



Heal the Bay

# RIVER REPORT CARD

2020





**Heal the Bay**

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**2020**

**Heal the Bay believes people have a right to know about the quality of the water where they swim and play. We are pleased to provide our community with this science-based, easy-to-use report card. This annual report can be used to make decisions about where to get in the water, as well as policies to protect public health and the environment.**

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Heal the Bay



Water Quality Monitoring Gear

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# Executive Summary

Heal the Bay developed the River Report Card to provide easy-to-understand water quality information to people visiting Los Angeles County's freshwater recreation areas. Because there is no statewide requirement for fecal pollution monitoring in freshwater recreation areas, the water quality data that is available is often inconsistent and difficult for the public to interpret. The River Report Card provides Green, Yellow, and Red water quality grades to help let people make safe decisions on where and when it's safe to get in the water. For 2020, we provided summertime grades online for 28 sites throughout L.A. County.

- Across all 28 sites graded in 2020, 70% of the grades issued were Green, 17% were Yellow, and 13% were Red.
- Eight swimming holes across L.A. County did not experience a single bacteria exceedance, earning 100% Green grades. One of these sites is located in the main channel of the L.A. River, which is a first for the River Report Card.
- Nine recreation sites made it onto our Freshwater Fails list meaning they experienced the most fecal pollution during summer 2020. Most of these spots are located in developed urban environments.
- Tujunga Wash at Hansen Dam continues to have water quality issues, earning the top spot on the Freshwater Fails list for a third year in a row.
- The San Gabriel River below the convergence of the North and West Forks was unfortunately the first Freshwater Fail from this watershed in the River Report Card.
- Switzer Falls made a surprise appearance on the Freshwater Fails list as well, coming in at number nine. This swimming hole is located in the mountains and has a history of good water quality.
- The Lake Balboa area in the Upper L.A. River Watershed had another disappointing year in terms of water quality. Lake Balboa Boat Ramp, Lake Balboa Outlet, and Bull Creek all made it on our Freshwater Fails list.
- Hermit Falls was not monitored by LASAN in summer 2020, but they added Big Tujunga Creek at Vogel Flats as a monitoring location.

- L.A. River Recreation Zone locations were monitored during the summer despite being closed to the public. Also, due to pandemic-related constraints, Heal the Bay was unable to monitor the L.A. River at Benedict St. (formerly named Frogspot) as well as storm drains in the Elysian Valley.
- Areas with urban development tended to have lower grades than natural areas, and most sites on the Freshwater Fails list are in urban landscapes. Sites in the San Gabriel River Watershed and Upper L.A. River Watershed are in less developed areas and are less impacted by urban runoff.

Heal the Bay is now leading the effort to achieve statewide health protections for people recreating in freshwater. We are thrilled to announce that Assembly Member Richard Bloom, in partnership with Heal the Bay, has introduced legislation that will begin to address the lack of monitoring and standardization in freshwater recreational water quality monitoring - Assembly Bill 1066 (AB 1066). This piece of legislation proposes to task the California Water Quality Monitoring Council with defining and identifying high-use freshwater recreation sites across the state as well as making recommendations for an appropriate monitoring program for these sites. This is a critical first step in achieving more health protections for visitors to freshwater swimming holes. Heal the Bay will continue to support AB 1066, and we plan on proposing future legislation that will require monitoring and public advisories for freshwater recreation areas.

In addition to the River Report Card, Heal the Bay is actively working to keep pollution from entering our waterways in the first place. In 2020, Heal the Bay launched the Take L.A. by Storm campaign to provide support for new environmental advocates to engage in the MS4 permit process and hold pollutant dischargers accountable. The permit system was created to help regulate the amount of pollution permittees were putting into the environment and ensure pollution discharges decreased over time. Unfortunately, there has been a lack of accountability in the MS4 permit program, which has allowed permittees to fall behind schedule in reducing pollution discharges.

**We would like to acknowledge that Heal the Bay is located on the traditional lands of the Tongva People and pay our respect to elders both past and present.**

# Introduction

Los Angeles (L.A.) County's rivers, streams, and lakes host numerous popular recreation areas that are vital to many peoples' quality of life. Unfortunately, many freshwater recreation sites in L.A. County suffer from fecal indicator bacteria (FIB) pollution, which indicates the presence of pathogens that can cause infections, skin irritation, respiratory illness, and gastrointestinal illness. FIB pollution sources are typically from urban runoff, leaks or spills from wastewater collection systems, illicit or illegal discharges, and failing septic systems. Across the United States, millions of people contract these waterborne illnesses after recreating at freshwater recreation sites, resulting in billions in health care costs annually<sup>1,2</sup>.

Unlike ocean beaches, there is no statewide oversight, standardization, or funding for FIB monitoring, nor are there mandated public water quality notifications for freshwater swimming and recreation areas. Many freshwater sites are monitored for regulatory permit conditions, such as stormwater and point source pollution permits. But, the data collected are not compiled and shared with the public in a timely or user-friendly manner. Furthermore, if the monitoring is specifically for stormwater regulation and not recreation, the sampling locations and frequency may not be protective of public health. Even the little recreational FIB monitoring that is done is not adequate - water in recreation areas is generally not tested year-round, and there are many sites that go unmonitored. On top of that, data for monitored recreation zones are often difficult to access and interpret, leaving the public uninformed of potential dangers to their health.

Heal the Bay protects public health by providing needed water quality information to the public in our River Report Card. Heal the Bay collects samples and analyzes water quality at five recreation sites in L.A. County; compiles monitoring data from an additional 22 L.A. County locations; and transforms the data into easily understood, color-coded grades of Red, Yellow, and Green. The River Report Card is accessible, free of charge, and online to ensure that the information is widely available. Heal the Bay informs the public, public health authorities, regulatory agencies, and policy-makers of potential health risks; advocates for recreation-targeted education; encourages enhanced monitoring; and recommends ways to improve water quality.

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<sup>1</sup> DeFlorio-Barker, S., C. Wing, R.M. Jones, S. Dorevitch. 2018. Estimate of incidence and cost of recreational waterborne illness on United States surface waters. *Environmental Health* 17:3.

<sup>2</sup>[https://www.cdc.gov/mmwr/volumes/69/wr/mm6925a3.htm?s\\_cid=mm6925a3\\_w&deliveryName=USCDC\\_415-DM30273](https://www.cdc.gov/mmwr/volumes/69/wr/mm6925a3.htm?s_cid=mm6925a3_w&deliveryName=USCDC_415-DM30273)

## **River Report Card during the Pandemic**

Summer 2020 was an unprecedented time in Los Angeles County. The COVID-19 pandemic, a record setting wildfire season, and extreme heat culminated in a public health crisis that highlighted the dire need for equity in the places we recreate. The pandemic forced people to stay local and opt for close-by areas to take a swim. Because of this, as well as the reduced risk of contracting COVID-19 outdoors, people flocked in unusually high numbers to freshwater recreation sites, ocean beaches, and parks to stay active and cool. The fact that so many people sought respite outside made clear the importance of open space for physical and mental health.

Last summer was filled with many challenges that impacted our program. Due to COVID-19, Heal the Bay was unable to hire local college students to monitor water quality at recreation sites and storm drains as in previous years. Instead, Heal the Bay's permanent staff carried out water sampling. This was a major setback to our program because one of our main goals has always been to provide knowledge, skills, and career training to emerging professionals. Additionally, without a full crew, we sampled fewer recreation sites and storm drains, leaving the public with less information on how to stay safe. We also had to take extra precautions while sampling to reduce exposure to potentially contaminated water and among crew members<sup>3,4</sup>.

There were also major changes in accessibility and use this past summer at the sites Heal the Bay monitored. Malibu Creek State Park was open all summer, but the swimming holes (Rock Pool and Las Virgenes Creek) remained closed due to concerns over the ability to maintain proper physical distancing. However, this closure was clearly not enforced as we saw many swimmers throughout the summer. The official L.A. River recreation zones<sup>5</sup> were open from Memorial Day until the end of September, but kayaking was not allowed due to safety concerns around COVID-19.

Monitoring efforts by L.A. Sanitation<sup>6</sup>, Council for Watershed Health<sup>7</sup>, and San Gabriel Regional Watershed Monitoring Program<sup>8</sup> were impacted in summer 2020 as well. There were weeks where certain recreation sites in the Upper L.A. River Watershed and San Gabriel River Watershed were not monitored due to park closures or overcrowding concerns. According to L.A. Sanitation officials, Hermit Falls was not monitored in 2020 because it is a particularly crowded area that posed a health risk to the water quality monitors. Worker safety is incredibly important, as is the health of all Angelenos and visitors. Unfortunately, these tough decisions resulted in critical water quality information

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<sup>3</sup> <https://www.cdc.gov/coronavirus/2019-ncov/community/sanitation-wastewater-workers.html>

<sup>4</sup> <https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/prevention.html>

<sup>5</sup> <http://lariverrecreation.org/>

<sup>6</sup> <https://lacitysan.org/lariverquality>

<sup>7</sup> <https://www.watershedhealth.org/river-resources>

<sup>8</sup> [http://sgrrmp.org/swim\\_safety\\_main.html](http://sgrrmp.org/swim_safety_main.html)



not being available at a very popular location all summer. L.A. Sanitation instead sampled Big Tujunga Creek at the Vogel Flats picnic area, which is a new addition to the River Report Card. Toward the end of the summer, monitoring in the San Gabriel River Watershed and some of the Upper L.A. River Watershed was cut short due to the Bobcat Fire and the subsequent closure of Angeles National Forest.

## Methodology

### Sampling, Locations, and Dates

Heal the Bay collected water samples weekly during summer months at five recreational sites in L.A. County. Two sites are located in the Malibu Creek Watershed and three sites are located in the L.A. River Watershed. Heal the Bay uses the Defined Substrate Technology (DST) method to quantify fecal indicator bacteria (total coliform, *E. coli*, and *Enterococcus*) utilizing Colilert™ and Enterolert™ (IDEXX, Westbrook, ME). Any samples collected within three days of 0.1 inches or more of rain were not included in this analysis because of the negative impact rain has on water quality. We advise the public to avoid contact with the water for at least three days after a rain event of 0.1 inches or more. Rainfall poses a flood/swift water risk and washes harmful contaminants into waterways.

Heal the Bay also compiles water quality data from monitoring programs and government agencies that oversee some of the same locations that Heal the Bay monitors as well as 23 other locations. Typically, agencies collect samples on a weekly basis and quantify levels of *E. coli* only. For the L.A. River Watershed, data is collected and shared by the Los Angeles River Watershed Monitoring Program (LARWMP)<sup>9</sup> and City of L.A., Bureau of Sanitation and the Environment (LASAN). The locations in the San Gabriel River Watershed are monitored by the San Gabriel River Regional Monitoring Program (SGRRMP).<sup>10</sup> Data have been collected by these groups for many years and were made public in 2017 in the L.A. River Watershed and in 2018 in the San Gabriel River Watershed. Site locations, monitoring groups, and date ranges are detailed in Appendix A.

Heal the Bay began monitoring storm drain outfalls in 2017 in the Elysian Valley Recreation Zone of the L.A. River. We collect water samples from flowing storm drain outfalls in the recreation zone and upstream of the recreation zone to Glendale Blvd. However, during summer 2020, we only collected samples at the Fletcher Ave. storm drain due to constraints the pandemic placed on us. A full list of outfall locations is in Appendix B.

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<sup>9</sup> <https://www.watershedhealth.org/larwmp>

<sup>10</sup> <http://sgrmp.org/>

Complete field and laboratory protocols are available in Heal the Bay's Quality Assurance Project Plans (QAPP), which were approved by the U.S. EPA, reviewers from the California State Water Resource Control Board, and the City of L.A., Bureau of Sanitation and Environment, Environmental Monitoring Division.

## Grading

Heal the Bay developed its own grading methodology to transform technical information into an easy-to-understand format. Grades are presented as Red, Yellow, or Green based on up to four parameters: single sample *E. coli* level, geometric mean *E. coli* level, single sample *Enterococcus* level, and geometric mean *Enterococcus* level.

- **Green:** Zero parameters exceeded; low risk of illness when there is water contact.
- **Yellow:** One to half of the parameters exceeded; moderate risk of illness when there is water contact.
- **Red:** More than half of the parameters exceeded; high risk of illness when there is water contact.

A single sample reflects the water quality at the time of sampling while a geometric mean gives an indication of water quality over the last 30-days; it is a type of average that is not as heavily affected by very high or very low values. For each parameter, the value was determined to be under (not exceeding) or at/over (exceeding) the regulatory or health limit (Table 1).

	Objectives Used in River Report Card		State Water Board Basin Plan Water Quality Objectives <sup>d</sup>	
			<i>For illness rate of 32 per 1000</i>	
Fecal Indicator Bacteria	Single Sample	Geometric Mean	Statistical threshold value (STV)	Geometric Mean
<i>Enterococcus</i>	110 cfu/100ml <sup>a</sup>	30 cfu/100ml <sup>a</sup>	N/A	N/A
<i>E. coli</i>	235/100ml <sup>b</sup>	126/100ml <sup>c</sup>	320 cfu/100ml	100 cfu/100ml

**Table 1.** Limits for freshwater fecal indicator bacteria. Heal the Bay uses the bold limits in the River Report Card compared to the California water quality objectives for freshwater.

<sup>a</sup>These values are recommended in the U.S. EPA. 2012 Recreational Water Quality Criteria for an illness rate of 32/1,000 people. <https://www.epa.gov/sites/production/files/2015-10/documents/rwqc2012.pdf>

<sup>b</sup>This value is derived from the U.S. EPA. 2012 Recreational Water Quality Criteria Beach Action Value for freshwater at an illness rate of 36/1000 people.

<sup>c</sup>Value is derived from the U.S. EPA. 2012 Recreational Water Quality Criteria for an illness rate of 36/1000 people.

<sup>d</sup>The State of California recreational water quality criteria can be found here: <https://www.waterboards.ca.gov/bacterialobjectives/docs/bacteria.pdf>

Our methodology was originally developed using the California and U.S. EPA's recreational water quality objectives. However, the California State Water Board has since updated their bacteria objectives for *E. coli* in freshwater<sup>11</sup>. In our methodology, we used the standards that were in place when our methodology was developed. While the values we use are still valid and justified (Table 1), we will reassess the use of these standards in our upcoming methodology update.

Grades were issued approximately weekly (depending on sampling frequency) during summer months and were determined by the number of bacteria health limits that were exceeded. Sites were graded on the information that was available and the number of parameters varied from one to four, depending on whether both *E. coli* and *Enterococcus* were being measured and whether there were enough samples to calculate a geometric mean. Geometric means were calculated when there were a minimum of four samples within a 30-day period.

## **Freshwater Fails & Honor Roll**

The Freshwater Fails list is composed of the recreation sites that received the highest percentages of Red grades during the 2020 recreation season. Red grades must comprise at least 10% of the grades issued over the summer to make it on the list. We chose 10% as the cutoff because it is a typical threshold used in water quality standards such as Statistical Threshold Values<sup>12</sup>, and it's a threshold commonly used for Clean Water Act 303(d) listing decisions<sup>13</sup>. The Honor Roll is composed of the 10 freshwater recreation sites with the highest percentages of Green grades issued during the 2020 recreation season.

## **Results**

For our analysis, sites were grouped by watershed except the L.A. River Watershed was further split into sites within the official recreation zones and popular recreation sites outside of those recreation zones. Each site was compared to grades across all sites in L.A. County and across all sites in that watershed or zone. Grades were also compared to previous years of monitoring (shown in Appendices C & D) to analyze water quality changes over time. Additional detailed results are available in Appendices E-I, including sample sizes, single sample exceedance numbers and rates, bacteria ranges, and geometric means for each monitoring site and year.

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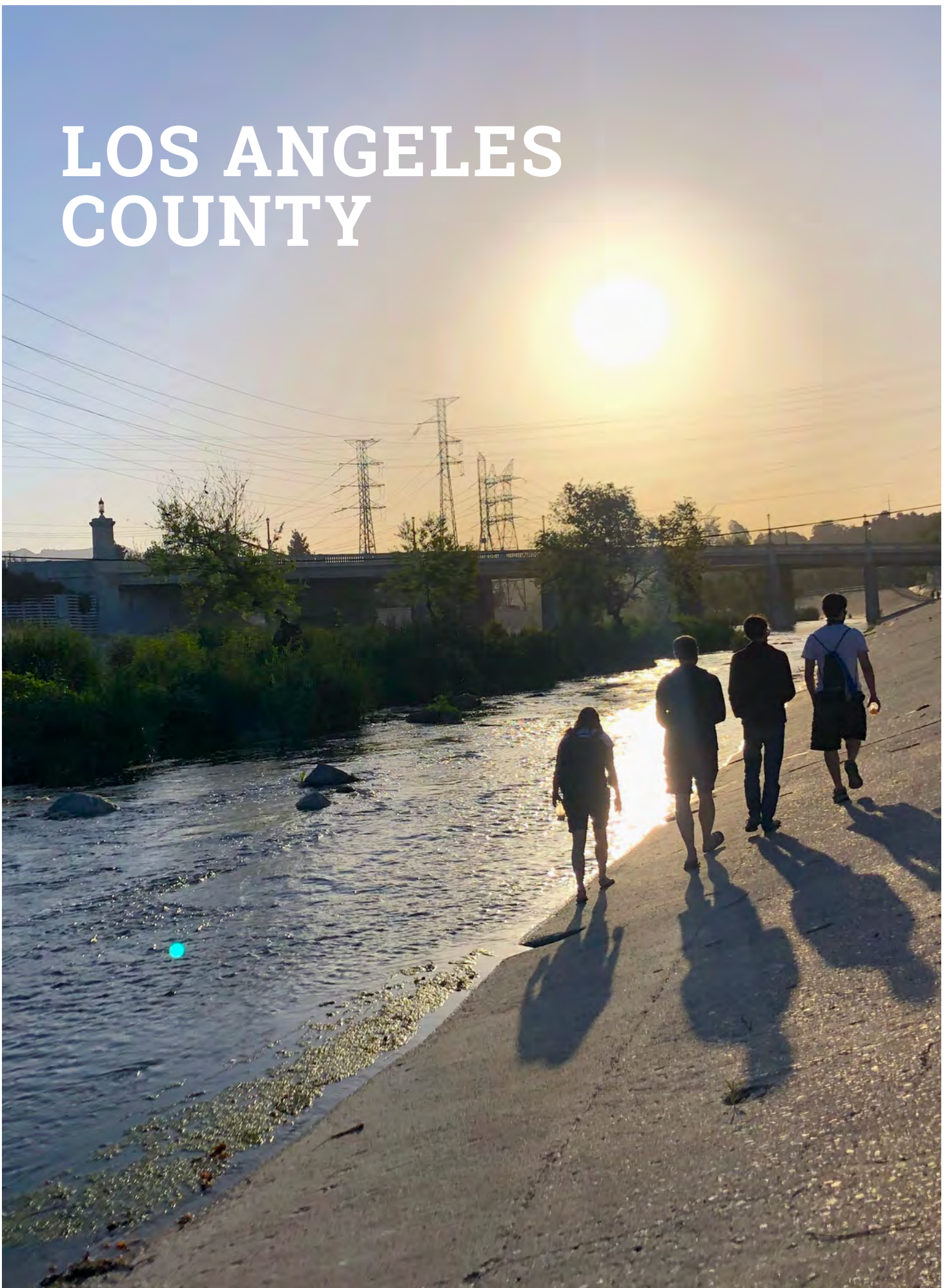
<sup>11</sup> <https://www.waterboards.ca.gov/bacterialobjectives/>

<sup>12</sup> <https://www.waterboards.ca.gov/bacterialobjectives/docs/bacteria.pdf>

<sup>13</sup> [https://www.waterboards.ca.gov/board\\_decisions/adopted\\_orders/resolutions/2015/020315\\_8\\_amendment\\_clean\\_version.pdf](https://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2015/020315_8_amendment_clean_version.pdf)



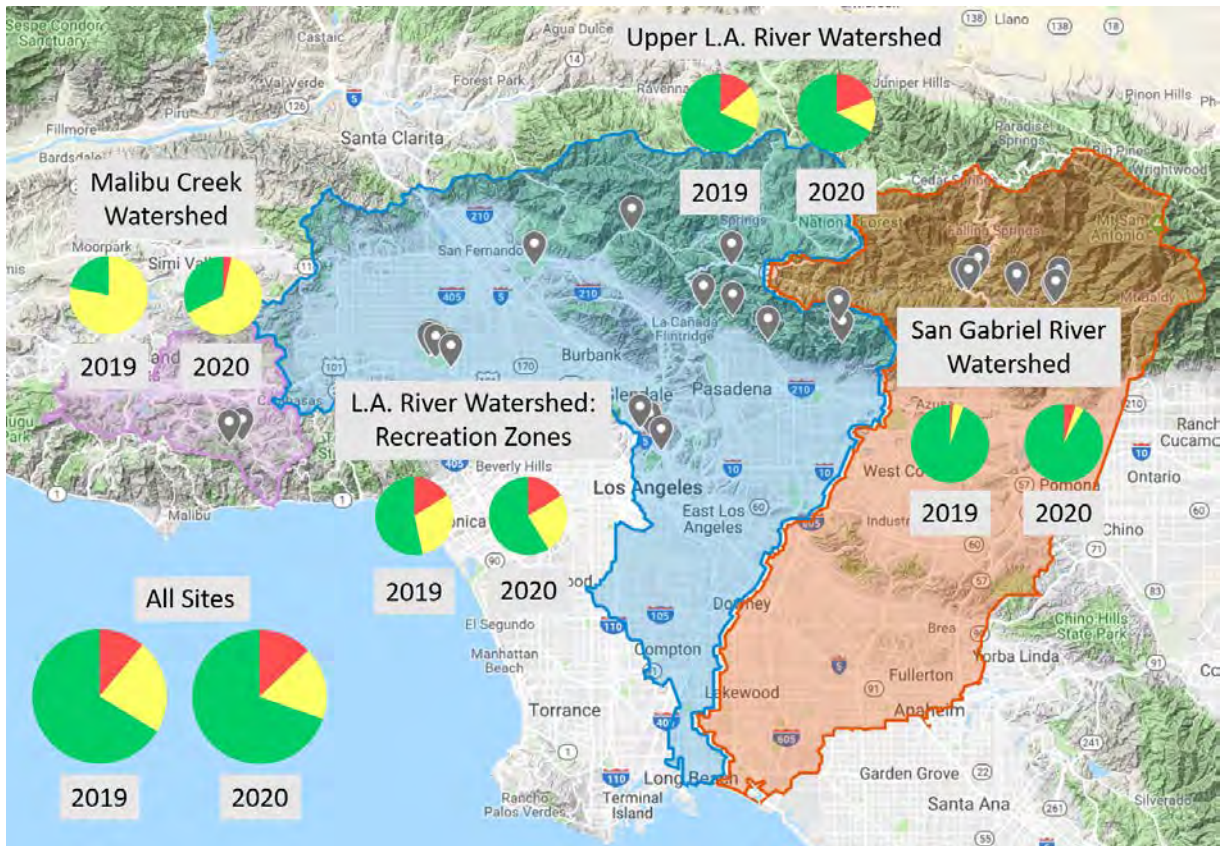
# LOS ANGELES COUNTY



Elysian Valley



## Los Angeles County Overview



**Figure 1:** 2019 and 2020 water quality grade percentages for monitoring sites in L.A. County, Malibu Creek Watershed, L.A. River Watershed Recreation Zones, Upper L.A. River Watershed, and San Gabriel River Watershed. Percentages of Green, Yellow, and Red grades are shown for each area and season.

Across all 28 sites graded in 2020, 70% of the grades issued were Green, 17% were Yellow, and 13% were Red (Figure 1). Sites in the L.A. River Watershed Recreation Zones received 59% Green, 25% Yellow, and 16% Red grades. The San Gabriel River Watershed had 91% Green, 4% Yellow, and 5% Red grades; the Upper L.A. River Watershed Sites had 67% Green, 14% Yellow, and 19% Red grades. Malibu Creek Watershed sites received 32% Green, 64% Yellow, and 4% Red grades in 2020 (Figure 1).

Overall, water quality in summer 2020 was similar to 2019. Three watersheds saw small increases in the percentage of Red grades issued compared to summer 2019, and one watershed saw no change in the proportion of Red grades received. However, those poor marks were balanced out by similar increases in the amount of Green grades earned in two of the watersheds - with the largest increase happening in the Malibu Creek Watershed.

Of the 28 sites included in this report, 11 showed an increase in the percentage of Green grades issued from 2019 to 2020, and three others had 100% Green grades in 2019 and 2020. However, 13 sites experienced a decrease in water quality, and two sites with increases in Green grades actually saw a larger increase in the percentage of Red grades issued. (Appendices C & D).

While the San Gabriel River Watershed generally has the highest marks for water quality each summer, this past year the watershed experienced an overall decrease in water quality. The San Gabriel River Watershed had the highest number of sites that experienced a decrease in water quality. Five sites in this watershed received more Red grades than the year previous, and for the first time a San Gabriel River Watershed site appeared on the Freshwater Fails list. Despite those setbacks, water quality in this watershed remained high - six out of the 10 sites on the Honor Roll are in this mountainous watershed.

The L.A. River Watershed Recreation Zones experienced an increase in the proportion of Green grades for the second straight year, and for the first time, a site in this watershed made it onto the Honor Roll (L.A. River at Benedict Street). Unfortunately, the number two and three spots on this year's Freshwater Fails list also came from the Recreation Zones. The percentage of green grades assigned in this watershed (59%) is lower than the average for all sites in L.A. County (70%) so there is much room for improvement.

Malibu Creek Watershed showed a 10 percentage point increase in Green grades assigned compared to 2019. Most of the improvement was observed at Malibu Creek at Rock Pool, which received substantially more Green grades in summer 2020. In contrast, Las Virgenes Creek at Craggs Road experienced an increase in the amount of Red grades issued. There is much room for improvement as Malibu Creek Watershed had the lowest proportion of Green grades issued in summer 2020 at 32%.

For a second consecutive year, water quality in the Upper L.A. River Watershed decreased from the previous year. Fewer Green grades were issued in summer 2020, and the proportion of Red grades increased. Five of the nine Freshwater Fails are located in this watershed. That is balanced by the four sites in the Upper L.A. River Watershed that earned a spot on the Honor Roll. Despite the decreasing trend in water quality, this watershed still has the second highest percentage of Green grades earned (67%).

# Freshwater Fails

## Freshwater Sites With Highest Risk

The Freshwater Fails list is composed of the recreation sites that received the highest percentages of Red grades during the 2020 recreation season (Table 2). Red grades must comprise at least 10% of the grades issued over the summer to make it on the list. This year, nine sites made the Freshwater Fails list - up from six in last year's report. Sites on this year's list also tended to have higher percentages of Red grades compared to 2019. This is the first time a San Gabriel River Watershed site has been labeled a Fail, and Switzer Falls has fallen off the Honor Roll (2019) and onto the Fails list.

Rank	Site	Watershed	% Red
1	Tujunga Wash at Hansen Dam*	Upper L.A. River Watershed	80
2	L.A. River at Rattlesnake Park	L.A. River Watershed: Recreation Zones	52
3	San Gabriel River Below North and West Forks*	San Gabriel River Watershed	23
4	L.A. River at Middle of Sepulveda Basin Recreation Zone*	L.A. River Watershed: Recreation Zones	22
5-6	Bull Creek*	Upper L.A. River Watershed	20
5-6	Lake Balboa Boat Ramp*	Upper L.A. River Watershed	20
7	Lake Balboa Outlet*	Upper L.A. River Watershed	13
8	L.A. River at Balboa Blvd.*	L.A. River Watershed: Recreation Zones	11
9	Switzer Falls	Upper L.A. River Watershed	10

**Table 2:** Freshwater recreation sites across L.A. County that received the highest percentages of Red grades from Heal the Bay during the 2020 recreation season. Sites marked with \* were graded using only *E. coli* data.

# Honor Roll

## Top 10 Freshwater Sites With Low Risk

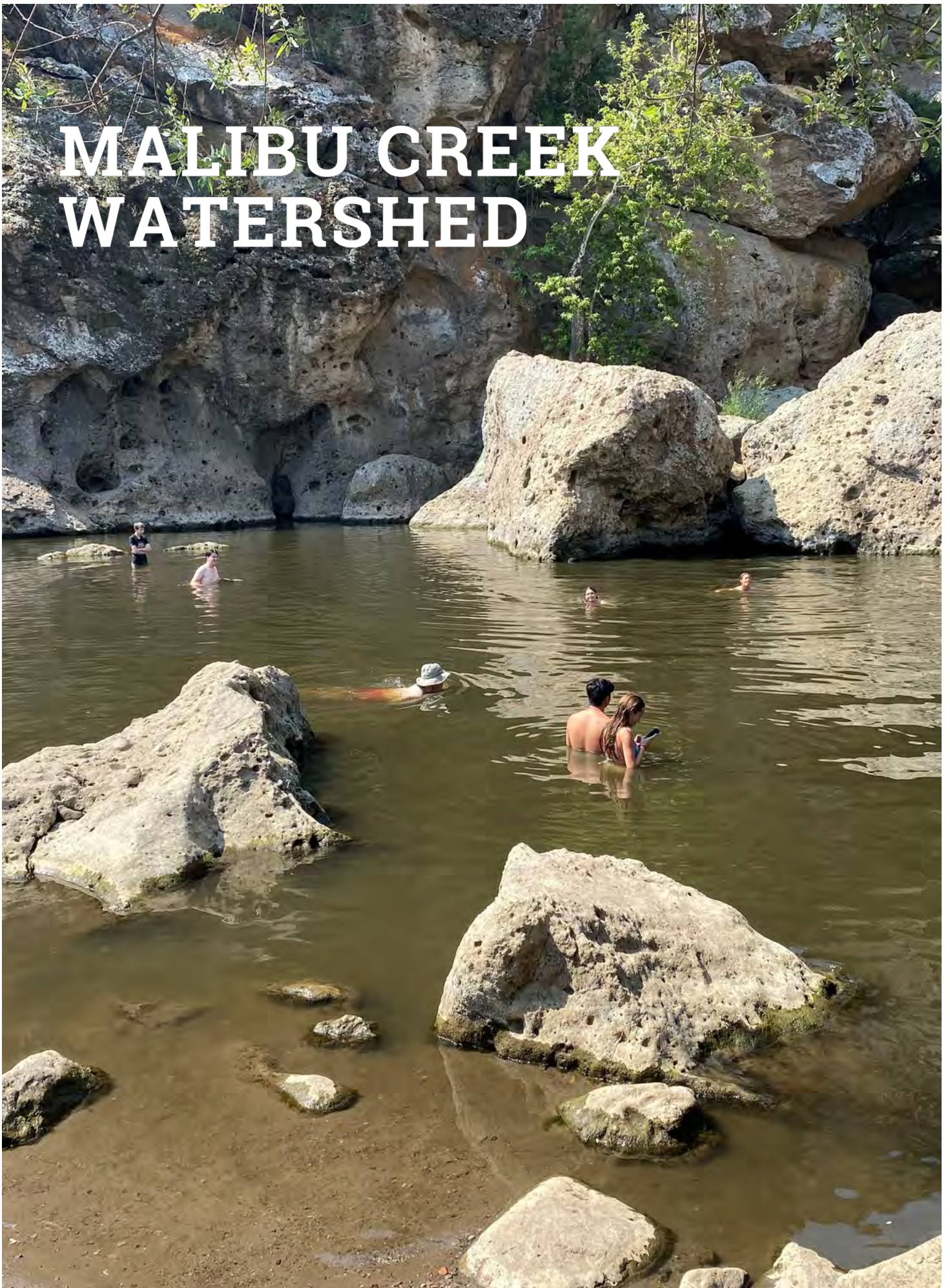
The Honor Roll is composed of the 10 freshwater recreation sites with the highest percentages of Green grades issued during the 2020 recreation season. Eight out of the 10 sites on the Honor Roll did not receive a Red grade in 2020. Similar to previous years, most sites on the list are located in natural landscapes in the San Gabriel River Watershed and Upper L.A. River Watershed. The L.A. River at Benedict St. made it on the Honor Roll list, which is encouraging given that it was on the Freshwater Fails list in 2019. This is also the first time a site located in the L.A. River Watershed Recreation Zones has made it on the Honor Roll. However, this site was not monitored for *Enterococcus* in 2020, which likely led to an improvement in grades.

Rank	Site Name	Watershed	% Green
1-8	San Gabriel River East Fork at Graveyard Canyon*	San Gabriel River Watershed	100
1-8	L.A. River at Benedict St. (formerly Frogspot)*	L.A. River Watershed: Recreation Zones	100
1-8	Gould Mesa*	Upper L.A. River Watershed	100
1-8	Hansen Dam Lake*	Upper L.A. River Watershed	100
1-8	San Gabriel River Lower North Fork*	San Gabriel River Watershed	100
1-8	Sturtevant Falls*	Upper L.A. River Watershed	100
1-8	San Gabriel River Upper North Fork*	San Gabriel River Watershed	100
1-8	Big Tujunga Creek at Vogel Flats*	Upper L.A. River Watershed	100
8-10	San Gabriel River Upper East Fork*	San Gabriel River Watershed	94
8-10	San Gabriel River Upper West Fork*	San Gabriel River Watershed	94

**Table 3:** Freshwater recreation sites across L.A. County that received the highest percentages of Green grades from Heal the Bay during the 2020 recreation season. Sites marked with \* were graded using only *E. coli* data.



# MALIBU CREEK WATERSHED

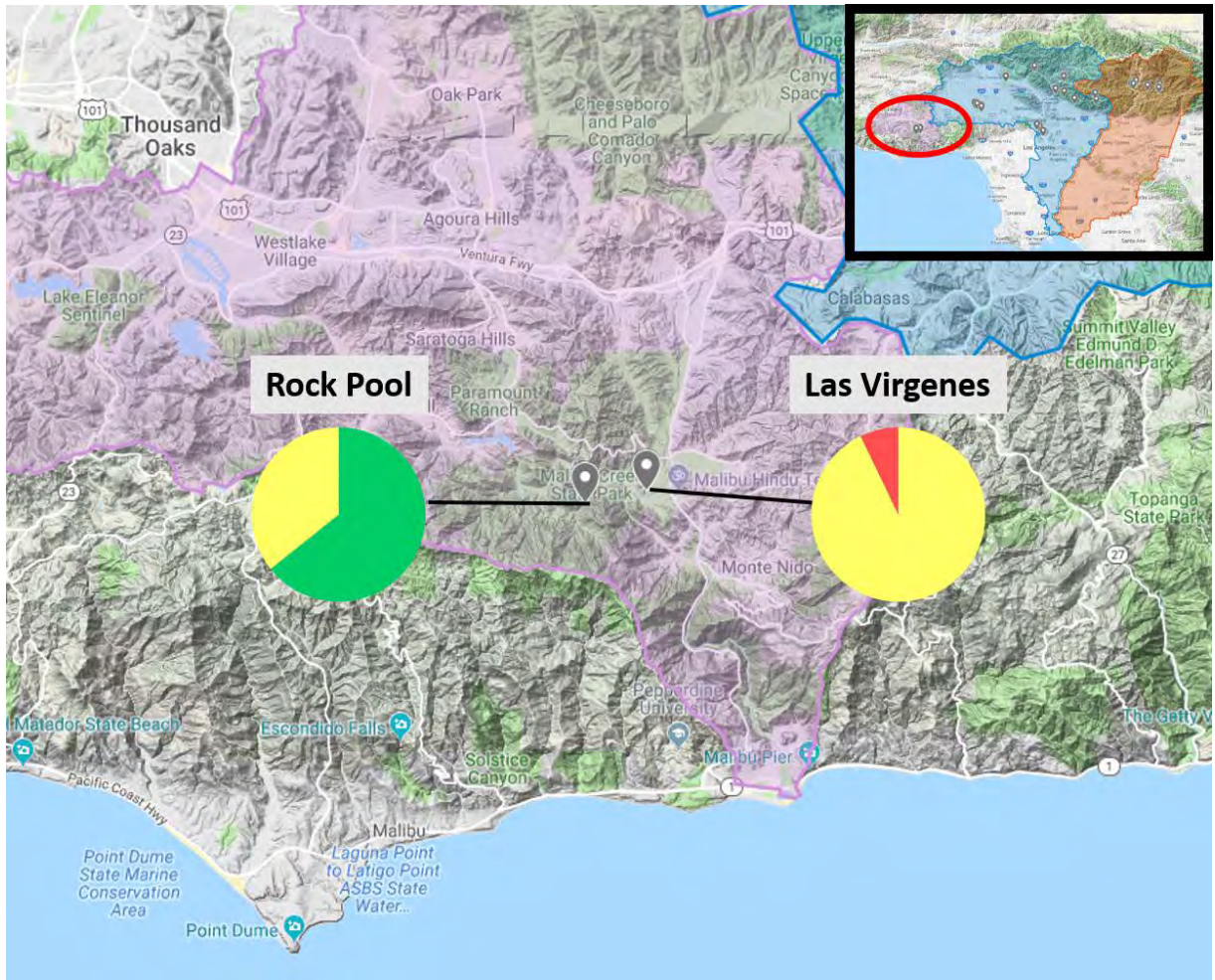


Rock Pool in Malibu Creek State Park



## Malibu Creek Watershed Overview

Heal the Bay has regularly monitored two recreation sites in the Malibu Creek Watershed since 2014: Malibu Creek at Rock Pool and Las Virgenes Creek at Craggs Road. The sites are swimming holes in Malibu Creek State Park, making them easy to access and popular for recreation. Both sites are listed as impaired for bacteria by the State Water Board and U.S. EPA. The sites' grades are based on two FIB, *E. coli* and *Enterococcus*.



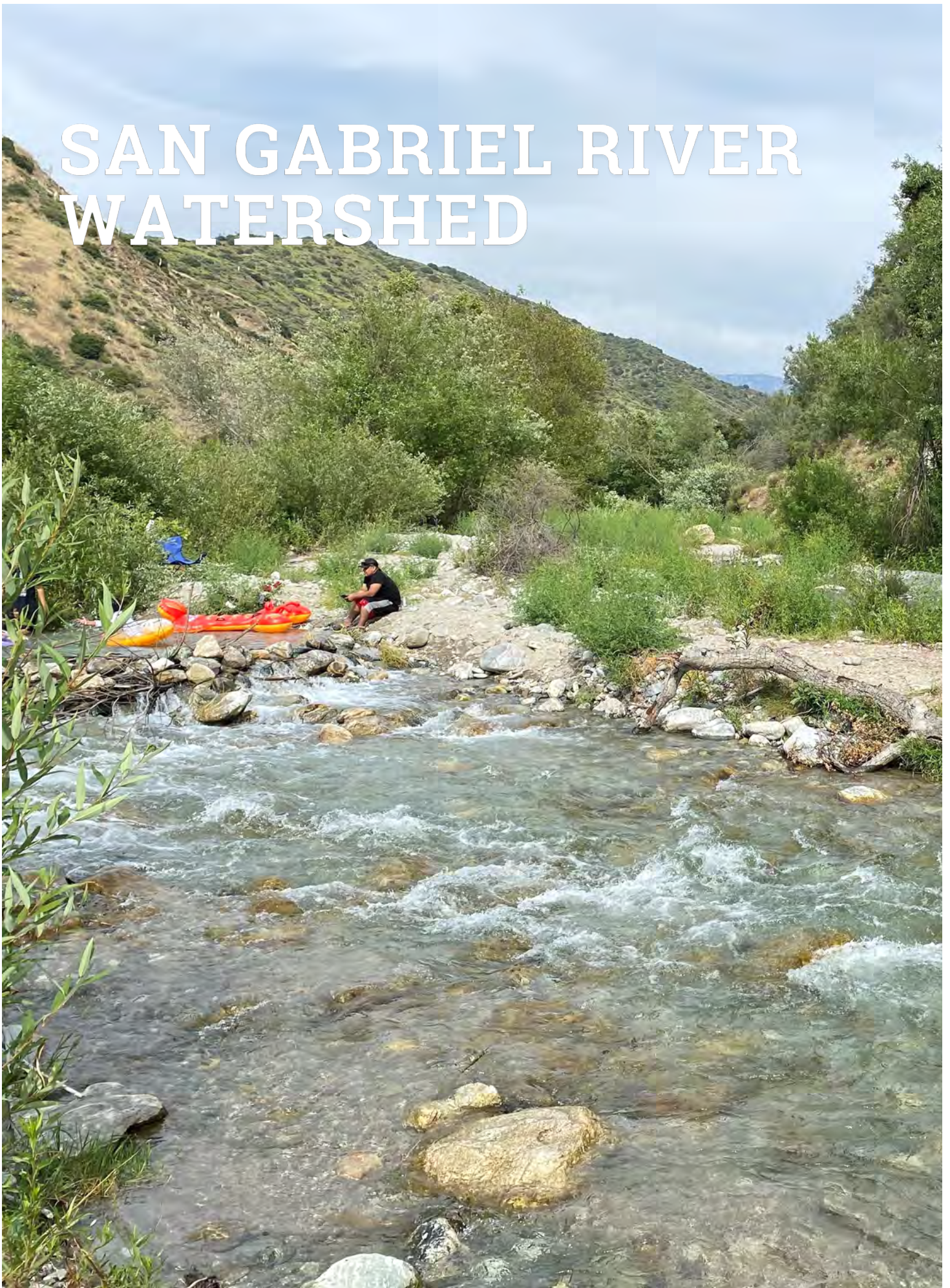
**Figure 2:** Malibu Creek Watershed grade percentages for the 2020 monitoring season. Water quality grades were calculated using *E. coli* and *Enterococcus* data.

The Rock Pool saw a considerable increase in water quality from the previous year. In summer 2020, 64% of its grades were Green and 36% were Yellow (Figure 2). In 2019, only 31% of the grades earned were Green. Despite the 33 percentage point increase in Green grades, Rock Pool still sits below the average percentage of Green grades for the entire County (70%). Fortunately, this site has not received a Red grade in the last 4 years (Appendices C & D).

Las Virgenes Creek at Craggs Road suffered from poor water quality all summer receiving 0% Green, 93% Yellow, and 7% Red grades (Figure 2). This means that there was at least one bacteria exceedance each day it was sampled. While monitoring this site, the sampling crew often noted odors of sulfur and ammonia, which are indicative of pollution. Water quality at this site was not much better in 2019 earning only 13% Green grades throughout the summer (Appendices C & D). Las Virgenes did not meet the criteria to end up on the Freshwater Fails list, but it was the only site in L.A. County that did not earn a single Green grade.



# SAN GABRIEL RIVER WATERSHED

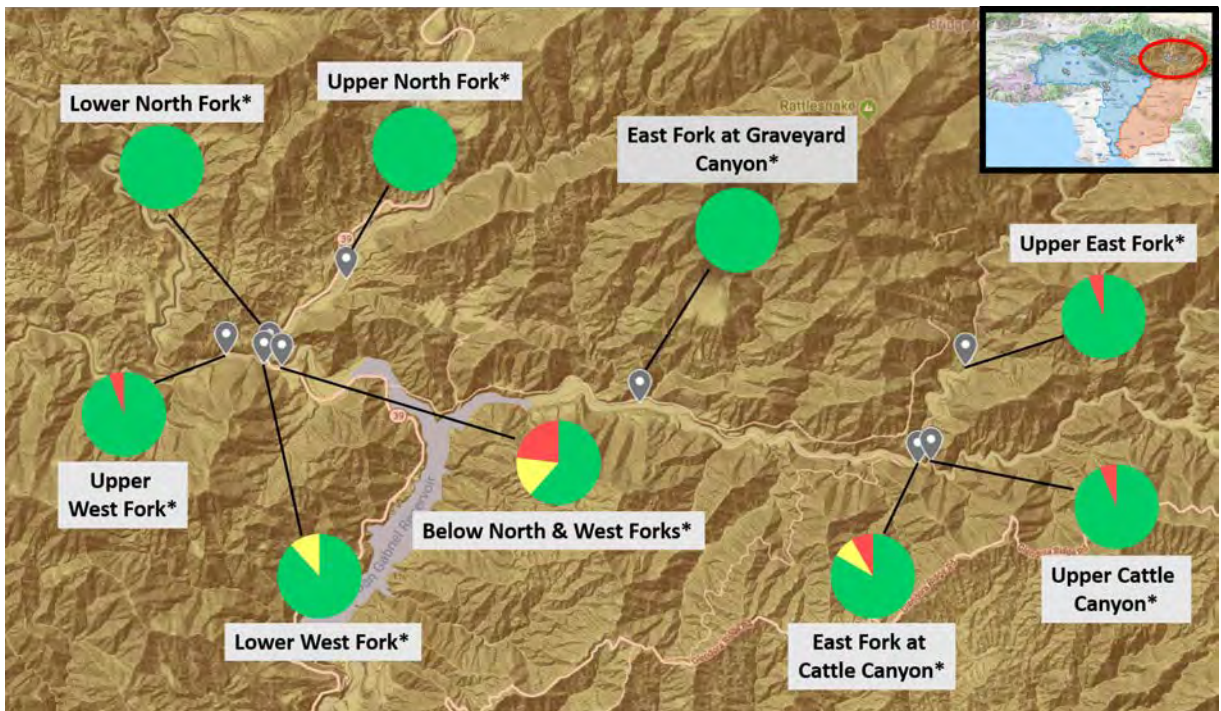


East Fork at Graveyard Canyon



## San Gabriel River Watershed Overview

The San Gabriel River Watershed contains nine sites that are commonly used for recreation within the Angeles National Forest. Water quality monitoring is conducted by SGRRMP, and includes testing for *E. coli* only. While there are many human visitors to these sites, the National Forest has little urban development upstream.



**Figure 3:** San Gabriel River Watershed grade percentages for the 2020 monitoring season. Sites marked with \* were graded using only *E. coli* data.

San Gabriel River East Fork at Graveyard Canyon earned 100% grades as well as a spot on the Honor Roll for a second consecutive year (Figure 3; Appendices C & D). The San Gabriel River Upper North Fork and Lower North Fork had equally stellar water quality in summer 2020 with 100% green grades and appearances on the Honor Roll. This is an improvement over last year when both sites received 94% Green grades.

The San Gabriel River Upper East Fork and Upper West Fork are making a third straight appearance on Honor Roll; both sites received 94% Green grades and 6% Red grades (Figure 3). However, both sites actually experienced a slight decrease in water quality from summer 2019 when both received 100% Green grades (Appendices C & D). It is clear that Upper East Fork and Upper West Fork have consistently excellent water quality, but it is concerning that they received some red grades this past summer.

The San Gabriel River below the North and West Forks site received 62% Green, 15% Yellow, and 23% Red grades in 2020, earning it a place on the Freshwater Fails list (Figure 3). This site also had the misfortune of being the first San Gabriel River Watershed site to end up on the Fails list. There was a large decrease in water quality at this swimming hole from 2019 when it received 83% Green grades and only 6% Red grades (Appendices C & D). The San Gabriel River below the North and West Forks site had water quality far below the average for the watershed (91% Green grades) and L.A. County as a whole (70% Green grades).

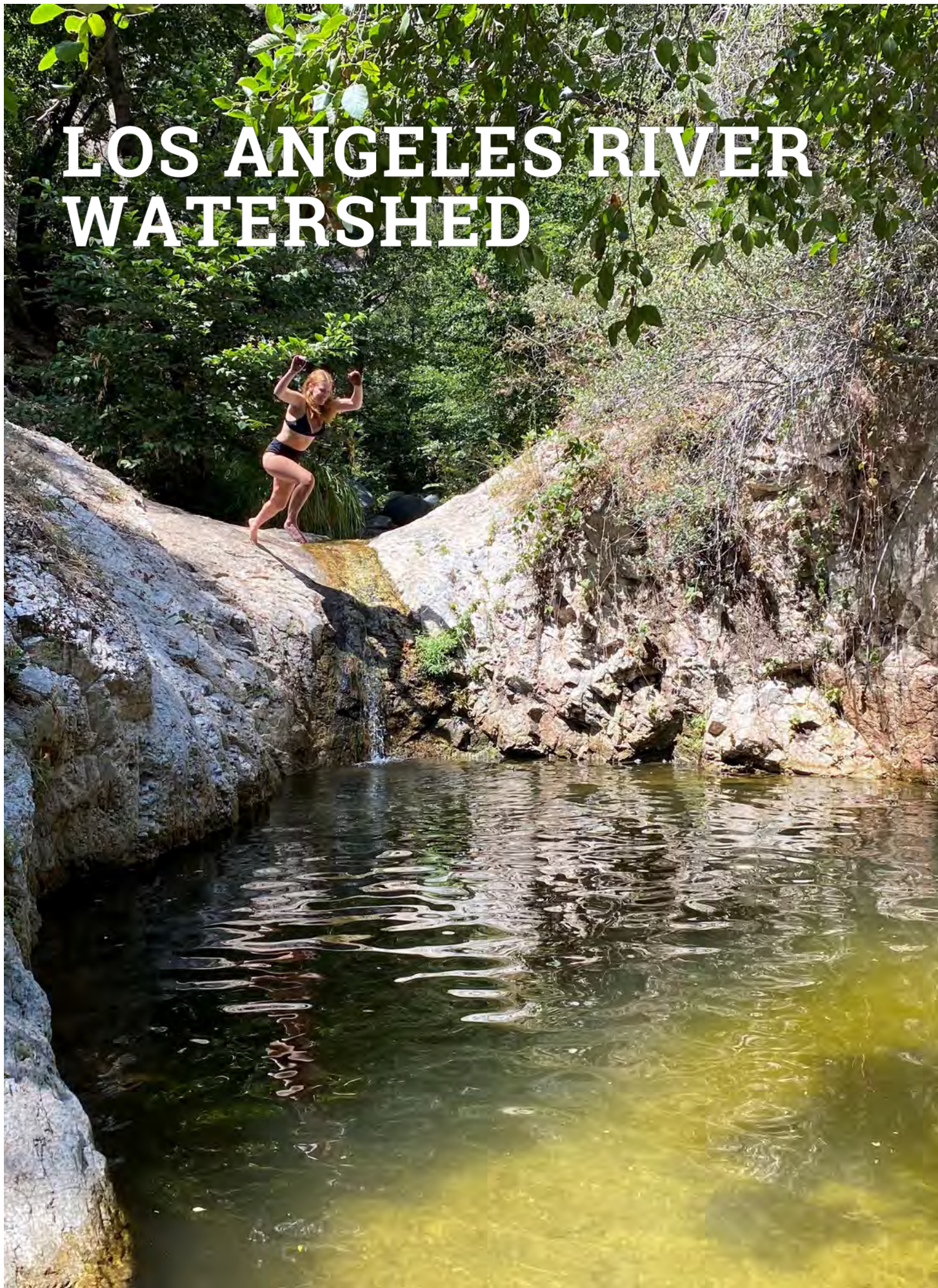
The San Gabriel River at Upper Cattle Canyon nearly made it onto the Honor Roll, needing just a few more Green grades. In summer 2020, this site received 93% Green grades and 7% Red grades (Figure 3). While that is an above average percentage of Green grades, it is a decrease from last year when 100% of its grades were Green and it secured a spot on the Honor Roll (Appendices C & D).

The San Gabriel River East Fork at Cattle Canyon earned 83% Green grades, 8% Yellow, and 8% Red grades during summer 2020 (Figure 3). Its percentage of Green grades increased from summer 2019 (78%), but unfortunately so did its proportion of Red grades (Appendices C & D). While this site's percentage of high marks is well above the County average of 70%, it is below the average for the watershed (91%).

The San Gabriel River Lower West Fork is another site that experienced a decrease in water quality from 2019 to 2020. Its grade makeup of 88% Green and 12% Yellow (Figure 3) is above average for the County (70%) and close to the average for the watershed (91%). However, it received 100% Green grades and a slot on the Honor Roll in summer 2019 (Appendices C & D).



# LOS ANGELES RIVER WATERSHED

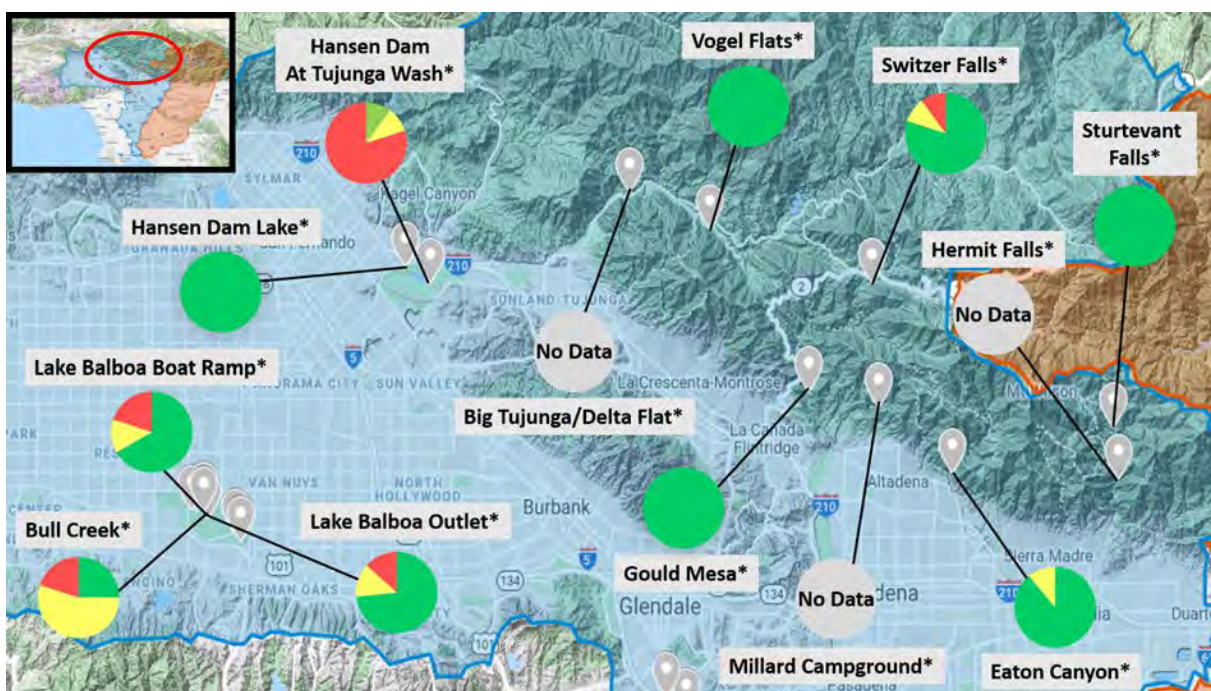


Downstream of Switzer Falls



## Upper Los Angeles River Watershed Overview

Eight swimming sites in the L.A. River Watershed were monitored by LARWMP. These sites are in tributaries of the L.A. River Main Channel, and many of them are within the Angeles National Forest. Grades for these sites are based only on *E. coli*. Hermit Falls was not sampled during summer 2020 because the narrow trail did not allow the sampling crew to remain a safe distance from other people (due to COVID-19). Big Tujunga Creek at Vogel Flats was sampled instead of Hermit Falls. Millard Campground, and the Big Tujunga Creek at Delta Flat site were not monitored for a second consecutive year. We urge LARWMP to monitor Millard Campground and Big Tujunga Creek at Delta Flat in 2021 as they are still popular recreation areas.



**Figure 4:** L.A. River Upper Watershed grade percentages for the 2020 monitoring season. Sites marked with \* were graded using only *E. coli* data.

Gould Mesa and Hansen Dam Lake both had outstanding water quality during the summer months of 2020. This is the second consecutive year these sites received 100% Green grades (Figure 4; Appendices C & D). Those exceptionally high marks earned both sites a spot on this year's Honor Roll.

Sturtevant Falls was another Honor Roll-level site in 2020 earning 100% Green grades (Figure 4). While this site has had excellent water quality the last 2 years, this is the first time appearing on the Honor Roll. The proportion of Green grades increased by 6 percentage points from 2019 to 2020 (Appendices C & D).



Big Tujunga Creek at Vogel Flats is making a splash in its inaugural year on the River Report Card. This site earned 100% Green grades and secured a place on the Honor Roll (Figure 4). Vogel Flats is located in Big Tujunga Creek upstream from Tujunga Wash at Hansen Dam. We hope this site continues to have excellent water quality.

Tujunga Wash at Hansen Dam has unfortunately made it onto the Freshwater Fails list for the third straight year. In summer 2020, it received 10% Green grades, 10% Yellow grades, and 80% Red grades (Figure 4). On top of being the number one Freshwater Fail, it also experienced the largest increase in percentage of red grades compared to the year prior with a 36 percentage point increase (Appendices C & D).

Lake Balboa Boat Ramp found itself on the Freshwater Fails list for a second straight year. It received 67% Green grades, 13% Yellow grades, and 20% Red grades in 2020 (Figure 4). In 2019, this site only received 33% Green grades so 2020 was an improvement (Appendices C & D). The percentage of Green grades Lake Balboa Boat Ramp earned is on par with the average for the Watershed (67%), but a little below the percentage across all L.A. County sites (70%).

Joining the Boat Ramp site on the Freshwater Fails list in 2020 is the Lake Balboa Outlet. 2019 was this site's first year in the River Report Card, and it started out strong with 80% Green grades and only 3% Red grades (Appendices C & D). However, the Lake Outlet's grades declined over the summer in 2020, receiving 73% Green grades, 13% Yellow grades, and 13% Red grades (Figure 4).

Switzer Falls earned 80% Green grades, 10% Yellow grades, and 10% Red grades during summer 2020 (Figure 4). While 80% Green grades is higher than average compared to the Watershed and County, its double digit percentage of Red grades earned it a spot on the Freshwater Fails list. This waterfall pool experienced a 14 percentage point decrease in Green grades from 2019 (Appendices C & D).

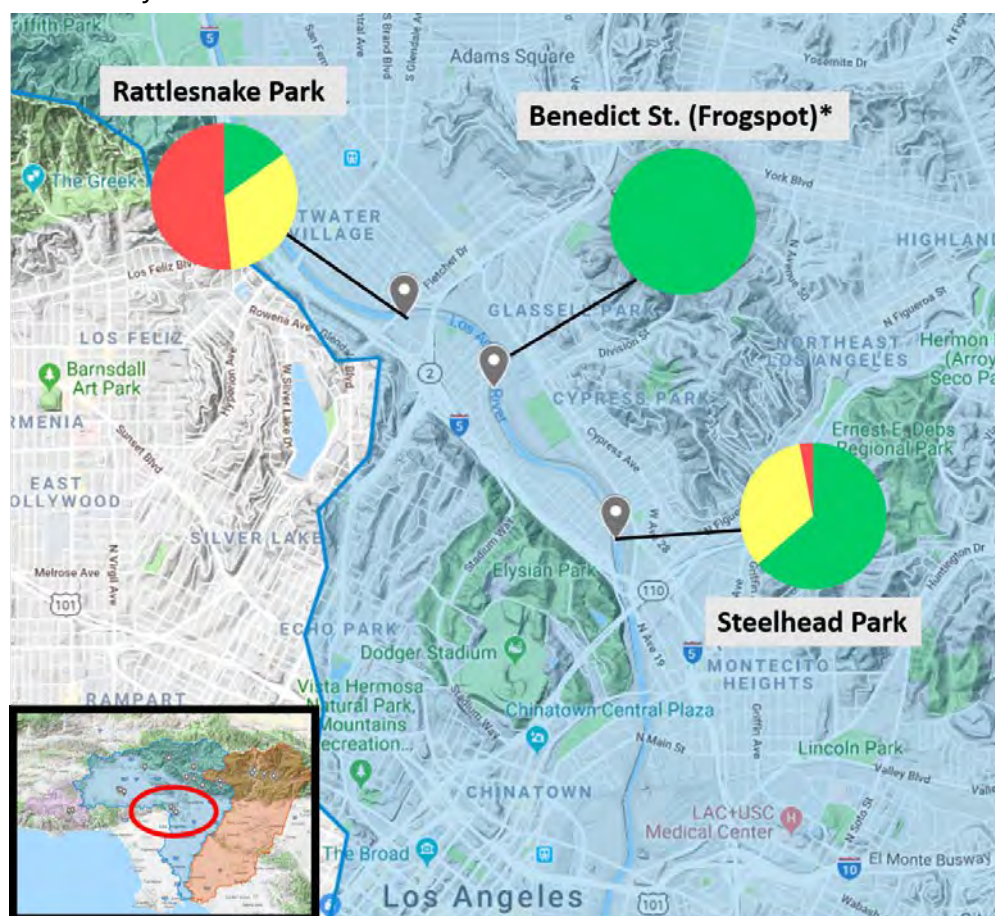
In 2020, Bull Creek earned 25% Green grades, 55% Yellow grades, and 20% Red grades (Figure 4), which is not too far off from what it earned last year (Appendices C & D). This site has appeared on the Freshwater Fails list for the second consecutive year, and it is the fifth site from this watershed on the list.

Eaton Canyon was the only site from the Watershed that did not end up on the Honor Roll or the Freshwater Fails list. This site had good water quality in 2020 earning 89% Green grades, 11% Yellow grades, and zero Red grades (Figure 4). Eaton Canyon experienced the largest increase in Green grades from 2019 to 2020 out of all sites in the Report Card (50 percentage points). The site also had a higher than average percentage of Green grades compared to the Watershed (67%) and all sites across L.A. County (70%).

## Los Angeles River Watershed Recreation Zones Overview

Heal the Bay monitored three sites in the Los Angeles River Watershed Recreation Zones; one site is in the Sepulveda Basin recreation zone and two sites are in the Elysian Valley recreation zone. These sites are kayak entry and exit locations, and were selected as locations where people were most likely to come into contact with the water. Heal the Bay did not have the capacity to sample The L.A. River at Benedict St. (formerly named Frogspot) in 2020, but we hope to begin sampling that location again in 2021.

The three Elysian Valley sites were also monitored by LASAN beginning in 2017. An additional three sites were monitored by LASAN in the Sepulveda Basin Recreation Zone in the San Fernando Valley as part of their monitoring for the Tillman Water Reclamation Facility. The grades for sites monitored by Heal the Bay are based on *E. coli* and *Enterococcus*, while the grades for the sites that are only monitored by LASAN are based solely on *E. coli*. For the sites that are monitored by Heal the Bay and LASAN, grades are based on both fecal indicator bacteria, however, samples collected by LASAN were tested only for *E. coli*.



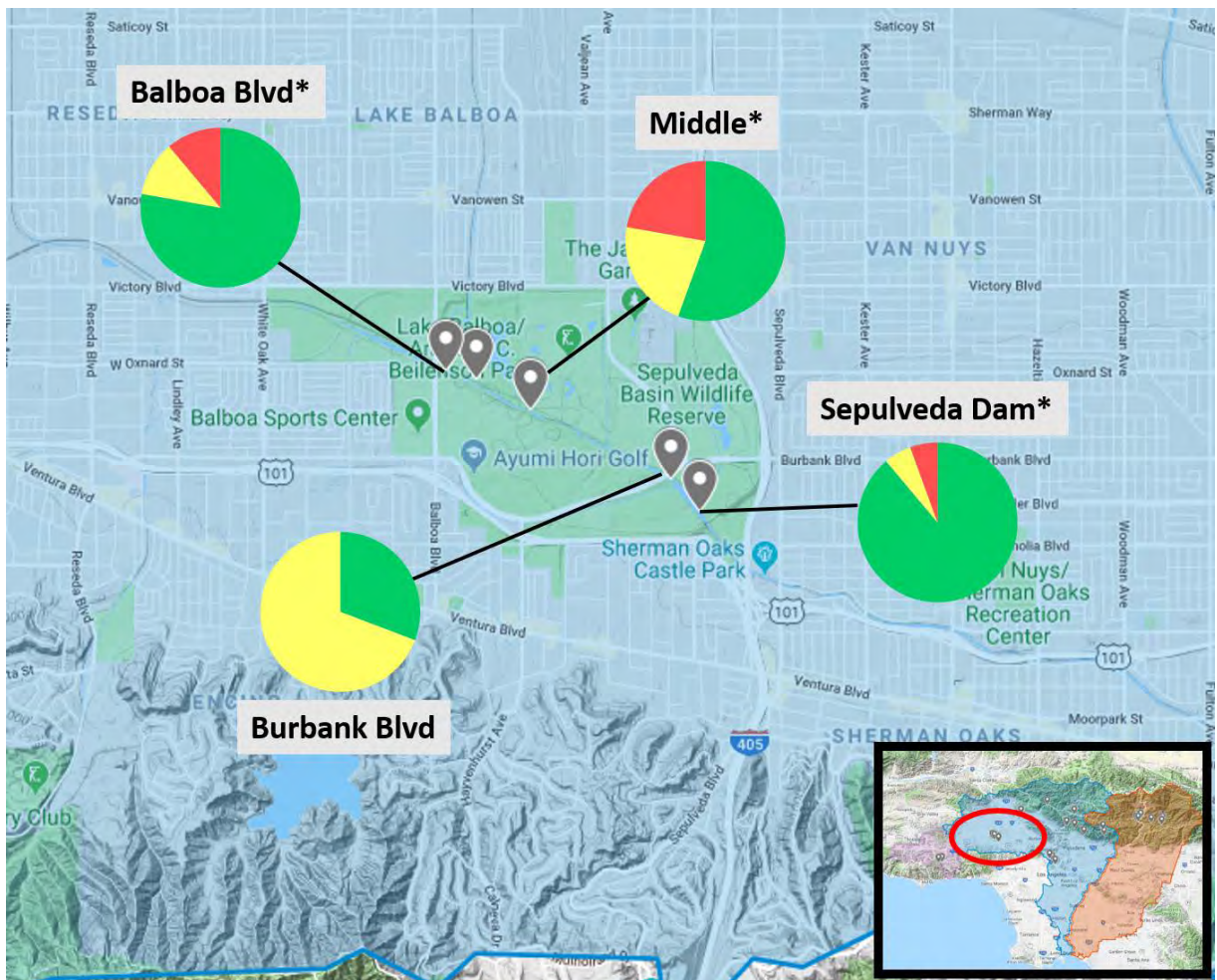
**Figure 5:** L.A. River Watershed Elysian Valley Recreation Zone grade percentages for the 2020 monitoring season. Water quality grades were calculated using *E. coli* and *Enterococcus* data. Sites marked with \* were graded using only *E. coli* data.

The L.A. River at Rattlesnake Park unfortunately had another year of poor water quality. During the summer months of 2020, only 15% of the grades assigned were Green (Figure 5). The proportion of Red grades was 52%, which made it the number two Freshwater Fail and marks its third consecutive appearance on the list. While Rattlesnake Park did have more Green grades than the year previous (9%), it exhibited an even larger increase in Red grades compared to 2019 (Appendices C & D).

The L.A. River at Benedict St. (formerly named Frogspot) had an outstanding year in terms of water quality. All the grades calculated for the summer of 2020 were Green earning it a place on the Honor Roll (Figure 5). This is a major improvement over 2019 when it only received 54% Green grades and was on the Freshwater Fails list (Appendices C & D). However, Heal the Bay did not monitor this site in 2020 so grades are only based on one FIB, which can have a large impact on the grades. See Figure 8 for more details.

The L.A. River at Steelhead Park had a somewhat mediocre year from a water quality perspective. During summer 2020, this site received 64% Green grades, 33% Yellow grades, and 3% Red grades (Figure 5). Water quality at Steelhead Park did not change substantially from 2019 (Appendices C & D). The proportion of Green grades issued in 2020 was above average for the Watershed (59%) but slightly below the average across the whole County (70%).





**Figure 6:** L.A. River Watershed Sepulveda Basin Recreation Zone grade percentages for the 2020 monitoring season. Sites marked with \* were graded using only *E. coli* data.

The Sepulveda Basin site at Balboa Blvd (upper kayak zone) received 78% Green, 11% Yellow, and 11% Red grades during the 2020 summer season (Figure 6). Even though this site had an above average percentage of green grades, it made it onto our Freshwater Fails list for having a high percentage of Red grades. Water quality at this location was better in 2019 when 88% of its grades were Green (Appendices C & D).

The L.A. River at the Middle of the Sepulveda Basin Recreation Zone had another year of lackluster water quality; it has regrettably been a Freshwater Fail for three straight years. In summer 2020, 56% of its grades were Green, 22% were Yellow, and 22% were Red (Figure 6). The percentage of Green grades is a decrease from 2019 when the site received high marks on 69% of monitoring days (Appendices C & D).

The L.A. River at Burbank Blvd. received 31% Green grades, 69% Yellow Grades, and zero Red grades over the summer (Figure 6). The proportion of Green grades in 2020 was 18 percentage points higher than in 2019 (Appendices C & D). While this is a good sign, the high percentage of Yellow grades in 2020 means there were still many bacteria



exceedances throughout the summer. This site has a much lower percentage of Green grades compared to all sites in the L.A. River Watershed Recreation Zones (59%) and all sites across L.A. County (70%).

L.A. River at Sepulveda Dam (downstream from the kayak zone) received 89% Green grades, 6% Yellow grades, and 6% Red grades in summer 2020 (Figure 6). The site saw an 11 percentage point increase in the proportion of Green grades assigned compared to 2019 (Appendices C & D). Sepulveda Dam also had an above average percentage of Green grades compared to all sites in the Watershed (59%) and all sites across the County (70%).

## **Los Angeles River Watershed Storm Drain Outfalls Overview**

Beginning in 2017, Heal the Bay investigated sources of bacterial pollution impacting the recreation zones in the L.A. River by monitoring storm drain outfalls in the Elysian Valley Recreation Zone (Appendix B). Typically, we monitor 10-15 storm drains in the Elysian Valley (Figure 7); however, we were only able to monitor one during summer 2020. The pandemic limited our ability to hire staff to conduct the storm drain monitoring. The one storm drain we monitored is located at Fletcher Ave. directly adjacent to Rattlesnake Park. We compared bacteria levels to the single sample thresholds in Table 1 even though these values are typically only used for ambient water quality and not outfalls. Although, it should be noted that ocean outfalls are monitored in California where storm drain runoff mixes with ocean water, and those sites must adhere to the state bacteria standards.

The Fletcher storm drain had a substantial amount of flow reaching the main channel of the L.A. River each day it was monitored. There were no rain events that can account for this flow so this water is likely originating from human activities. The water flowing from the storm drain was often filled with trash and smelled of sewage. *E. coli* levels exceeded standards in 85% of samples, and 7 of those samples exceeded standards by an order of magnitude (10 times the limit). *Enterococcus* standards were exceeded in 100% of samples collected, and the lowest concentration observed was 1112 cfu/100ml, which is 10 times over the single sample standard.

We were also able to collect one sample from an unnamed storm drain downstream from Fletcher. Bacteria levels in that sample were so high they were beyond the detection limits of our lab methods - the sample required more dilution than what our current protocol calls for. Unfortunately, we have been observing dangerously high levels of bacteria flowing into the L.A. River through these storm drains for several years (Appendices B and I).



**Figure 7:** Rates of fecal indicator bacteria exceedances at the Fletcher Drive storm drain outfall in the Elysian Valley Recreation Zone of the L.A. River. Samples were collected in Summer 2020. The pie charts show the percentage of samples that exceeded single sample thresholds in orange and the percentages of samples that did not exceed single sample thresholds in blue. Heal the Bay collected 13 samples from this storm drain during summer 2020. Storm drains sampled in previous years are also shown on the maps.

# Conclusions

## **Most water quality grades are Green in natural environments and Yellow or Red in developed areas.**

Across L.A. County, bacteria levels were generally below the regulatory standards on any given dry-weather day and there is a low risk of illness when coming into contact with the water. However, there is still a risk of getting sick from water contact 30% of the time during dry weather, which is high considering that there should be no human fecal matter in our freshwater bodies. To protect public health in these valuable recreational areas, government agencies must increase water quality monitoring and public notification while improving water quality at these sites (please see our River News section for more information)

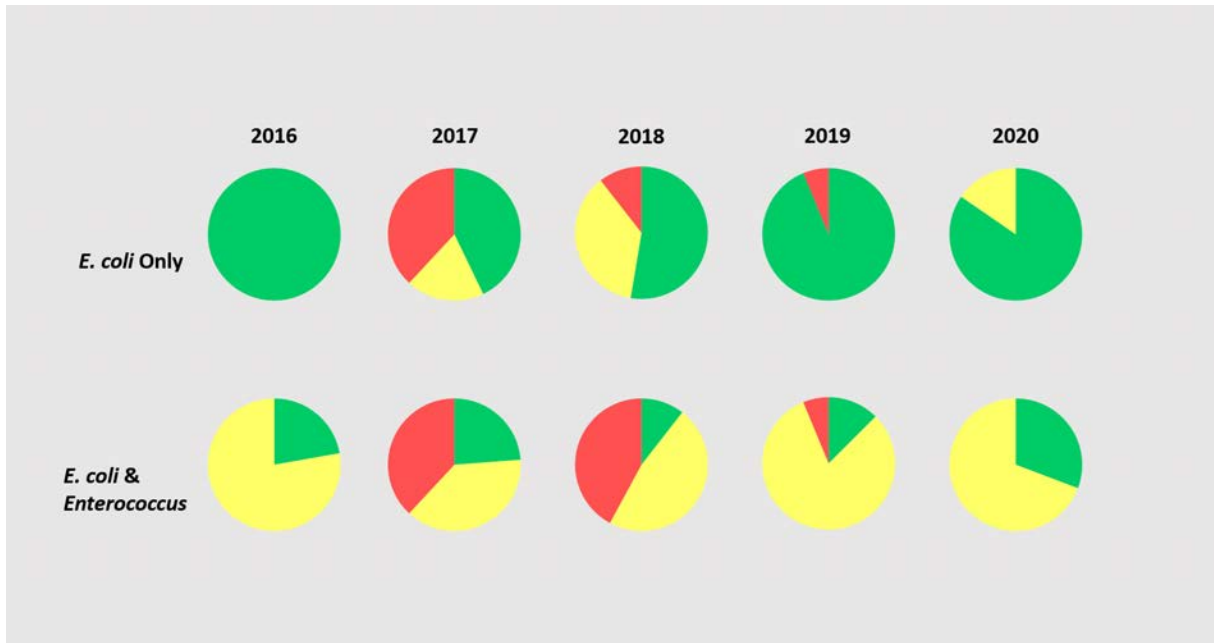
Areas with urban development tended to have lower grades than natural areas, and most sites on the Freshwater Fails list are in urban landscapes (Table 2). The sites in the L.A. River Watershed Recreation Zones are primarily surrounded by development and tend to have lower grades than the other sites in this report. This pattern is also supported by our storm drain outfall monitoring in the L.A. River Watershed Elysian Valley Recreation Zone. We have found that many storm drains in urban landscapes flow consistently in dry weather and contribute high levels of bacteria into the L.A. River, acting as sources of contamination for the Recreation Zones. A main source of bacteria pollution is from impaired sewage infrastructure in developed areas. Many of L.A. County's waterways and riparian corridors are used for shelter and basic needs of washing by people experiencing homelessness. Without access to clean water, sanitation, and health care this community can be disproportionately affected by poor water quality while simultaneously serving as a potential contributor. Providing shelter, clean water, and restrooms to the houseless community may help prevent some bacteria pollution in our waterways and help keep this community safe.

Sites in the San Gabriel River Watershed and a portion of the Upper L.A. River Watershed sites are in less developed areas and are less impacted by urban runoff. Therefore, sites in these watersheds tend to have better water quality. This is reflected in our Honor Roll where most sites on the list are in a natural landscape. In urban areas, water runoff flows over the hard, impervious surfaces like concrete and asphalt picking up contaminants before entering a storm drain or waterway. In natural landscapes, water runoff soaks into the soil and plant roots which filter contaminants before that water flows into rivers and streams.



## There are differences between *E. coli* and *Enterococcus*.

Grades that included *Enterococcus* as an indicator were generally lower than grades with only *E. coli*, and caution should be used when directly comparing grades for sites using different fecal indicator bacteria. For sites where we had both *Enterococcus* and *E. coli* data, we graded both indicators and found that grades worsened with both indicators compared to when we graded with *E. coli* only. Figure 8 provides an example of how grade composition changes at one monitoring location depending on the FIB used in the grade.



**Figure 8:** Differences in grade composition between *E. coli* only data and *E. coli* & *Enterococcus* combined data for the L.A. River at Burbank Blvd. for the past 5 summers.

The disparity in grade composition is likely due to the high exceedance rates of *Enterococcus* for both single sample and the geometric mean values. Despite this, eight of the ten sites on our Freshwater Fails list (including the number one Freshwater Fail) are only monitored for *E. coli*. Therefore, including *Enterococcus* in our grades is not the sole driver of poor water quality. This is also backed up by the strong trend we observe between land use and water quality.

There are five recreation sites where we have both *E. coli* and *Enterococcus* data. In 87% of the exceedance events recorded at these sites, *E. coli* and *Enterococcus* exceeded independently of one another; only 13% of bacteria exceedances happened simultaneously. Additionally, we have noticed that there may be geographic trends in *E. coli* and *Enterococcus* exceedances. Rattlesnake Park had the most *E. coli* exceedances independent from *Enterococcus* exceedances (23), and Las Virgenes had the most independent *Enterococcus* exceedances (22). Therefore, some sites might be more



prone to exceedances from one particular bacteria; this is a trend we have also observed at marine beaches. Monitoring for only one bacteria can put the public at unnecessary risk because harmful water quality captured by the other indicator may go undetected. Monitoring both indicator bacteria would also help ensure the public is protected in different geographic areas.

## River News

### **AB 1066**

For ocean beaches, the Beach Water Quality Act, Assembly Bill 411 (AB 411), passed in 1997 and created statewide standards for beach water quality, established a public notification and closure system, and mandated beach water quality monitoring at beaches that meet a certain criteria. Heal the Bay was a sponsor of AB 411, and its passage was a major achievement in protecting the health of California oceangoers. However, we need to extend those same protections to the communities who recreate in freshwater as well because many people get sick from unmonitored freshwater each year<sup>14</sup>.

Heal the Bay is now leading the effort to achieve health protections for freshwater visitors. We are thrilled to announce that Assembly Member Richard Bloom, in partnership with Heal the Bay, has introduced legislation that will begin to address this public health issue - Assembly Bill 1066 (AB 1066). This piece of legislation proposes to have the California Water Quality Monitoring Council<sup>15</sup> define and identify high-use freshwater recreation sites across the state as well as make recommendations for an appropriate monitoring program for these sites. This is not a monitoring and public notification mandate like AB 411, but it is a critical first step in achieving those health protections for freshwater. Heal the Bay will continue to support AB 1066, and we plan on introducing legislation requiring monitoring and public advisories for freshwater recreation areas in the near future.

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<sup>14</sup>

<https://www.cdc.gov/mmwr/volumes/69/wr/mm6925a3.htm#:~:text=Shigella%2C%20norovirus%2C%20STEC%2C%20and,vomit%20incident%20in%20the%20water>.

<sup>15</sup> [https://mywaterquality.ca.gov/monitoring\\_council/index2.html](https://mywaterquality.ca.gov/monitoring_council/index2.html)

## **Water Quality Improvement Work**

In addition to the River Report Card, Heal the Bay is actively working to keep pollution from entering our waterways in the first place. We are working on the following water quality improvement efforts throughout L.A. County:

### *L.A. River Revitalization*

The effort by L.A. County to revitalize the L.A. River has taken several major steps forward since the last River Report Card. The L.A. River Master Plan (LARMP) was released to the public in January 2021, and the County is currently reviewing the comments received from the public. Once the public's comments are addressed, the County will release a final draft. As members of the steering committee, Heal the Bay has been advocating for improved water quality and ecological health in the L.A. River through nature-based solutions. These are projects that use plants and greenspace to help remove contaminants from runoff to the River while simultaneously serving as habitat and parks.

### *MS4*

The California State Water Resources Control Board and the Regional Water Quality Control Board issue permits to government entities (cities, towns, counties, etc.) who operate both sewage and stormwater systems. The permits that specifically address the stormwater system are called Municipal Separate Storm Sewer System (MS4) Permits, and L.A. County has had an MS4 Permit since 1990. The permit system was created to help regulate the amount of stormwater pollution permittees were putting into the environment and ensure pollution discharges decreased over time. Unfortunately, there has been a lack of accountability in the MS4 Permit program which has allowed permittees to fall behind schedule in reducing pollution discharges. To change this trajectory, Heal the Bay launched the Take L.A. by Storm campaign in July 2020 to provide support for new environmental advocates to engage in the MS4 permit process and hold pollutant dischargers accountable. The permit is scheduled for renewal in July 2021, providing an opportunity for this change. We are continuing to urge the Regional Board to adopt a permit that is straightforward, m measurable, multi-benefit, actionable, reinvesting in communities, and transparent – a SMMART Permit! That is the type of permit that nearly 30 community based organizations and environmental groups asked for in December 2020, when the draft permit was released.

### *TMDL*

Under the Clean Water Act of 1972 some polluted waterbodies have limits on the amount of pollution that can be discharged into them. These limits are called Total Maximum Daily Loads (TMDL), and they are defined as the maximum amount of pollution that a waterbody can handle before people get sick or aquatic life is harmed. There are 59 TMDLs in the Los Angeles Region for various contaminants (i.e. trash, bacteria) polluting our rivers, lakes, and coastal waters. These TMDLs have deadlines that were set decades



ago with lengthy timelines that gave dischargers many years (in some cases *nearly 20 years*) to achieve these pollution limits. Unfortunately, permittees are far behind schedule in reducing pollution discharges, as Heal the Bay reported back in 2019 in our Stormwater Report<sup>16</sup>. Last year, the L.A. Regional Water Board confirmed this trend of very slow progress, reporting that only 6.6% of required pollution reduction projects were completed in the assessed areas. On March 11, 2021, the L.A. Regional Water Board voted to extend nine water quality deadlines for these assessed areas, which were set decades ago to improve water quality and protect the health of our communities and our ecosystems<sup>17</sup>. These TMDLs and their associated deadlines are the basis for water quality regulation and protection, and therefore are essential to the protection of public and environmental health. To ensure that everyone has access to clean and safe water as well as a healthy environment to live in, dischargers must be held accountable to reducing pollution discharges by the current deadlines without receiving additional extensions.

#### *Measure W: Safe, Clean Water Program*

The Los Angeles County Board of Supervisors approved over \$95 million in new investments under Measure W (the Safe, Clean Water Program)<sup>18</sup> in October 2020. The nine Watershed Area Steering Committees (WASCs), which each include five community representatives, have been working diligently all year to determine where and how funds should be spent. This first round of funding was approved for each WASC to hire Watershed Coordinators, and for the Program to fund 41 infrastructure projects, 15 technical assistance projects, and 4 scientific studies.

Heal the Bay, as a core team member of the OurWaterLA Coalition<sup>19</sup>, has been involved in this program since its inception. We have engaged with the public and met with County staff to help ensure that the goals of the Program are met, while our President and CEO oversaw progress as Co-Chair of the Regional Oversight Committee. Heal the Bay has been selected as the Watershed Coordinator for the South Santa Monica Bay and Central Santa Monica Bay. We will lead public engagement efforts in this area for the Safe, Clean Water Program, and coordinate across the County with all 12 Watershed Coordinators.

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<sup>16</sup> <https://healthebay.org/stormwater-report/>

<sup>17</sup>

[https://www.waterboards.ca.gov/losangeles/board\\_decisions/basin\\_plan\\_amendments/technical\\_documents/bpa\\_137\\_R21-001\\_td.html](https://www.waterboards.ca.gov/losangeles/board_decisions/basin_plan_amendments/technical_documents/bpa_137_R21-001_td.html)

<sup>18</sup> <https://safecleanwaterla.org/>

<sup>19</sup> <https://ourwaterla.org/>

## River Report Card Program Updates

### *Methodology Update*

Our current method relies on binary assessments of water quality data where each parameter either exceeds or does not exceed an objective. A sample that is slightly higher than the objective is treated the same as a sample that is much higher than the objective. Since a higher concentration of bacteria equates to poorer water quality, we plan on revising our methods so our grades more accurately convey the range of illness risks. We also plan to consider weighting the different parameters and utilize letter grades, similar to our Beach Report Card. The water quality standards used in our grading method also need to be reassessed. We will form a technical advisory committee that will provide guidance on how to develop the new methodology. We plan to implement the new methodology by Summer 2022.

## Staying Safe

The Centers for Disease Control and Prevention (CDC) have not found evidence that COVID-19 can spread through recreational water<sup>20</sup>. However, there are still some COVID-19 and fecal pollution safety precautions to take before heading out. Heal the Bay has the following recommendations for the public.

1. Get a COVID-19 vaccine as soon as possible<sup>21</sup>.
2. While outside, remain at least 6 feet away from people not from your household at all times. If social distancing is not possible, wear a face mask. Follow all local pandemic-related regulations<sup>22</sup>.
3. Check Heal the Bay's River Report Card before visiting your favorite recreation area. Please be advised that not all recreation areas are monitored for water quality. If you don't see a grade for your location on our website, check the local health authority's website, Swim Guide<sup>23</sup> or the Blue Water Task Force<sup>24</sup>. If you still can't find water quality information, ensure you avoid swimming near any storm drains.
4. If the water quality is shown to be poor or unknown, consider choosing a site with good water quality.

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<sup>20</sup> <https://www.cdc.gov/healthywater/swimming/index.html>

<sup>21</sup> <https://www.cdc.gov/healthywater/swimming/index.html>

<sup>22</sup> <https://www.cdc.gov/coronavirus/2019-ncov/daily-life-coping/visitors.html>

<sup>23</sup> <https://www.theswimguide.org/>

<sup>24</sup> <https://bwtf.surfrider.org/>



5. If poor water quality is unavoidable, limit contact with the water, refrain from submerging your head, avoid hand-to-face water contact, and wash off after contact using soap and water.
6. Avoid entering the water after significant rainfall in the last 72 hours as it poses a flood risk and significantly lowers water quality to harmful levels.
7. People who are immunocompromised or anyone with an open wound should avoid entering the water, particularly when water quality is poor.
8. Follow all posted signage at recreation sites. Please note that swimming is prohibited in the L.A. River main channel.

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## 2020 Annual River Report Card

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## Appendices

Dig deeper into the River Report Card by accessing our appendices. Available at:  
<https://healthebay.org/wp-content/uploads/2021/06/RRC-2020-All-Appendices.pdf>