Water Quality Report Card	
Regional Water Board:	**San Francisco Bay, Region 2**
Beneficial Uses Affected:	REC-1, REC-2
Implemented Through:	NPDES Permits, CAF WDR, Grazing WDR, Sanitary Sewer Overflow, Stormwater Phase II Permit, OWTS
Effective Date:	December 7, 2007
Attainment Date:	N/A

Pathogens in the Sonoma Creek Watershed		
STATUS	☐ Conditions Improving ☑ **Data Inconclusive** ☐ Improvement Needed ☐ Targets Achieved/Water Body Delisted	
Pollutant Type:	☑ Point Source ☑ Nonpoint Source ☐ Legacy	
Pollutant Source:	Municipal Wastewater Treatment Discharges	Onsite Wastewater Treatment Systems
	Sanitary sewer lines	Confined animal facilities
	Grazing	Urban storm runoff

Water Quality Improvement Strategy

The Sonoma Creek Watershed is in the California Coast Range to the north of San Pablo Bay. The San Francisco Bay Regional Water Board adopted the Sonoma Creek Pathogen TMDL to address pathogen impairments in the watershed. *E.coli* is closely linked to the presence of human pathogens in freshwater and is commonly used as a bacterial indicator species with a numeric target. The primary sources of pathogens identified in the TMDL include septic systems, sanitary sewer system failures, municipal stormwater runoff, municipal wastewater treatment discharge, livestock grazing, and diaries. Multiple actions have been taken to implement the TMDL including: 1) implementing the statewide Onsite Wastewater Treatment Systems (OWTS) Policy to reduce pathogens from septic systems; 2) implementing statewide Waste Discharge Requirements (WDR) for Sanitary Sewer Systems; 3) incorporating TMDL loads into the small municipal stormwater NPDES permit to regulate urban runoff; 4) adopting the dairy permits in 2015 and 2016; and 5) reissuing the grazing operation permit in the Napa and Sonoma Watersheds in 2017. Future implementation actions include grazing and dairy inspections, approval of the Sonoma County OWTS management plan, and continued monitoring.

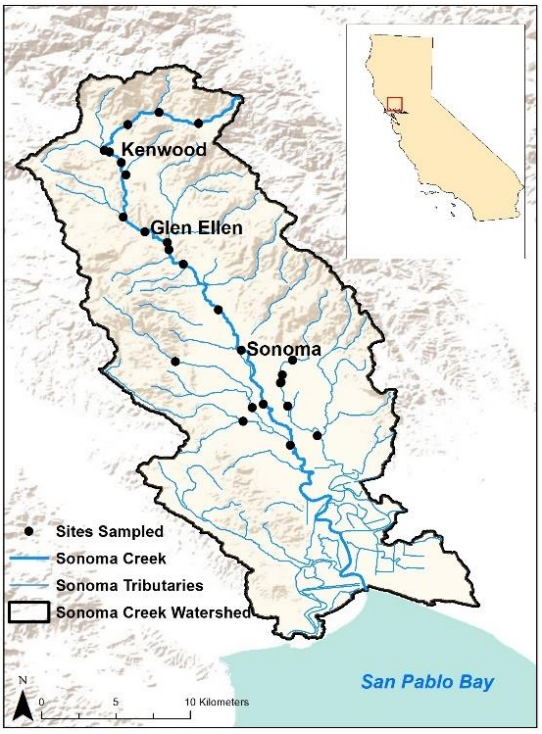
TMDL *E. coli* Numeric Targets

Indicator	*TMDL (MPN/100 mL)*
E. coli	*Geomean < 126 (MPN/100 mL)* *90th percentile < 409 (MPN/100 mL)*

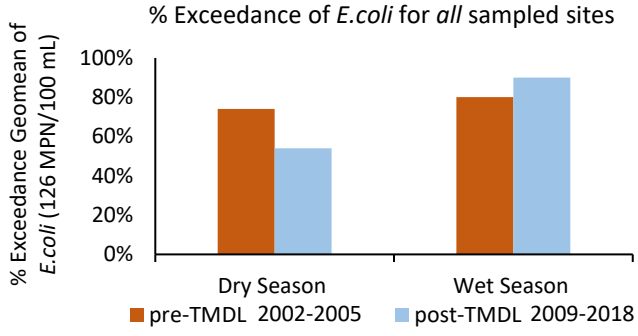
Water Quality Outcomes

- *Water quality improvements include a 20% decrease in percent exceedance of E. coli geomean during the dry season (April – August) (top graph).*
- *Exceedance frequency of E.coli geomean increased 10% during the post-TMDL wet season (December – March).*
- *Water quality during the dry and wet seasons is still not meeting the TMDL target for the percent exceedance geomean of E. coli.*
- *When looking across all single samples, we observed a minor reduction in the mean E. coli concentrations following TMDL adoption in both seasons (bottom graph).*

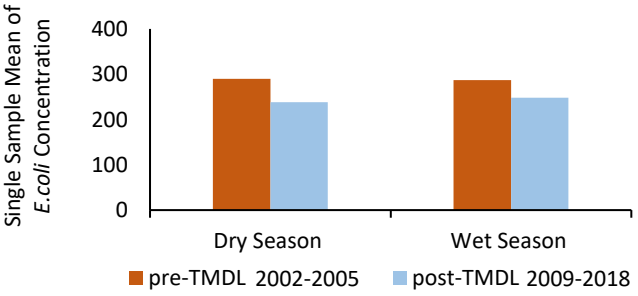
Sonoma Creek Watershed



% Exceedance of *E.coli* for *all* sampled sites



Mean of *E.coli* for *all* sampled sites



Released September 2018

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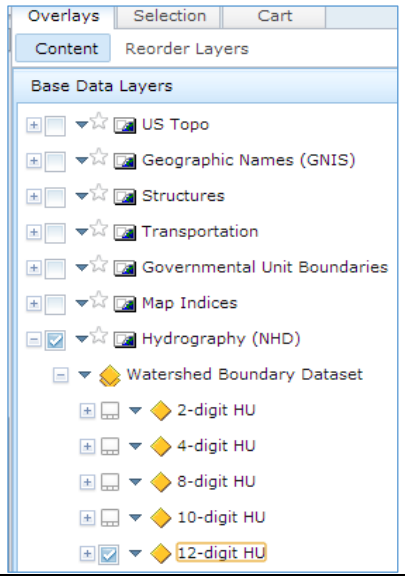
NOTE: *This information will* ***not*** *be posted; it will be used to prioritize implementation actions, assess the effectiveness of those actions and provide information or the development of USEPA SP-12 and WQ10a Reports.*

1. Regional Board contact/expert:
   Name: Kristina Yoshida_____
   Phone number: 510-622-2334_____
   Email: Kristina.yoshida@waterboards.ca.gov_____
   Supervisor's Name: Kevin Lunde_____



2. Select the Pollutant Category (ies) for this impaired waterbody:
   Point Source, Nonpoint Source

3. Provide watershed location by Hydrologic Unit(s) (HUC) at HUC 12 level. Please include all HUC 12 values for the watershed.

180500020301	180500020502	180500020801
180500020302	180500020303	180500020604

4. List the Major Stakeholder Groups (e.g. agriculture, stormwater, watershed groups, etc.) Include State and Regional Water Board programs.

   - Municipal wastewater treatment plants: Sonoma County Valley Sanitation District
   - Watershed groups: Sonoma Ecology Center
   - Agriculture: USDA Resource Conservation Service, Sonoma County Resource Conservation District, Sonoma County Agricultural Commissioner, UC Cooperative Extension
   - Local Government: Sonoma County, Sonoma County Water Agency
   - State Agencies: State Water Board, SF Bay Regional Water Board, California Coastal Conservancy

5. Provide the following information for each implementation action taken *(if you require more rows to describe implementation actions, please add them)*:

Implementation Action	Result of Implementation Action	Action Taken By (Y/N)		
		Discharger	319 Staff	Other
Confined animal facility WDR (2016) and waiver of WDRs (2015)	Improved water quality management within dairies	Y	Y	Region 2 staff

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2017 conditional waiver of WDRs for grazing lands	Improved water quality management within grazing lands	Y	Y	Region 2 staff
Onsite Wastewater Treatment Basin Plan Amendment 2014	Napa Local Area Management Plans due 2016	Y		Region 2 staff

6. Has the State devoted any resources to these implementation actions?
   a. Complete table:

Funding Resource	Yes	No
California CWA 319(h) Project funds	possible	
SWAMP, CAF, etc.	Yes	
California Prop 1, 84, 50, 40, 13, etc. funds	possible	
California State Revolving Fund – CWSRF and/or DWSRF	possible	
Federal funds – US EPA, USFS, BLM, USDA, NOAA, etc.		No
Other Agencies (e.g., CDWR, CDPR, CDFA, CDOC, CDFW, etc.)		No

7. Have the Dischargers devoted any private resources to these implementation actions? (Briefly describe).

Discharger	Resources – Financial or In-kind	Amount	When

8. What are the next steps based upon results described in question #5?
   (If you require more rows to describe next steps, please add them.)

Next Steps	By When	By Whom

Status Definitions

(select checkbox for one (1) status that best describes the water quality improvement project)

Conditions Improving

Water quality data and/or other indicators demonstrate improvement; **BUT**
The final water quality targets not consistently being met.

Data Inconclusive

Not enough data (of acceptable quality) has been collected to demonstrate that the water quality targets are consistently met; **OR**
Variability in data do not permit a determination in water quality trends (positive or negative).

Improvement Needed

Final water quality targets not consistently met; **AND**
In Water Board staff judgment, water quality data and/or other indicators demonstrate that water quality is either declining or not improving.

Targets Achieved/ Water body Delisted

Water quality data or other information demonstrate that final water quality targets are consistently met; **OR**
The water body has been removed from the 303(d) lists.

Glossary *(on Outcomes Page)*

Attainment Date

The attainment date is the projected year water quality targets are expected to be achieved. The attainment date is estimated based on available information at the time of the most recent update to the water quality restoration plan. The attainment date is subject to change.

Beneficial Uses

Beneficial uses define the uses of water. The California Water Code defines beneficial uses of the waters of the state as uses that may be protected against quality degradation include, but are not limited to: domestic, municipal, agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves.

Effective Date

The effective date is the date upon which the TMDL or other implementation action (e.g., Cleanup and Abatement Order) is considered to take effect.

Impaired Water (Listing)

An impaired water is a water body that does not meet the water quality objectives or protect the beneficial uses of the water due to the presence of one or more pollutants. Such waters are identified on the Water Boards' Clean Water Act Section 303(d) list. These impaired waters are sometimes called "listings".

Implementation Outcome Status Assessed

A summary report has been prepared showing the outcome of implementing water quality restoration plans (TMDLs or other approach) that have already been adopted. It is important to note that Regional Boards may be implementing water quality restoration plans (e.g., incorporating TMDL requirements into permits, reviewing water quality data, etc.) for projects for which a Water Quality Improvement Report Card has not yet been created.

Pollutant

A pollutant is a waste or substance that alters the quality of the waters to a degree which unreasonably affects the waters for beneficial uses. The monitoring programs of the Water Boards and others provide information on the levels of pollutants in the State's waters.

Pollutant Type *(select checkboxes for all applicable pollutant types)*

Point Source Pollutant

Point source pollutants are pollutants that are, or may be, discharged from any discernible, confined, and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft.

Nonpoint Source (NPS) Pollutant

Nonpoint source pollutants are pollutants that are or may be discharged from diffuse sources without a single identifiable point of origin. These discharges include, but are not limited to, runoff from agriculture, forestry, grazing, hydromodification, wetlands, and marinas and recreational boating activities.

Legacy Pollutant

Legacy pollutants are pollutants that are primarily the result of historical contributions. Legacy pollutants are the residual from activities such as mining, manufacturing, and agricultural no longer practiced and include some pollutants currently banned by regulation. These pollutants have the common characteristic of persistence in the environment and may have an affinity for sediments. Typically, the decline in environmental legacy pollutant concentrations occurs as a result of natural attenuation processes. The pesticide DDT is an example of a legacy pollutant.

Water Quality Objective

The limit or level of water quality constituents or characteristics which are established for the reasonable protection of beneficial uses of water or the prevention of nuisance within a specific area.

Water Quality Target

The water quality target is a description of the desired condition in the watershed or water body. Typically, targets are tied to specific water quality standards that provide measurable goals for the water quality restoration plan.