Water Quality Report Card

Lagunitas Creek Nutrient Impairment Analysis

Regional Water Board: San Francisco Bay, Region 2

Beneficial Uses Affected:
COLD, MUN, RARE, REC1, REC2, SPWN, WARM

Implemented Through: N/A

Effective Date: N/A

Attainment Date: N/A

STATUS ☑ Data Inconclusive

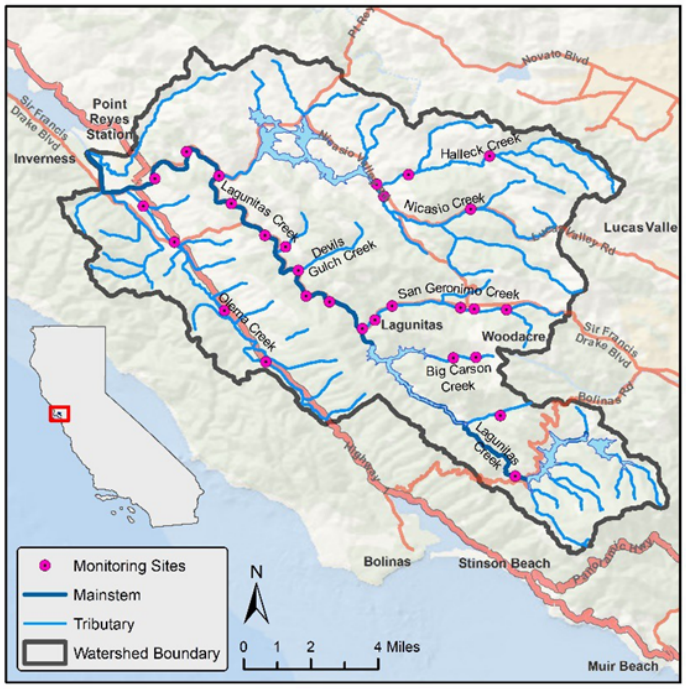
Pollutant Type: ☑ Nonpoint Source ☑Legacy

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

Water Quality Impairment Analysis

The Lagunitas Creek watershed encompasses 103 square miles in Marin County which drains to Tomales Bay. It is protected habitat for coho salmon, steelhead trout, and California freshwater shrimp. Current and historic land use in the watershed includes grazing, logging, row crops, golf courses, and residential communities on septic. A large portion of the watershed is open space which offers hiking and equestrian trails. Lagunitas Creek is listed as impaired for pathogens and nutrients on the Clean Water Act 303(d) list. A total maximum daily load (TMDL) to control sources of pathogens was approved by USEPA in 2007. A nutrient TMDL is required but has not been developed. Lagunitas is included in the Tomales Bay Grazing Waiver Program, which was developed to control nonpoint sources of bacteria, sediment, and mercury entering Tomales Bay. The Confined Animal Facility Program controls pathogens from manure waste collection and disposal. These programs have the added benefit of reducing nutrients entering the creek from animal operations.

Lagunitas Creek Watershed Map



Numeric Evaluation Guideline Exceedance

Analyte	Numeric Evaluation Guideline	Number & Percent of Exceedances	Threshold Type
California Stream Condition Index	0.79	7/29 (24%)	Biological Condition
Macroalgae cover (%)	30%	4/29 (14%)	Eutrophication
Benthic algae biomass	40 g/m^2	2/29 (7%)	Eutrophication
Benthic algae chlorophyll *a*	100 mg/m^2	2/29 (7%)	Eutrophication
Total phosphorous	0.166 mg/L	4/40 (10%)	Eutrophication
Total nitrogen	0.59 mg/L	9/40 (23%)	Eutrophication
Daily dissolved oxygen change	< 5 mg/L	44/248 (18%)	Eutrophication
Dissolved oxygen- 7-day average of min values	7.0 mg/L	176/242 (73%)	Eutrophication
Total ammonia	0.6-3.3 mg/L	0/40 (0%)	Toxicity
Nitrate + Nitrite as N	10 mg/L	0/40 (0%)	Toxicity
Nitrite as N	1 mg/L	0/26 (0%)	Toxicity

Water Quality Outcomes

- *Some indicators were exceeded above the 17% threshold allowed in the Listing Policy*
- *Nutrient toxicity thresholds were not exceeded*
- *Elevated nutrients and eutrophic conditions were not observed throughout the watershed Exceedances of indicators occurred in San Geronimo Creek and portion of Lagunitas Creek, but there was poor overall agreement between indicators*
- *Dissolved oxygen objectives were not met in San Geronimo and Nicasio creeks*
- *Low biological scores were observed in Halleck and Nicasio creeks, but did not correspond to nutrients*
- *Focused monitoring is needed to determine the magnitude and extent of nutrient impairment.*
- *Additional nutrient and bioassessment monitoring in San Geronimo Creek is planned for 2019.*

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