



SUMMER 2024 UPDATE

Monterey Waterkeeper is passionate about ensuring that everyone can enjoy clean, beautiful rivers and coastal waters during hot summer days. Here is a snapshot of our work and achievements in the past three months:

Salinas River Lagoon Kayaking & Water Quality Testing

On June 15, twenty-five water warriors kayaked in the Salinas River Lagoon, a precious refuge for wildlife and outdoor lovers. Thanks for joining us, Monterey County Supervisor-elect Kate Daniels! This trip was made possible by the generous in-kind support of Monterey Bay Kayaks.

Our volunteers also conducted water quality testing at the Lagoon. Unfortunately, monitoring results showed that the water is not swimmable, and people should not drink or eat fish caught at the Lagoon. Find out more about the water quality of the Salinas River Lagoon on pages 2-4.



Uplifting Monterey's Chinese Fishing Villages

On May 11, Monterey Waterkeeper coordinator Victor Torres and volunteer Christian Canellos joined hundreds of descendants of the Chinese Fishing Villages around the Monterey Peninsula at the 2024 Pacific Grove Walk of Remembrance. In the 1850s, Chinese pioneers sailed from China and began the first commercial fisheries of Monterey Bay. We created an [illustrated education booklet](#) on the lives of and racial discrimination faced by these villagers. We are honored to share the stories of these resilient families and their contributions to the rich history of the Monterey Peninsula near present-day marine protected areas. This project is supported by Coastal Quest, with funding from the Ocean Protection Council and private foundations.

Reducing Agricultural Nitrate Runoff

Last Fall, the State Water Board struck down limitations on nitrogen fertilizer over-use from the 2021 Central Coast Agricultural Order. The Board is now convening an expert panel to make recommendations on whether there is enough information to establish limits. On June 28, Monterey Waterkeeper led a statewide coalition in submitting a [comment letter](#) advocating that the panel uses the ample existing data and scientific research to recommend strong nitrate limits. We also urged that the Board convene the expert panel without any more delay and select scientists with expertise in organic agriculture and the public health impacts of nitrate overexposure to serve on the panel. We will continue to fight for clean waters before the expert panel and the State Water Board so that the Board adopts nitrate reduction standards in the Central Coast region and statewide.

*In gratitude,
Chelsea*

*Please consider [donating](#) to support clean water for all.
We are always looking for passionate volunteers and bright ideas!*

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Water Quality Sampling Data Summary

Sampling Location: **The Salinas River Lagoon**

Date and Time of Sampling: **June, 15 2024; 10:15-10:30 am**

Latitude and Longitude: **36.739097, -121.7949471**

Methodology: We took 2 samples of the following analytes using probes and a nitrate reagent kit. On June 13, 2024, we also took a bacteria sample that was analyzed by a local laboratory.

Results: Our samples indicate that water quality at the Salinas River Lagoon is not suitable for swimming or drinking at this time, and eating fish caught in the lagoon may be harmful to human health. The water quality is also not optimal for aquatic life.

Analyte	Measurement	Watershed Health Goal	Result
Water Temperature	21 degrees c	Aquatic Life Goal: 18 degrees C ¹	Fish life may be impacted. Steelhead fish might have a hard time surviving at this temperature.
Total Coliform	2909 mpn/100mL	Human Health Goal: 1000 mpn/100mL ²	Do not eat fish caught in the Lagoon. At this total coliform level, fishing and consuming fish from the Lagoon is not recommended.
E.Coli	108 mpn/100mL	Human Health Goal: 126 mpn/100mL ³	Avoid swimming in the Lagoon. The E. Coli and Enterococci levels indicate that coming into contact with the water could mean risking exposure to fecal pathogens.
Enterococci	52 mpn/100 mL	Human Health Goal: 320 mpn/100 mL ⁴	
Nitrate	5 mg/L	Human Health Goal: 10 mg/L ⁵	Avoid drinking Lagoon water. While the nitrate level does not meet or exceed the human health goal, nitrates above unimpacted levels (1-2 mg/L) are still present in the water and

¹ Moyle, P.B. 2002. Inland fishes of California: revised and expanded. University of California Press, Berkeley, California. 502 pp.

² [California Ocean Plan Human Health Protection Objectives](#) (for fish consumption)

³ [EPA 2012 Water Quality Criteria for Recreation](#)

⁴ [EPA 2012 Water Quality Criteria for Recreation](#)

⁵ [USEPA Primary Maximum Contaminant Level](#)

			therefore the water should not be consumed. 5 mg/L of nitrates is evidence of human impact.
pH	pH: 7.95	Aquatic Life Goal: Between 7.0 and 8.5 ⁶	The pH is at an adequate level to support aquatic life in the lagoon.
Dissolved Oxygen	9.59 mg/L	Aquatic Life Goal: 7 mg/L ⁷	The dissolved oxygen level is adequate for supporting aquatic life and it does not indicate eutrophication.
Conductivity	4,204 µS/cm	Aquatic Life Goal: 1,460 µS/cm ⁸ Human Health Goal: 900 µS/cm ⁹	Avoid swimming in or drinking water from the Lagoon. The high conductivity at the Lagoon is likely due to the mixing of ocean water with fresh water near the outlet of the lagoon. However, it could also indicate high levels of dissolved solids making the water unswimmable and undrinkable.

Information about the analytes and why we are monitoring them:

Water Temperature:

Water temperature is considered one of the basic analytes because it is directly related to other analytes. For example, cold water can hold more dissolved oxygen than warm water. Water temperature impacts aquatic life cycles and reproductive rates, and changes in temperature can affect species composition in aquatic environments. Water temperature is impacted by solar radiation, air temperature, shading by riparian vegetation, flow and channel depth.

Total Coliform:

Total coliform bacteria is a broad group of bacterial species that includes several “indicator bacteria”, which is bacteria that is not normally found in ocean or freshwater, but which is found in sources of fecal contamination.

E. coli:

E. coli is an “indicator bacteria”. Most E. coli strains are not pathogenic to humans, but they can indicate the presence of pathogens. E. coli could come from faulty septic/sewer systems. E. coli is also found in the intestines of birds and mammals, so it can be an indication of contamination from animal feces. It can also originate from aquatic wildlife.

⁶ [Central Coast Water Quality Control Plan](#)

⁷ [Central Coast Water Quality Control Plan](#)

⁸ [SWAMP Criteria for identifying most disturbed sites in Chapparal \(Rehn, 2016\)](#)

⁹ [California Secondary Maximum Contaminant Level \(CA State Water Resources Control Board\)](#)

**Enterococci:**

Enterococci is an "indicator bacteria". Not disease causing themselves, they can indicate the presence of other disease causing bacteria with risks to human health. Enterococci is not currently monitored by the Central Coast Ambient Monitoring Program (CCAMP).

Nitrate:

Nitrate is the primary form of biologically available nitrogen. Concentrations of nitrate greater than 10 mg/L in drinking water can cause human health risks such as Methemoglobinemia (Blue Baby Syndrome) in infants, bladder cancer and non-Hodgkins Lymphoma.

Excessive nitrate concentrations can stimulate extensive growth of algae and aquatic plants. As they die, microorganisms begin to decompose them as part of their own metabolism and growth. These microbes require oxygen to decompose plant material and begin to consume oxygen in the water making it unavailable to other organisms.

Excessive nitrate can originate from direct discharge and non-point sources such as agriculture and urban runoff, specifically fertilizers, confined livestock/animal wastes, septic systems and sewage treatment systems, and atmospheric deposition.

pH:

High pH means that the water is alkaline and low pH means that it is acidic. pH of water influences chemical reactions and biological processes. Relatively small changes in pH can greatly alter the rates of nitrification and denitrification. Aquatic life is sensitive to pH and fluctuations will alter community composition.

Dissolved Oxygen:

Dissolved oxygen is critical for aquatic life and is influenced by water temperature and eutrophication from nitrates and other chemicals. According to CCAMP: narrow dissolved oxygen ranges that remain near full saturation levels (approximately 9-10 mg/L and above 85% saturation) indicate the absence of eutrophic conditions. Widely ranging oxygen levels (lower than 7.0 and higher than 13.0) are characteristic of waters which have excessive algal activity.

Conductivity:

Conductivity, or water's ability to carry an electrical current, is influenced by the dissolved mineral ion concentration. Conductivity provides a measure of total dissolved solids such as calcium, manganese, sodium, potassium, and chloride. Waters with high dissolved solids may be unsuitable for agricultural, drinking, and industrial purposes.

NOTE: Watershed Health Goals for the analytes are based on thresholds set by CCAMP. For more information about the thresholds and their sources and for more detailed information about any of these analytes, visit the [CCAMP Data Navigator](#).