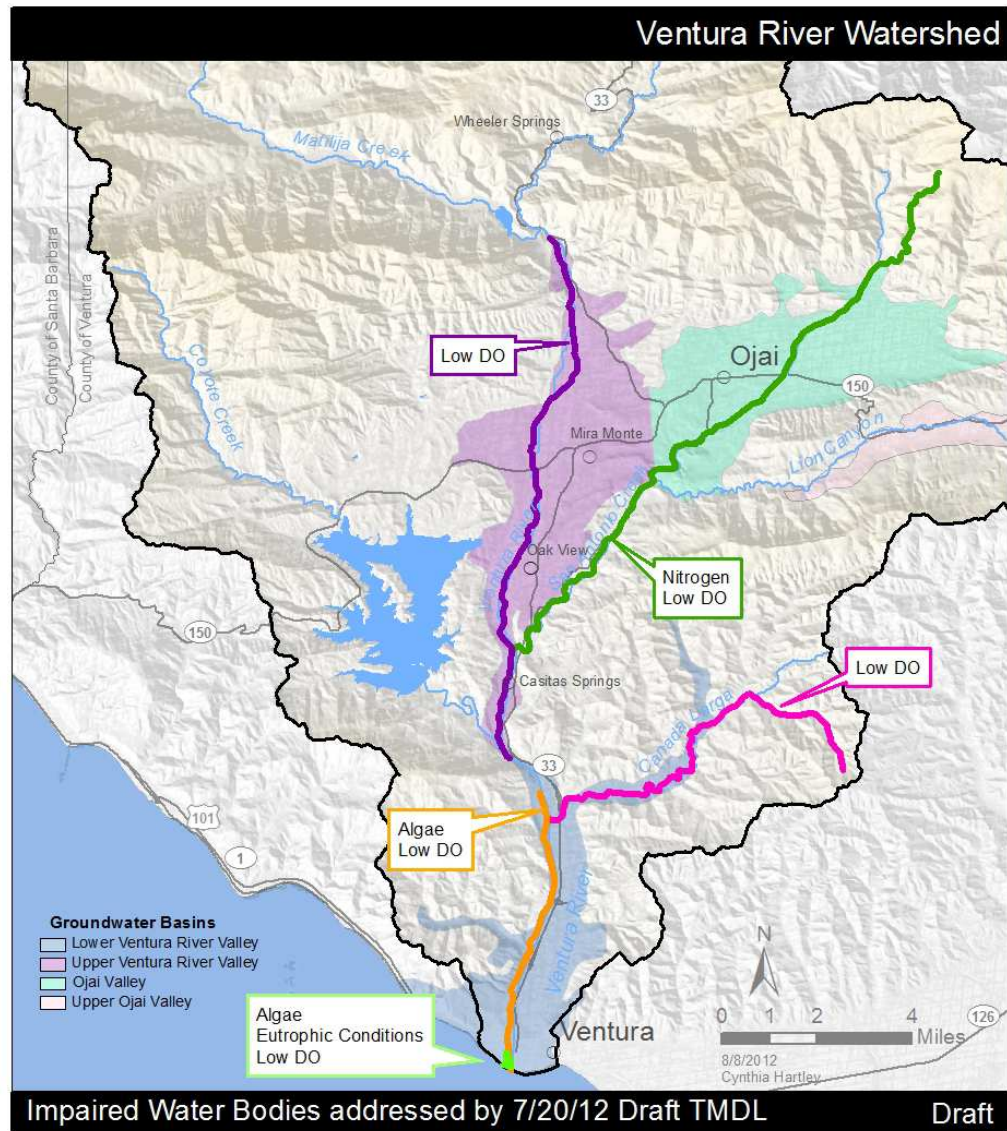
[http://www.waterboards.ca.gov/losangeles/board\\_decisions/basin\\_plan\\_amendments/technical\\_documents/bpa\\_73\\_New\\_td.shtml](http://www.waterboards.ca.gov/losangeles/board_decisions/basin_plan_amendments/technical_documents/bpa_73_New_td.shtml)



# Impairments and Expected TMDL Adoption Dates

Impairment	Waterbody	Actual/ Expected TMDL Date*	1999 Consent Decree Deadline	7/20/12 Draft TMDL Deadline
Trash	Ventura River (VR) Estuary	2/27/08		
Pumping/water diversion	VR Reaches 3 and 4	2019	3/24/13	
Algae	VR Estuary and Reaches 1 and 2	2019	3/24/13	3/24/13
Eutrophic conditions	VR Estuary	2019		
Low dissolved oxygen (DO)	Canada Larga	2019		3/24/13
	VR Estuary and Reaches 1, 2 and 4	NA		3/24/13
	San Antonio Creek	NA		3/24/13
Nitrogen	San Antonio Creek	2019		3/24/13
Fish barriers/passage	Matilija Reservoir, Matilija Creek	2019		
Coliform (fecal/total)	Canada Larga, VR Estuary	2019		
Bacteria	San Antonio Creek, VR Reach 3	2021		
Mercury	Casitas Lake	2021		
Total dissolved solids	San Antonio Creek, Canada Larga	2023		

\* From 2008-2010 CWA Section 303(d) List



- Cañada Larga
- San Antonio Creek
- Ventura River Estuary
- Ventura River Reach 1, 2
- Ventura River Reach 4

Source data  
Regional Water Quality Control Board-Los Angeles  
Groundwater basins: Regional Water Quality Control Board-Los Angeles



# Numeric Targets for Receiving Water Monitoring

Parameter*	Target	Waterbody	Minimum Frequency
Total algal biomass	150 mg/m <sup>2</sup> chlorophyll <i>a</i>	Ventura River (VR) and tributaries	2x per growing season (5/1 – 9/30)
Macroalgal cover (attached and unattached)	≤ 30% (seasonal avg.)	VR and tributaries	Monthly
Phytoplankton biomass	20 ug/L chlorophyll <i>a</i>	Estuary	2x per growing season (5/1 – 9/30)
Macroalgal cover	≤ 15% (seasonal avg.)	Estuary	Monthly
Dissolved oxygen (DO)	≥ 7 mg/L daily minimum	VR, estuary and tributaries	Monthly & 2x pre-dawn DO in growing season
pH	6.5 - 8.5 (instantaneous)	VR, estuary and tributaries	Monthly

\* Additional in-stream parameters to be specified in monitoring plan(s) for receiving water: nutrients (total and dissolved nitrogen and phosphorus) and other water parameters (temperature, conductivity, flow).

Source: Chapter 3 of the Basin Plan and Draft TMDL of 7/20/12

# Current DO and Nitrogen Monitoring

Monitoring Program	No. of Sites	Frequency	# DO Samples/ year	# Nitrogen Samples/ Year	Types of Nitrogen
Casitas Municipal Water District	13	Monthly	60	60+	Nitrate, Nitrite, Organic and Total Nitrogen
Channelkeeper	14	Monthly	168	168	Nitrate and Total Nitrogen
City of Ventura	7	Monthly	NA	84	Nitrate and Nitrite
Ojai Valley Sanitary District	5	Weekly-Quarterly	140	26	Ammonia, Nitrate, Nitrate, Organic and Total Nitrogen
VCAILG	2	Quarterly	8	8	Ammonia and Nitrate
VCWPD-SMC Bioassessment	7	Annually	7	7	Ammonia, Nitrate + Nitrate, Organic and Total Nitrogen
VCSQMP	3	Quarterly	12	12	Ammonia, Nitrate + Nitrate, Organic and Total Nitrogen

Source: Monitoring Programs

# **For comments or concerns on TMDL**

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