

Water Quality Report Card

Walker Creek Nutrient Impairment Analysis

Regional Water Board: San Francisco Bay, Region 2

Beneficial Uses Affected:

COLD, COM, RARE, REC1, REC2, SPWN, WARM

Implemented Through: N/A

Effective Date: N/A

Attainment Date: N/A

STATUS

☒ Data Inconclusive

Pollutant Type:

☒ Point Source

☒ Nonpoint Source

Pollutant Source:

Onsite Wastewater Treatment Systems
Wastewater Discharges
Confined Animal Facilities
Non-Point Source Runoff
Grazing

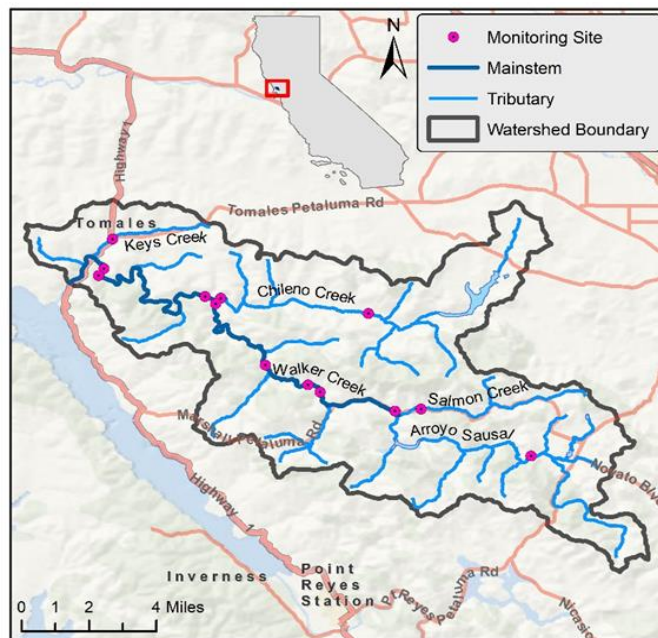
Water Quality Impairment Assessment

The Walker Creek watershed encompasses 73 square miles in northwestern Marin County and Sonoma County which drains to Tomales Bay. It is protected habitat for coho salmon, steelhead trout, and California freshwater shrimp. Land use in the watershed consists of grazing, residential, mining, and farming. Walker Creek is listed as impaired for mercury, pathogens, sediment, and nutrients on the Clean Water Act 303(d) list. Total Maximum Daily Loads (TMDLs) have been developed to control mercury and pathogen sources. A nutrient TMDL has not been developed as poor agreement between eutrophication indicators do not permit a determination in water quality trends. [The Tomales Bay Grazing Waiver Program](#), which is used to implement mercury and pathogen TMDLs in the watershed, also reduces nutrient and sediment inputs from grazing operations. The collection and disposal of waste from operations such as dairies and horse facilities is regulated through the [Confined Animal Facility \(CAF\) Program](#). Controlling pathogens from CAF animal wastes also has the effect of reducing nutrients entering the creek from confined animal operations.

Numeric Evaluation Guidelines Exceedances

Analyte	Numeric Evaluation Guideline	Number & Percent of Exceedances	Threshold Type
California Stream Condition Index	0.79	4/11 (36%)	Biological Condition
Macroalgae cover (%)	30%	2/12 (17%)	Eutrophication
Benthic algae biomass	40 g/m ²	5/12 (42%)	Eutrophication
Benthic algae chlorophyll <i>a</i>	100 mg/m ²	0/12 (0%)	Eutrophication
Total phosphorous	0.166 mg/L	4/17 (24%)	Eutrophication
Total nitrogen	0.59 mg/L	5/13 (38%)	Eutrophication
Daily dissolved oxygen change	< 5 mg/L	6/363 (2%)	Eutrophication
Dissolved oxygen- 7-day average of min values	7.0 mg/L	69/332 (21%)	Eutrophication
Total ammonia	0.6-3.3 mg/L	0/12 (0%)	Toxicity
Nitrate + Nitrite as N	10 mg/L	0/17 (0%)	Toxicity
Nitrite as N	1 mg/L	0/11 (0%)	Toxicity

Walker Creek Watershed Map



Water Quality Outcomes

- Some indicators were exceeded above the 17% threshold allowed in the [Listing Policy](#)
- Nutrient toxicity thresholds were not exceeded
- Eutrophication indicators for algae were exceeded, but there was overall poor agreement between indicators
- High nutrient levels were observed in small tributaries and Walker Creek
- Oxygen objectives for cold water fish were not met
- Walker Creek main stem is in better biological condition than the upstream tributaries
- Physical habitat conditions may be contributing to low biological condition in Chileno Creek and Arroyo Sausal
- Focused monitoring is needed to determine the magnitude and extent of nutrient impairment.
- Additional bioassessment and nutrient monitoring is planned for 2019.