

Water Quality Monitoring and Impairments in the Ventura River Watershed



Ventura River Watershed Council Meeting
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Overview

- Water quality monitoring programs
- History of impairments
- Current impairments in draft regulation for Nutrient, Eutrophic and Algae Total Maximum Daily Load (TMDL)
 - Receiving water monitoring requirements

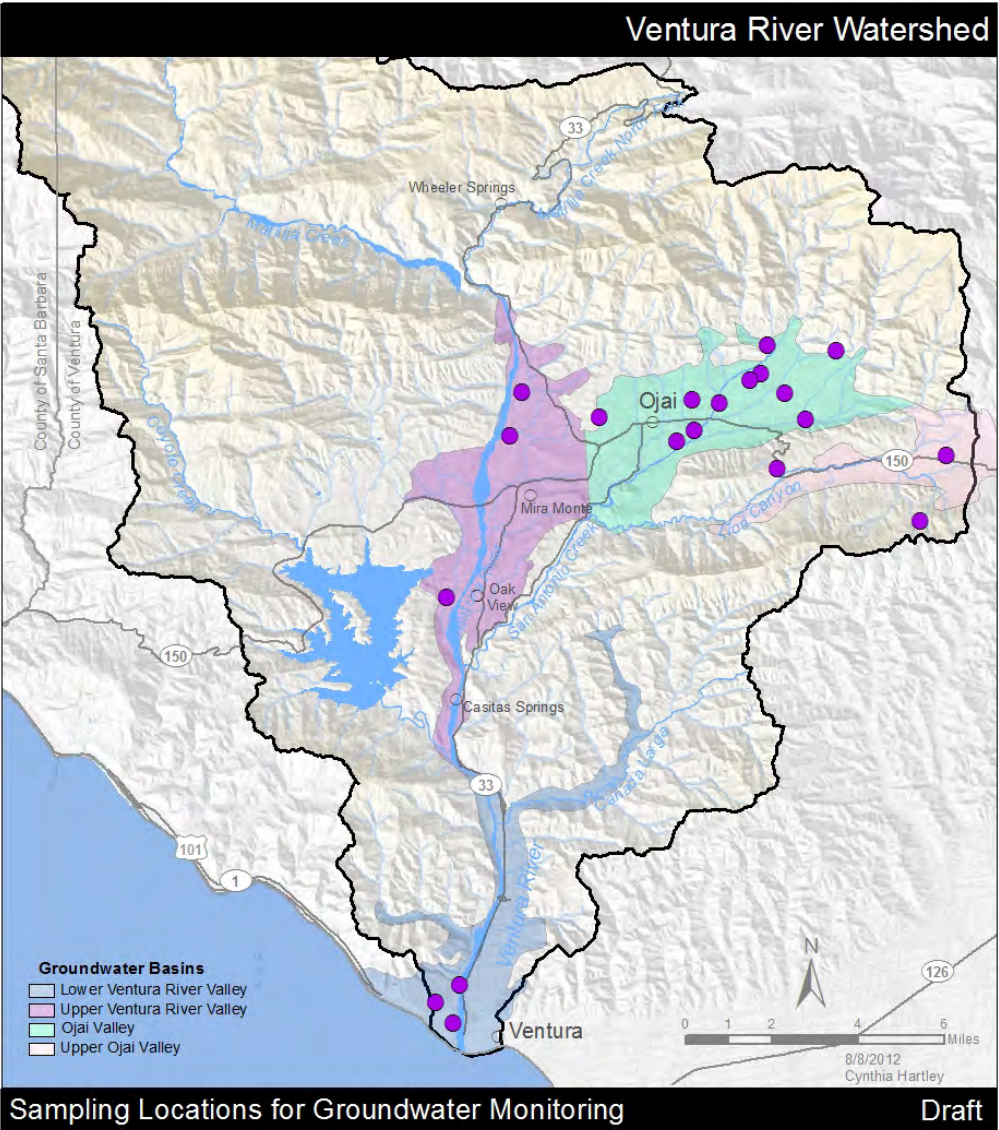
Types of Water in Watershed

- 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



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

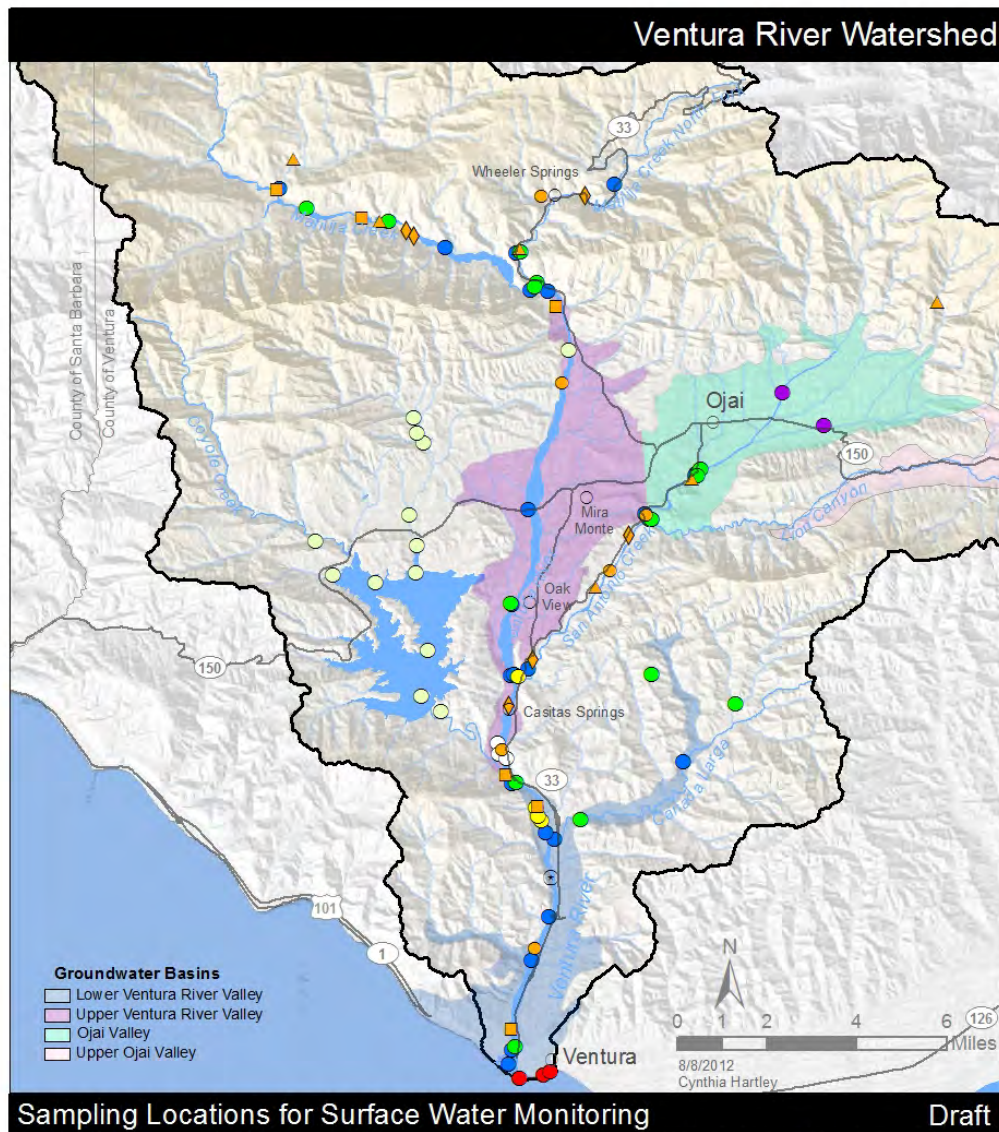


Surface Water Quality Monitoring

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

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



Impairment History

- Clean Water Act 303(d) List

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 Algae TMDL of 7/20/12

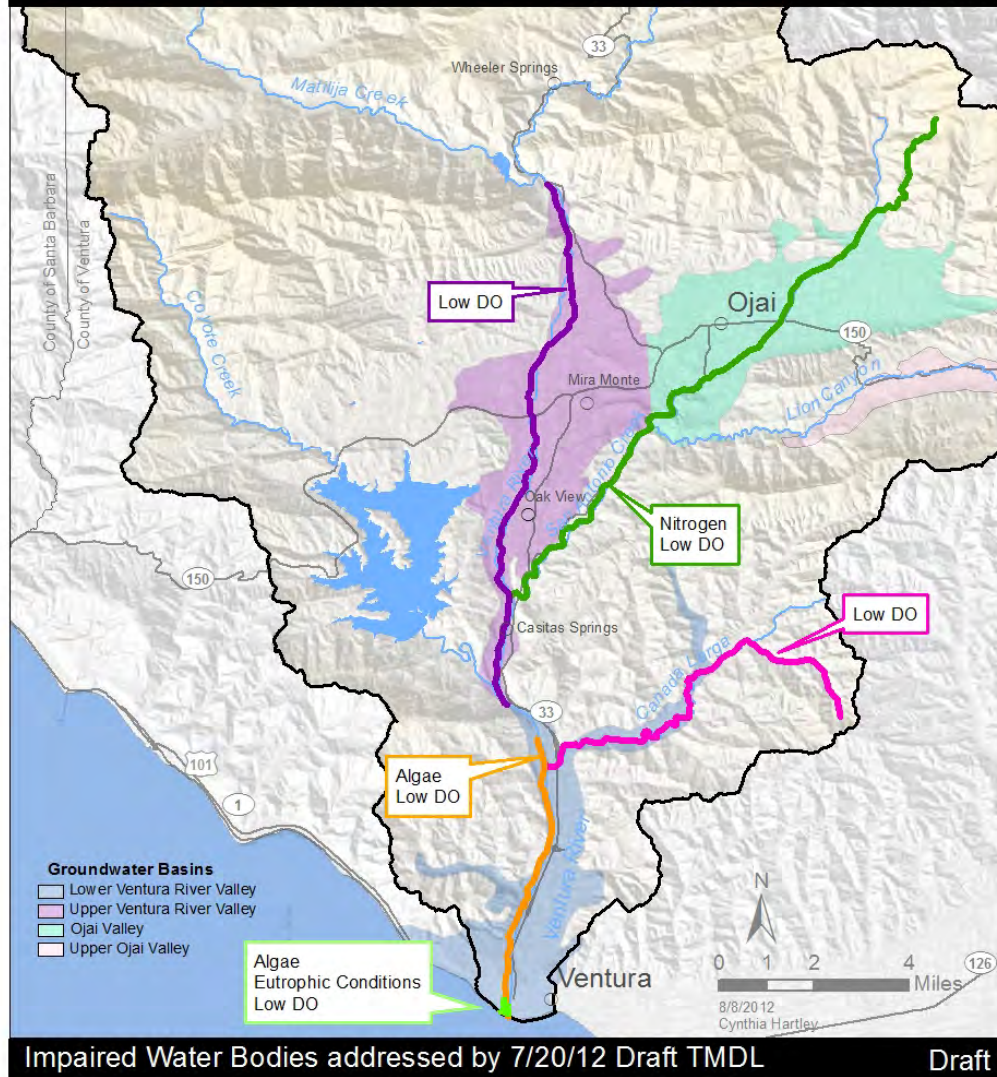
http://www.waterboards.ca.gov/losangeles/board_decisions/basin_plan_amendments/technical_documents/bpa_73_New_td.shtml

Impairments and Expected TMDL Adoption Date

Impairment	Waterbody	Expected TMDL Date*	Consent Decree Deadline	Algae 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

Ventura River Watershed



- 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



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Numeric Targets for Receiving Water Monitoring

Parameter*	Target	Waterbody	Frequency
Total algal biomass	150 mg/m ² chlorophyll <i>a</i>	VR and tributaries	2x per growing season (May - Sept.)
Algal percent cover	≤ 30% (seasonal avg.)	VR and tributaries	Monthly
Phytoplankton biomass	20 ug/L chlorophyll <i>a</i>	Estuary	2x per growing season (May - Sept.)
Macroalgal cover	≤ 15% (seasonal avg.)	Estuary	Monthly
Dissolved oxygen (DO)	≥ 7 mg/L daily minimum	All	Monthly
pH	6.5 - 8.5 (instantaneous)	All	Monthly

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

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
City of Ventura	7	Monthly	84	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	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

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