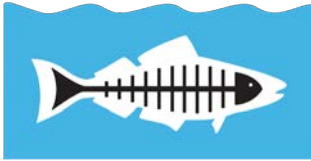


Heal the Bay

HEAL THE BAY
2018-2019

BEACH REPORT CARD



Heal the Bay

HEAL THE BAY
2018-2019

BEACH REPORT CARD

Heal the Bay is an environmental non-profit dedicated to making the coastal waters and watersheds of Greater Los Angeles safe, healthy and clean. To fulfill our mission, we use science, education, community action and advocacy.

The Beach Report Card program is funded by grants from



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The Beach Report Card is a service mark of Heal the Bay.

We at Heal the Bay believe the public has the right to know the water quality at their beaches.
We are proud to provide West Coast residents and visitors with this information in an easy-to-understand format.
We hope beachgoers will use this information to make the decisions necessary to protect their health.

the beach report card

2018-2019

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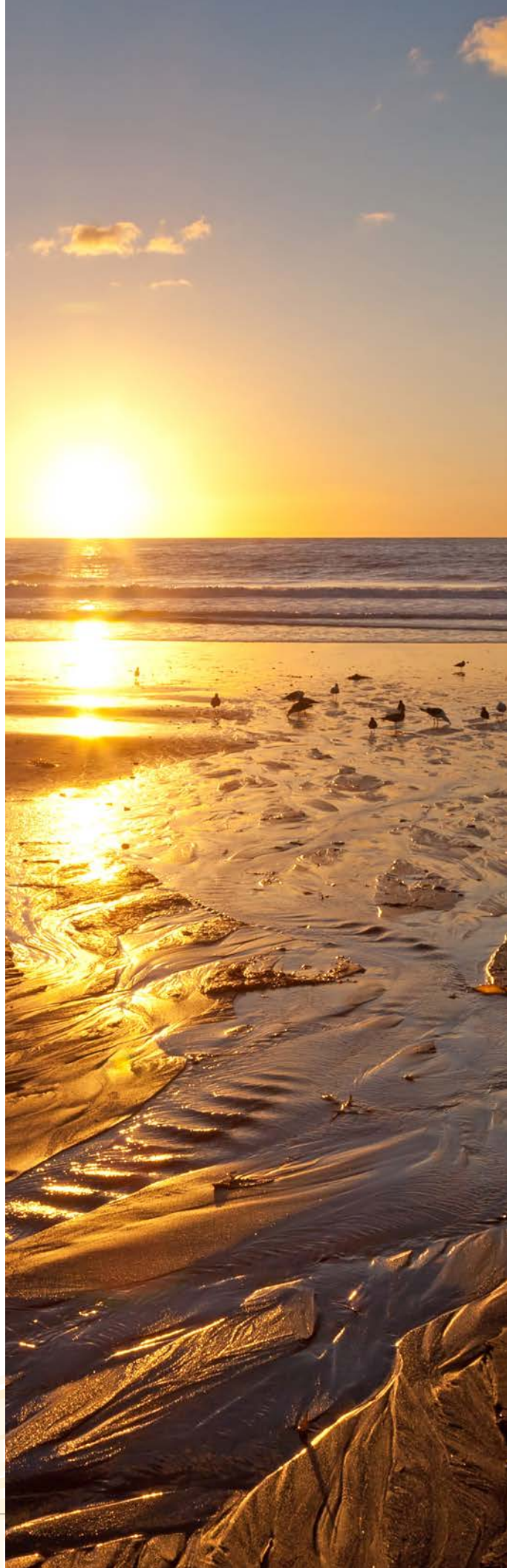
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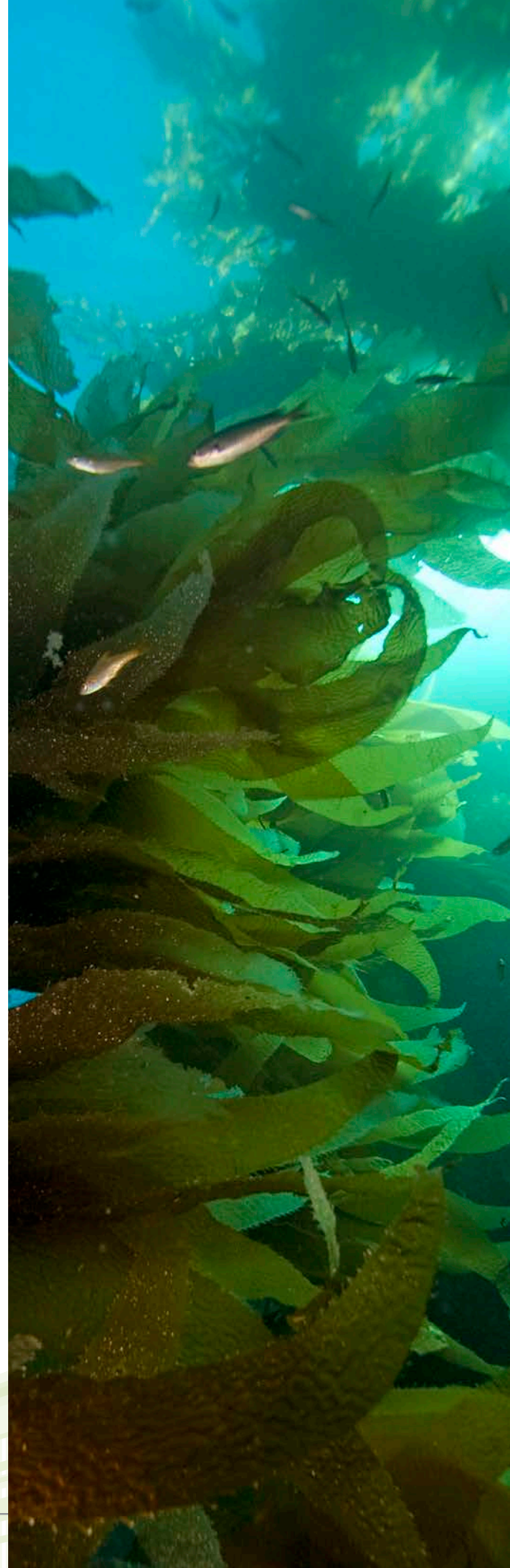
executive summary

2018-2019

California beaches had excellent water quality during the summer months of 2018. Out of almost 500 beaches across the state, 94% received A or B grades for the summer. This is great news for beachgoers.

However, the winter months of 2018-2019 saw an abnormally high amount of rainfall, which did not bode well for water quality. Rain washes pollutants and contaminants into the ocean thus lowering water quality. The inordinate amount of rain during the winter months led to lower than average Wet Weather Grades, and the lingering effects of the rain may account for the lower Winter Dry Grades. Increased rainfall is also why we saw a decrease in the total number of beaches receiving perfect scores on our Honor Roll list this year.

- San Clemente Pier holds the number one Beach Bummer spot this year and is one of two Orange County beaches to make the list; Monarch Beach at Salt Creek holds the number six spot.
- Clam Beach at Strawberry Creek in Humboldt County is number two on the list marking its sixth consecutive appearance as a Beach Bummer.



Executive Summary (continued)

- San Mateo County has two beaches on the Bummer list: Linda Mar at San Pedro Creek (number three) and Aquatic Park (number 10). This is an improvement from last year, which saw four San Mateo County Beach Bumpers.
- The two Los Angeles County Beach Bumpers came as no surprise as Marina Del Rey Mother's Beach (number seven) and Cabrillo Beach Harborside (number eight) have been mainstays on the list over the years. Long Beach City Beach at Coronado Avenue is making its first appearance on the list at number four.
- Cowell Beach has been no stranger to the Beach Bummer list taking the number five spot this year.
- Another newcomer to the Bummer list is Keller Beach South Beach in Contra Costa County, which is number nine on the list.

As in the past, many grades could not be calculated for the state of Oregon this year because the Oregon Department of Environmental Quality did not meet our sampling frequency standards. To receive a grade a beach must be sampled for 75% of

the weeks in a season. Beaches in only three counties were sampled only enough to receive grades. Summer Dry Grades in Oregon were good with 78% of the beaches receiving A and B grades.

All coastal counties in Washington had beaches sampled enough to be assigned grades. Summer Dry Grades in Washington were excellent with 97% of the beaches receiving A and B grades. Oregon and Washington rely heavily on the U.S. Environmental Protection Agency's (U.S. EPA) Beaches Environmental Assessment and Coastal Health Act (BEACH Act) for ocean beach water quality monitoring funding. Unfortunately, the allocation of funds has not increased substantially since its adoption in 2000.

As the effects of climate change continue to take hold, patterns in rainfall and wildfires are expected to change, which can have immense impacts on water quality. California experienced a disproportionate amount of rain and wildfires over the last year, which brought below average Wet Weather Grades in 11 out of 17 Coastal Counties and far below average grades at Malibu beaches where the Woolsey Fire burned. It is crucial that government bodies work to improve their water quality monitoring programs and invest in projects and technology that will improve water quality

to keep the public safe in a changing environment.

In the face of climate change, predicting environmental conditions will become increasingly important as initiatives are implemented that protect human health and the natural environment. Heal the Bay is leading innovation in predictive water quality modeling with our NowCast program. NowCast accurately predicts daily water quality at over 20 beaches in California, and we will continue to expand our program to include more locations to help keep more beachgoers safe.



Luke Ginger
Heal the Bay
Water Quality Specialist



THE 2018-19 BEACH REPORT CARD

Since its inception over 25 years ago, the Beach Report Card (BRC) has provided beachgoers with reliable and easy-to-understand information about water quality at the beach. The BRC collects shoreline monitoring data from government agencies and issues grades for beaches across California, Oregon, and Washington. The better the grade a beach receives, the lower the risk of illness to beachgoers.

Millions of people flock to beaches every year to enjoy the ocean, and fortunately, water quality at West Coast beaches is good 94% of the time during summer months when beaches are most visited. Good water quality at the beach is achieved and maintained through the efforts of nonprofit organizations, federal and local governments, and concerned communities. There are still big improvements to be made. Approximately one million ocean beachgoers contract illnesses each year in Los Angeles and Orange Counties with total healthcare costs of \$20 to



Introduction (continued)

\$50 million¹. Nationwide, 90 million people contract illnesses from water recreation annually at a healthcare cost of \$3 billion². The public must have accessible and easy-to-understand information about water quality so they can make informed decisions about where and when to get in the water.

The BRC uses an intuitive A-to-F letter grading system to provide water quality information to the public. This annual report issues cumulative grades for beaches on the West Coast, and provides information about other important water quality events that occurred in the past year such as sewage spills, rainfall, and wildfires.

Grades are based on routine water quality sampling conducted by County health agencies, State agencies, sanitation departments, and dischargers on the West Coast. For recreational health protection, water samples are analyzed for three fecal indicator bacteria (FIB): total coliform, fecal coliform (*E. coli*), and *Enterococcus* species. These FIB, in significant quantities, indicate the presence of harmful pathogens in the water.

This report assigns three separate grades for each beach:

**SUMMER DRY WEATHER****April – October 2018**

This is the prime recreation season in California when beaches are most active. County governments are required to sample during this period according to the California Beach Bathing Water Quality Standards, as defined in Assembly Bill 411 (AB411). Samples taken during wet weather were not used for these grades.

**WINTER DRY WEATHER****Nov. 2018 – March 2019**

AB411 does not mandate water quality monitoring for recreational purposes during winter months leading many Counties in California to halt water quality monitoring in the winter season. Additionally, recreation generally decreases at beaches during the winter. Therefore, the winter season is graded separately. Samples taken during wet weather were not used for these grades.

**WET WEATHER CONDITIONS****April 2018 – March 2019**

Rain flushes contaminants and pollution, including bacteria from our

streets directly into the ocean through storm drains, rivers and streams, and over impermeable surfaces such as concrete. This untreated stormwater decreases water quality by increasing the amount of pathogens in the ocean to potentially unsafe levels. Wet Weather Grades consist of samples taken during or three days following a rain event greater than 0.10 inches. These grades are separate from dry weather grades, so we can analyze water quality impacts that are not attributed to rainfall.

Beachgoers who recreate at beaches after a rain event have an increased risk of contracting ear infections, eye infections, upper respiratory infections, skin rashes, and gastrointestinal illness^{3,4,5}. Swimmers are advised to stay out of the water for a minimum of three days following a significant rain event (0.1 inches or greater)⁶. Local governments across the West Coast must continue to invest in stormwater capture projects to prevent untreated stormwater from polluting the ocean while serving as a water source and alleviating stressed water supplies in times of drought.



¹ Given, S., L. H. Pendleton, A. B. Boehm. 2006. Regional public health cost estimates of contaminated coastal waters: a case study of gastroenteritis at Southern California beaches. *Environmental Science & Technology* 40: 4851-4858. | ² 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 | ³ Haile, R.W., J.S. Witte, M. Gold, R. Cressey, C. McGee, R.C. Millikan, A. Glasser, N. Harawa, C. Ervin, P. Harmon, J. Harper, J. Dermand, J. Alamillo, K. Barrett, M. Nides, G. Wang. The health effects of swimming in ocean water contaminated by storm drain runoff. 1999. *Epidemiology* Vol. 10 No.4 355-363. | ⁴ Colford, J.M., T.J. Wade, K.C. Schiff, C.C. Wright, J.F. Griffith, S.K. Sandhu, S. Burns, M. Sobsey, G. Lovelace, S.B. Weisberg. 2007. Water quality indicators and the risk of illness at beaches with nonpoint sources of fecal contamination. *Epidemiology* Vol. 10 No. 1 27-35. | ⁵ Arnold, B.F., K.C. Schiff, A. Ercumen, J. Benjamin-Chung, J.A. Steele, J.F. Griffith, S.J. Steinberg, P. Smith, C.D. McGee, R. Wilson, C. Nelsen, S.B. Weisberg, J.M. Colford. 2017. Acute illness among surfers after exposure to seawater in dry-and wet-weather conditions. *American Journal of Epidemiology* Vol. 186 No. 7 866-875. | ⁶ <https://www.ioes.ucla.edu/wp-content/uploads/2013/healthbayproject-1.pdf>

WEST COAST SUMMARY





Abalone Cove, Rancho Palos Verdes

OVERVIEW OF CALIFORNIA BEACH WATER QUALITY

Summer Dry Grades were excellent across the State this year but lower than average with 94% of California beaches receiving A and B grades. Winter Dry Grades were good but below average with 87% of the beaches receiving A and B grades. Wet Weather Grades for the past year were far below average with only 54% of the beaches receiving A and B grades.

Note: All averages below refer to the five-year-average unless otherwise indicated.

Coastal Counties in California received abnormally high amounts of rain over the last year. All Counties except Del Norte received above average rainfall, which is likely why 11 out of 17 Coastal Counties had lower than average Wet Weather Grades this year. While rain can alleviate drought conditions, more rain means that more pollutants, includ-

ing bacteria, are being flushed into the ocean.

NORTHERN CALIFORNIA OVERVIEW

Northern California consists of all counties from Marin County to Del Norte County.

Summer Dry Grades in this region

were excellent with 93% of its beaches receiving A and B grades.

Wet Weather Grades were good but below average with only 81% of Northern California beaches receiving A and B grades.

No Counties in Northern California monitored beach water quality frequently enough during the 2018-

West Coast Overview (continued)

2019 winter months.

The Northern California region received 207 inches of rain, which was the highest compared to the rest of the State and 9% higher than the historical average of 191 inches. The increased rainfall is likely why Wet Weather Grades were below average. However, most of the rain fell during the winter months when the beaches are not monitored. As a result, the full impact of the increased rainfall is unknown.

CENTRAL CALIFORNIA OVERVIEW

Central California consists of all counties from San Luis Obispo County to San Francisco County.

Summer Dry Grades were excellent and slightly above average with 92% of its beaches receiving A and B grades.

Winter Dry Grades were superb and higher than average with 100% of the beaches receiving A and B grades.

Wet Weather Grades were poor and considerably lower this year with only 53% receiving A and B grades compared to the five year average of 65%.

A total of 167 inches of rain fell in Central California counties, which is 17% higher than the historical average of 142 inches. The increased rainfall is most likely the reason behind the lower than average Wet Weather Grades.

SOUTHERN CALIFORNIA OVERVIEW

Southern California consists of all counties from San Diego County to Santa Barbara County.

Summer Dry Grades were excellent but lower than average with 95%

of the beaches receiving A and B grades.

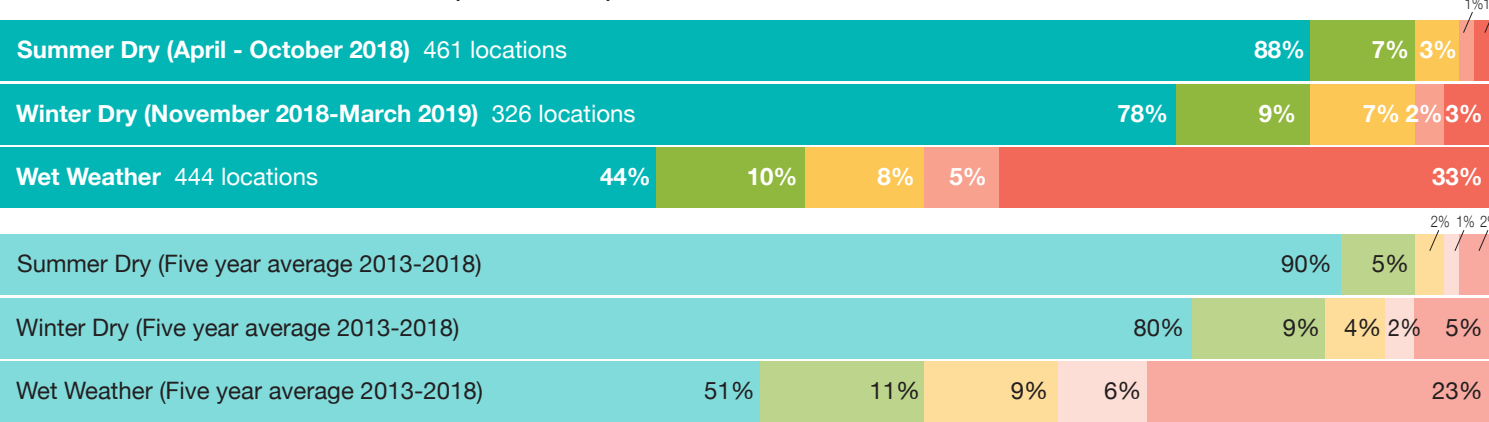
Winter Dry Grades were good but lower than average with only 85% of the beaches receiving A and B grades.

Wet Weather Grades were poor and lower than average with only 50% of the beaches receiving A and B grades.

Southern California received a total of 76 inches of rain, which is 43% higher than the historical average of 53 inches. The increased rainfall most likely caused a decrease in Wet Weather Grades and the lingering effects of the rain may have had a negative impact on the Winter Dry Grades since most rain fell during the winter months.



FIGURE 2-1: CALIFORNIA GRADES (STATEWIDE)



Key: A B C D F

II. WEST COAST SUMMARY

OVERVIEW

FIGURE 2-2: NORTHERN CALIFORNIA GRADES

Key: A B C D F

Combined grades for Del Norte, Humboldt, Mendocino, Sonoma and Marin Counties

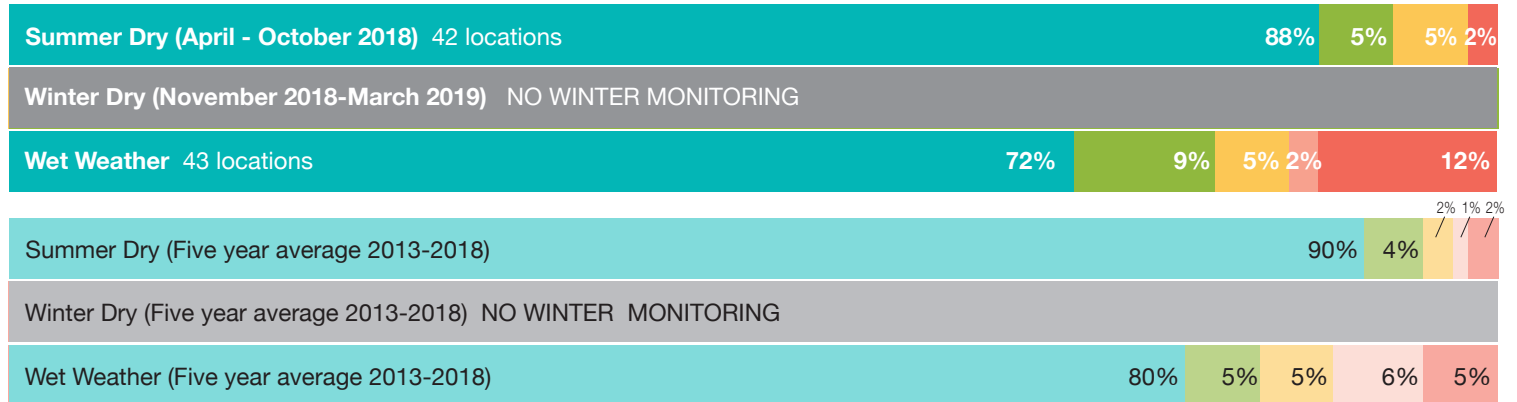


FIGURE 2-3: CENTRAL CALIFORNIA GRADES

Combined grades for San Francisco, San Mateo, Santa Cruz, Monterey and San Luis Obispo Counties

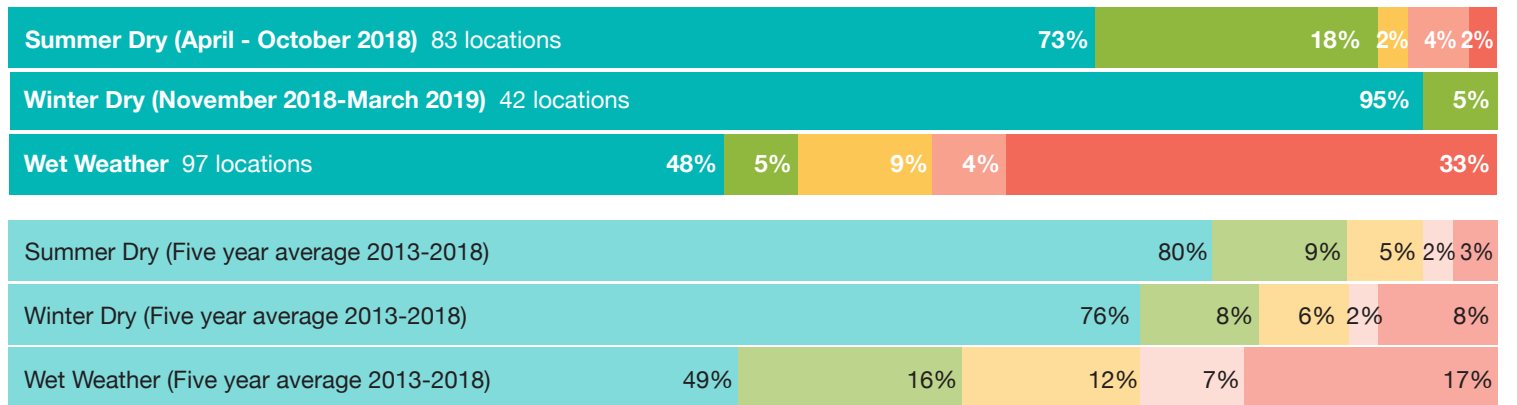
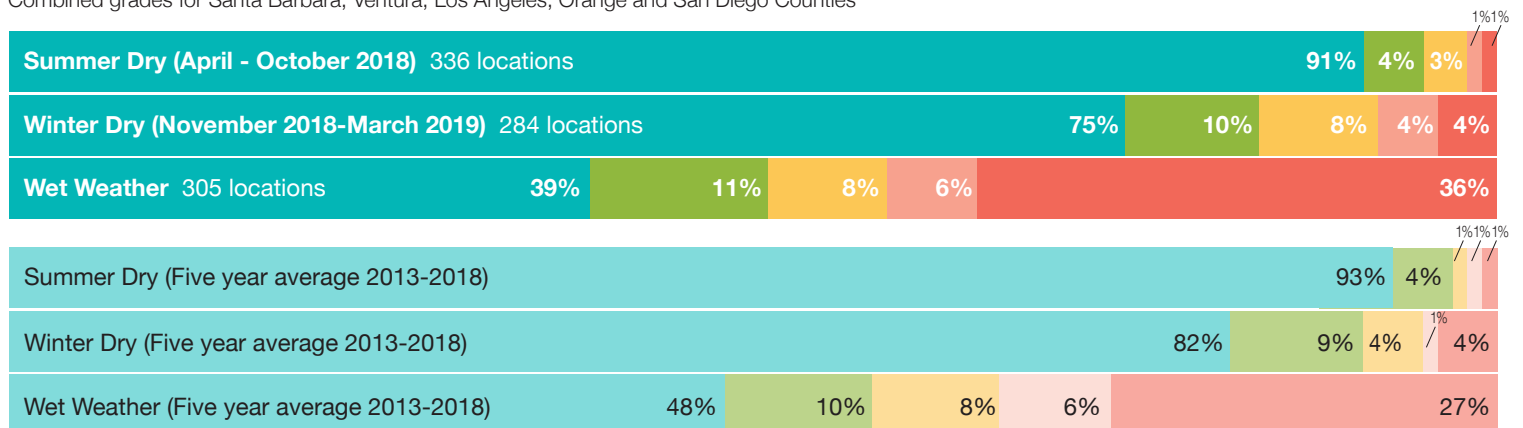


FIGURE 2-4: SOUTHERN CALIFORNIA GRADES

Combined grades for Santa Barbara, Ventura, Los Angeles, Orange and San Diego Counties





Cabrillo Beach (ocean side)

BEACH REPORT CARD: HONOR ROLL

To earn a spot on the Honor Roll, a beach must be monitored weekly all year, and the beach must receive an A+ for all seasons and weather conditions (Summer Dry, Winter Dry, Wet Weather). This year, 33 of the 500 monitored beaches made it on the Honor Roll, which is lower than last year (37) likely due to the higher than average rainfall. The Honor Roll is typically dominated by Southern California beaches because many Northern and Central California Counties do not monitor beach water quality year-round.

San Diego County had the most beaches on the Honor Roll with 12. Encinitas and Carlsbad beaches have been a mainstay on the Honor Roll for the past decade.

Orange County had 10 beaches on the Honor Roll. All four of the Newport beaches from last year's Honor Roll have fallen off the list as well as three Dana Point beaches.

Los Angeles County had two beaches on the Honor Roll: Cabrillo Beach (oceanside) and Las Tunas Beach at Pena Creek. Unfortunately, this is a decrease from last year when eight L.A. County beaches made the Honor Roll. Three of the four Malibu beaches fell off the list, as well as all three Palos Verdes beaches from last year's list.

FIGURE 2-6

Honor Roll (continued)

Ventura County had three beaches on the Honor Roll this year: Silverstrand at Santa Paula Dr., Silverstrand at Sawtelle Ave., and Oil Piers Beach.

San Luis Obispo County added Cayucos State Beach (downcoast of the pier) and Sewers at Silver Shoals Dr. to the Honor Roll this year along with Morro Bay City Beach (north of parking lot) and San Simeon Beach at Pico Ave., which were on the list last year.

Natural Bridges State Beach in **Santa Cruz County** and Guadalupe Dunes in **Santa Barbara County** made the Honor Roll.

Three of the beaches on the Honor Roll are enclosed beaches, which is an increase from last year when only one enclosed beach made the list.

honor roll 2018-2019



CITY	COUNTY	MONITORING LOCATION
Santa Cruz	Santa Cruz	Natural Bridges State Beach
Pismo Beach	SLO	Sewers at Silver Shoals Dr.
Cayucos	SLO	downcoast of the pier
San Simeon	SLO	at Pico Avenue
Morro Bay	SLO	City Beach, 75 ft N of parking lot
Guadalupe	Santa Barbara	Guadalupe Dunes
Channel Is. Harbor	Ventura	At Santa Paula Dr. (south of drain)
Channel Is. Harbor	Ventura	at Sawtelle Ave. (south of drain)
Ventura	Ventura	Oil Piers Beach - south of drain
San Pedro	Los Angeles	Cabrillo Beach, ocean side
Malibu	Los Angeles	Las Tunas County Beach at Pena Creek
Dana Point	Orange	Harbor Youth Dock
Huntington Harbor	Orange	Trinidad Lane Beach
Huntington Harbor	Orange	Coral Cay Beach
Corona del Mar	Orange	El Moro Beach
Laguna Beach	Orange	Victoria Beach
Dana Point	Orange	South Capistrano Bay Comm. Beach
Dana Point	Orange	Dana Strands Beach (AWMA)
San Clemente	Orange	Linda Lane Beach
San Clemente	Orange	North beach at Avenida Pico
San Clemente	Orange	at Avenida Calafia
Oceanside	San Diego	projection of Cassidy Street
Carlsbad	San Diego	projection of Poinsettia Lane
Carlsbad	San Diego	projection of Ponto Drive
Carlsbad	San Diego	Encina Creek outlet
Carlsbad	San Diego	projection of Palomar Airport Rd.
Carlsbad	San Diego	projection of Cerezo Drive
Solana Beach	San Diego	Tide Beach Park (proj. Solana Vista Dr.)
Cardiff	San Diego	Seaside State Park
Cardiff	San Diego	Las Olas (100 yds. S of Charthouse)
Cardiff	San Diego	Charthouse parking (S. of Kilkeny)
Encinitas	San Diego	San Elijo State Park (proj. Liverpool Dr.)
Encinitas	San Diego	San Elijo State Park, N. end of stairs

Honor Roll (continued)

BEACH IMPROVEMENT SPOTLIGHT: COLORADO LAGOON NORTH, L.A. COUNTY



Every year, we shine a spotlight on one beach that has shown a large improvement in water

quality. We do this to highlight successful water quality management practices. Colorado Lagoon was a chronic Beach Bummer prior to 2012. Since then, its grades have greatly improved. This year, Colorado Lagoon North received an A grade for Summer Dry, C for Winter Dry, and an F grade for Wet Weather.

Steps Taken to Improve the Beach:

Restoration projects have been ongoing for the past decade and consist of two phases:

Phase 1

Bioswales were installed to catch runoff from the neighboring golf course before it could enter the la-

goon. Dry weather storm flows were diverted into the sewer system where they can be treated. A trash separation device was installed in the storm drain to catch trash before it could enter the lagoon. Phase 1 also removed thousands of cubic yards of polluted sediment. Phase 1 was completed in 2012, which coincides with Colorado Lagoon's last appearance as a Beach Bummer in 2011.

Phase 2

This phase is ongoing and will consist of increasing the connection between the lagoon and the ocean. This will allow for more water circulation in the lagoon, which has been shown to impact water quality (see beach type analysis). This phase will also restore the wetland habitats throughout the lagoon and remove invasive species.



TABLE 2-5: HISTORICAL GRADES OF COLORADO LAGOON

	2018-19			2017-18			2016-17			2015-16			2014-15			2013-14		
	Summer Dry	Winter Dry	Wet Weather	Summer Dry	Winter Dry	Wet Weather	Summer Dry	Winter Dry	Wet Weather	Summer Dry	Winter Dry	Wet Weather	Summer Dry	Winter Dry	Wet Weather	Summer Dry	Winter Dry	Wet Weather
Colorado Lagoon - North	A	B	C	A	B	D	n/a	n/a	n/a	A	A	F	A+	A+	F	A	A+	F
Colorado Lagoon - South	A	C	F	A	B	F	n/a	n/a	n/a	A	A+	F	A+	A+	F	A	A	F

II. WEST COAST SUMMARY

HONOR ROLL




TABLE 2-6: 2018-19 HONOR ROLL BEACHES AND HISTORICAL GRADES

◆ = Honor Roll ■ = Year Round good or excellent grades ■ = Inconsistent or poor grades n/a = Partial or unavailable grades

County/Beach	2018-19	2017-18	2016-17	2015-16	2014-15	2013-14	2012-13	2011-12
Santa Cruz Santa Cruz, Natural Bridges State Beach	◆	■	■	■	■	■	■	■
SLO Pismo Beach, Sewers at Silver Shoals Drive	◆	■	■	■	■	■	■	■
SLO Cayucos, downcoast of the pier	◆	■	■	■	■	■	■	◆
SLO San Simeon, at Pico Avenue	◆	■	◆	■	◆	■	■	■
SLO Morro Bay, City Beach, 75 ft N of parking lot	◆	◆	◆	■	◆	■	■	■
Santa Barbara Guadalupe, Guadalupe Dunes	◆	n/a	n/a	■	■	■	◆	n/a
Ventura Silverstran, Santa Paula Drive	◆	◆	■	■	n/a	n/a	■	◆
Ventura Channel Islands Harbor, at Sawtelle Avenue (south of drain)	◆	■	◆	■	n/a	n/a	■	■
Ventura Ventura, Oil Piers Beach, south of drain	◆	■	n/a	n/a	◆	■	◆	■
Los Angeles San Pedro, Cabrillo Beach, ocean side	◆	■	■	■	■	◆	◆	■
Los Angeles Malibu, Las Tunas County Beach, Pena Creek	◆	◆	n/a	n/a	■	◆	◆	■
Orange Dana Point Harbor, Youth Dock	◆	◆	■	◆	◆	n/a	n/a	n/a
Orange Huntington Harbor, Trinidad Lane Beach	◆	■	■	■	■	n/a	n/a	n/a
Orange Huntington Harbor, Coral Cay Beach	◆	■	■	■	■	n/a	n/a	n/a
Orange Corona del Mar, El Moro Beach	◆	■	■	◆	n/a	■	◆	n/a
Orange Laguna Beach, Victoria Beach	◆	◆	■	◆	■	■	■	◆
Orange Dana Point, South Capistrano Bay Community Beach	◆	◆	■	◆	■	■	■	■
Orange Dana Point, Dana Strands Beach (AWMA)	◆	◆	■	■	■	■	■	■
Orange San Clemente, Linda Lane Beach	◆	■	■	n/a	n/a	n/a	n/a	n/a
Orange San Clemente, North beach at Avenida Pico	◆	■	■	■	■	■	■	■
Orange San Clemente, Avenida Calafia	◆	◆	■	◆	■	◆	■	■
San Diego Oceanside, projection of Cassidy Street	◆	■	■	■	■	■	■	■
San Diego Carlsbad, projection of Cerezo Drive	◆	◆	◆	◆	n/a	◆	◆	◆
San Diego Carlsbad, projection of Palomar Airport Road	◆	◆	◆	◆	n/a	■	◆	◆
San Diego Carlsbad, Encina Creek outlet	◆	◆	◆	◆	n/a	◆	◆	■
San Diego Carlsbad, projection of Ponto Drive	◆	◆	◆	◆	n/a	◆	■	◆
San Diego Carlsbad, projection of Poinsettia Lane	◆	◆	◆	◆	n/a	◆	■	◆
San Diego Solana Beach, Tide Beach Park (projection Solana Vista Drive)	◆	■	■	◆	■	■	■	■
San Diego Cardiff, Seaside State Park	◆	■	■	◆	■	■	■	◆
San Diego Cardiff, Las Olas (100 yards S of Charthouse)	◆	■	■	■	■	■	◆	■
San Diego Cardiff, Charthouse parking (South of Kilkeny)	◆	■	◆	■	◆	■	◆	■
San Diego Encinitas, San Elijo State Park (projection of Liverpool Drive)	◆	◆	■	◆	■	■	■	◆
San Diego Encinitas, San Elijo State Park, north end of stairs	◆	◆	◆	◆	◆	■	■	◆



 San Clemente Pier

BEACH REPORT CARD: BEACH BUMMERS

Unfortunately, every beach does not make the Honor Roll.

The beaches that received the ten poorest Summer Grades are called Beach Bummers. Following are the Beach Bummers for 2018-19.



SAN CLEMENTE PIER **ORANGE COUNTY**

San Clemente Pier was one of two Orange County beaches to make the Beach Bummer list this year. San Clemente Pier last appeared on the Beach Bummer list in 2016. This beach is impacted by untreated dry weather runoff that flows into the ocean through a nearby storm drain.

The City of San Clemente is currently conducting a Microbial Source

Tracking (MST) study, which will help identify the sources of bacteria in the ocean by examining genetic markers specific to certain animal groups (e.g. humans, cows, dogs, horses, birds). The City has also installed bird deterrent netting under the pier to help prevent bacteria-containing bird excrement from entering the water. In April 2019, the City of San Clemente formed their Ocean Water Quality Subcommittee to address the poor water quality around the pier.

FIGURE 2-7

Beach Bumpers (continued)



CLAM BEACH HUMBOLDT COUNTY

CHRONIC BEACH BUMMER

This chronic Beach Bummer is on the list for the sixth straight year. Water quality at this beach is negatively impacted by agricultural runoff that flows into the ocean via Patrick Creek and Strawberry Creek. Humboldt County officials are actively working to identify the largest sources of bacterial pollution at this beach.




LINDA MAR BEACH AT SAN PEDRO CREEK SAN MATEO COUNTY

Linda Mar Beach has made a second consecutive appearance on the Beach Bummer list, and is one of two San Mateo County beaches on the list this year. This beach is impacted by runoff during dry weather, which flows untreated into the ocean through San Pedro Creek.



LONG BEACH AT CORONADO AVENUE LOS ANGELES COUNTY

Long Beach City Beach at Coronado Ave. is making its first appearance on the Beach Bummer list, and is one of three L.A. County beaches on the list this year. Water quality at

beach bumpers 2018-2019 		
1	San Clemente Pier Drain SAN CLEMENTE // ORANGE COUNTY	F
2	Clam Beach County Park near Strawberry Creek MCKINLEYVILLE // HUMBOLDT COUNTY	F
3	Linda Mar Beach at San Pedro Creek PACIFICA // SAN MATEO COUNTY	F
4	Long Beach City Beach at Coronado Avenue LONG BEACH // LOS ANGELES COUNTY	F
5	Cowell Beach, west of the wharf SANTA CRUZ // SANTA CRUZ COUNTY	F
6	Monarch Beach North at Salt Creek DANA POINT // ORANGE COUNTY	F
7	Mother's Beach, between Tower and Boat Dock MARINA DEL REY // LOS ANGELES COUNTY	D
8	Cabrillo Beach, harborside at restrooms SAN PEDRO // LOS ANGELES COUNTY	D
9	Keller Beach, South Beach RICHMOND // CONTRA COSTA COUNTY	D
10	Aquatic Park SAN MATEO // SAN MATEO COUNTY	D

Beach Bumpers (continued)

this beach is negatively impacted by dry weather runoff, which flows into the ocean through a storm drain on the beach. Currently, the City of Long Beach is implementing the Municipal Urban Stormwater Treatment (MUST) project. The MUST project will catch stormwater and treat it before it can enter the L.A. River and subsequently impact ocean beaches. The treated water will ultimately be used to support wetland restorations.



TABLE 2-8: HISTORICAL GRADES OF LONG BEACH CITY BEACH

Long Beach monitoring locations	2018-19			2017-18			2016-17			2015-16			2014-15			2013-14			2012-13		
	Summer Dry	Winter Dry	Wet Weather	Summer Dry	Winter Dry	Wet Weather	Summer Dry	Winter Dry	Wet Weather	Summer Dry	Winter Dry	Wet Weather	Summer Dry	Winter Dry	Wet Weather	Summer Dry	Winter Dry	Wet Weather	Summer Dry	Winter Dry	Wet Weather
5th Street	A	C	F	A	B	F	A	C	F	A	A	F	A	B	F	B	B	F	A	A	C
10th Street	A	B	F	A	B	F	A	C	F	A	A	F	A	A	F	B	A	F	B	A	C
Molino Ave.	C	A	F	A	B	F	A	C	F	A	C	F	A	A	F	B	A	F	A	A	C
Coronado Avenue	F	B	F	A	A	F	C	B	F	A	A	F	A	A	F	B	A	F	C	A	B
Belmont Pier	B	A	F	A	D	F	A	B	F	A	A+	F	A	B	F	B	A	F	C	A	B
Prospect Ave.	C	A	F	A	C	F	A	B	F	A	A	F	A+	A	F	B	A	F	B	A	B
Granada Ave.	C	A	F	B	B	F	B	C	F	B	C	F	A+	A	F	C	A	F	B	A	A

Beach Bumpers (continued)



**COWELL BEACH
WEST OF WHARF
SANTA CRUZ COUNTY**

CHRONIC BEACH BUMMER

This chronic Beach Bummer is making its tenth straight appearance on the list this year. Water quality at this beach is negatively impacted by untreated dry weather runoff that flows into the ocean through a storm drain on the beach. The County of Santa Cruz, City of Santa Cruz along with Nonprofit partners has formed the Cowell's Working Group (CWG), which is dedicated to improving water quality at this beach. The CWG has conducted studies to determine the sources and distributions of bacteria at the beach. Another goal of CWG is to spread public awareness about water quality at Cowell Beach.



**MONARCH BEACH
AT SALT CREEK
ORANGE COUNTY**

Monarch Beach last appeared on the Beach Bummer list in 2015 and is the second Orange County beach to make the list this year. Water quality at this beach is negatively impacted by untreated dry weather runoff that flows into the ocean through a storm drain on the beach.

The City of Dana Point has implemented several projects in recent



Cowell Beach, Santa Cruz

years to improve the water quality at this beach. A bird abatement project was implemented, which consisted of deterring seagulls with a falcon. The City also installed a facility that treated water flowing from Salt Creek before it could enter the ocean.



**MARINA DEL REY,
MOTHERS BEACH
LOS ANGELES COUNTY**

CHRONIC BEACH BUMMER

Marina Del Rey Mother's Beach is making its fifth appearance on the list this year and is one of three L.A. County Beach Bumpers. This beach is considered enclosed because it is located within the marina and the only connection to the open ocean is through the marina's entry and exit channel. Because it is enclosed, there is little water circulation and bacteria and other pollution do not get flushed away from the beach. The lack of waves at this beach

makes it a popular beach for families.

L.A. County has installed bird exclusion devices and water circulators to help remediate the problem. The restroom building underwent renovations last year replaced pipes and sewer lines. Bioswales designed to catch runoff before it can enter the water were also installed.



**CABRILLO BEACH
INNER/HARBOR SIDE
LOS ANGELES COUNTY**

CHRONIC BEACH BUMMER

This beach has appeared on the list eight times in the last 10 years and is one of three L.A. County Beach Bumpers. Cabrillo Beach (harborside) is enclosed by a seawall that cuts the beach off from the open ocean. The seawall and lack of waves do not allow for sufficient water circulation; as a result, bacteria and other pollut-

Beach Bumpers (continued)

ants can build up in the water. The absence of large waves and a strong current makes it a popular beach for families with young children.

In 2016, a study concluded that the elevated *Enterococcus* levels were correlated with bird concentrations at the beach. However, this study also detected a human source of bacteria of unknown origin. Subsequent studies have tried to identify where the bacteria are coming from, but these studies were ultimately inconclusive. In 2017, the sewage infrastructure at the beach was replaced, but the human bacteria persisted⁷.



KELLER BEACH CONTRA COSTA COUNTY

Keller Beach South Beach is in Contra Costa County and is making its first appearance on the Beach Bummer list. This beach is in the San Francisco Bay and is connected to the open ocean via the Golden Gate Strait. There is little water circulation at this beach due to its lack of waves and the surrounding seagrass beds. Bacteria and other pollution are not easily flushed away from the beach and can build up. The seagrass

TABLE 2-90: SEWAGE SPILLS IN 2018-19 BY CALIFORNIA COUNTY

County	Number of Spills	Volume of Spills (in gallons)	Volume that reached surface water	# that reached surface water
Del Norte County	5	30,575	30,460	5
Humboldt County	15	251,910	134,902	15
Mendocino County	2	3,086	3,030	2
Sonoma County	45	2,836,110	2,833,713	45
Marin County	41	361,657	247,861	41
San Francisco County	4	19,780	19,780	4
Contra Costa County	39	2,452,543	2,440,152	39
Alameda County	32	74,186	70,345	32
San Mateo County	35	223,606	155,107	35
Santa Cruz County	4	19,922	19,722	4
Monterey County	4	4,960	4,269	4
SLO County	7	59,500	56,500	7
Santa Barbara County	4	2,057	742	4
Ventura County	4	7,990	5,130	4
Los Angeles County	96	1,545,819	1,308,852	96
Orange County	28	42,547	19,102	28
San Diego County	23	183,634	118,936	23
Total	388	8,119,882	7,468,603	388

beds themselves may also be a source of bacteria as aquatic plants have been shown to harbor FIB species^{8,9}.



AQUATIC PARK SAN MATEO COUNTY

Aquatic Park was on the Beach Bummer list in 2014 and is the second San Mateo County beach to make the list this year. This beach sits in a channel within the San Francisco Bay making it even more cut off from the open ocean than a typical enclosed beach.

This beach is also surrounded on all sides by residential housing so it is heavily impacted by runoff.

The City of San Mateo has a goose control program in place to reduce the impact that goose excrement has on the water quality. The City of San Mateo is also working on improving its sewer infrastructure with their Basin C Sanitary Sewer Rehabilitation Project, which started in 2019.



⁷ http://ftp.sccwrp.org/pub/download/DOCUMENTS/TechnicalReports/1068_CabrilloQMRA.pdf

⁸ Odonkor, S. T., J. K. Ampofo. *Escherichia coli* as an indicator of bacteriological quality of water: an overview. 2013. *Microbiology Research* volume 4:e2.

⁹ yappanahalli, M. N., M. B. Nevers, A. Korajkic, Z. R. Staley, V. J. Harwood. *Enterococci in the Environment*. 2012. *Microbiology and Molecular Biology Reviews* volume 76: 685-706.

II. WEST COAST SUMMARY

BEACH BUMMERS



TABLE 2-10: 2018-19 BEACH BUMMERS AND RECENT HISTORY







2018-19 Beach Bummers			2018-19			2017-18			2016-17			2015-16		
			Summer Dry	Winter Dry	Wet Weather	Summer Dry	Winter Dry	Wet Weather	Summer Dry	Winter Dry	Wet Weather	Summer Dry	Winter Dry	Wet Weather
1	San Clemente Pier, San Clemente	Orange County	F	D	A+	C	F	F	F	F	C	B	A	n/a
2	Clam Beach County Park, McKinleyville	Humboldt County	F	n/a	B	F	n/a	C	F	n/a	F	F	n/a	F
3	Linda Mar Beach, Pacifica	San Mateo County	F	n/a	F	F	F	F	C	A	F	A	C	F
4	Long Beach @ Coronado Avenue	Los Angeles County	F	B	F	B	A	F	C	B	F	A	A	F
5	Cowell Beach, Santa Cruz	Santa Cruz County	F	A	C	D	B	B	F	A	F	F	A+	D
6	Monarch Beach, Dana Point	Orange County	F	C	D	C	F	F	D	F	F	F	F	F
7	Mother's Beach, Marina del Rey	Los Angeles County	D	F	F	A	F	B	D	F	F	F	F	F
8	Cabrillo Beach (@ restrooms), San Pedro	Los Angeles County	D	F	F	D	F	F	B	B	F	A	A	D
9	Keller Beach South, Richmond	Contra Costa County	D	n/a	A	B	n/a	A	C	n/a	D	B	n/a	A
10	Aquatic Park, San Mateo	San Mateo County	D	n/a	A	B	n/a	F	B	B	F	C	F	F

TABLE 2-11: MOST BEACH BUMMER APPEARANCES DURING LAST DECADE

Beach/County	County	Number of appearances	2018-19 Rank	17-18 Rank	16-17 Rank	15-16 Rank	14-15 Rank	13-14 Rank	12-13 Rank	11-12 Rank	10-11 Rank	09-10 Rank
Cowell Beach, Santa Cruz	Santa Cruz County	10	5	8	3	1	1	1	2	2	1	2
Cabrillo Beach at restrooms	Los Angeles County	8	8	9			9	4	4	6	3	3
Santa Monica Pier	Los Angeles County	6		7	6	5	6	7				5
Clam Beach County Park	Humboldt County	6	2	4	1	2	3	6				
Poche Beach, San Clemente	Orange County	5		1					3	8	5	4
Marina Lagoon, Lakeshore Park	San Mateo County	5		2	4		4	2	6			
Mother's Beach, Marina del Rey	Los Angeles County	5	7		9	6	2	3				
Capitola Beach, Capitola	Santa Cruz County	4			7			9			10	8
Avalon Beach, Catalina Island	Los Angeles County	4							1	1	2	1
Monarch Beach	Orange County	3	6		10	4						

FOR THE COMPLETE LIST OF BEACH BUMMERS DURING THE LAST DECADE, SEE PAGE 54.



2018-19 Beaches with Good (A or B) Grades	 Open Ocean Beaches	 Storm Drain Impacted	 Enclosed Waterbodies
 Summer Dry	99%	92%	94%
 Winter Dry	88%	84%	84%
 Wet Weather	76%	48%	38%

OPEN OCEAN VS. STORM DRAIN VS. ENCLOSED BEACHES

Not all beaches are the same when it comes to water quality. We have categorized California's beaches into three groups for our analysis:

- 1) Open Ocean Beaches
- 2) Storm Drain-impacted Beaches
- 3) Enclosed Beaches

OPEN BEACHES

Open beaches do not have obstructions between the beach and open water. They experience waves and greater water circulation than a non-open or enclosed beach. These beaches do not have nearby storm drains, streams, or rivers. Open beaches have better water quality than enclosed or storm drain, stream, or river beaches, making them great for

BeachTypes (continued)

recreation. We have classified 92 beaches as open. Summer Dry Grades were excellent with 99% of the beaches receiving A and B grades.

Winter Dry Grades were good but below average with 88% of the beaches receiving A and B grades.

Wet Weather Grades were good with 76% of the beaches receiving A and B grades.

Open beaches have better water quality than enclosed or storm drain, stream, or river beaches, making them great for recreation.

As indicated by the poor Wet Weather Grades, open beaches are still impacted by stormwater. We advise people to avoid contact with water for at least three days following a significant rain event.

STORM DRAIN, STREAM, AND RIVER BEACHES

Beaches with storm drains, streams, or rivers flowing into them receive high amounts of runoff. We recommend swimming at least 100 yards away from storm drains, streams, and rivers at the beach. Also, avoid contact with the water for at least three days following a rain event. We have classified 237 beaches as impacted by storm drains, streams, or rivers.

Summer Dry Grades were good but below average with 92% of the beaches receiving A and B grades.

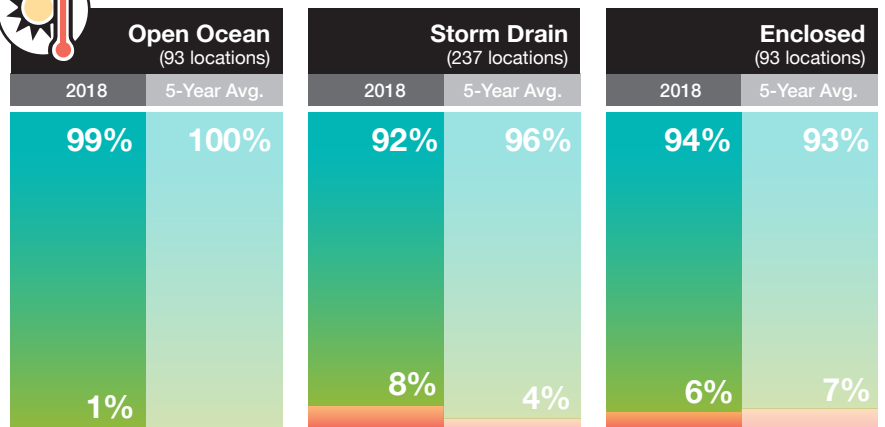
Winter Dry Grades were good but below average with 84% of the beaches receiving A and B grades.

FIGURE 2-12: GRADES BY TIME PERIOD & BEACH TYPE

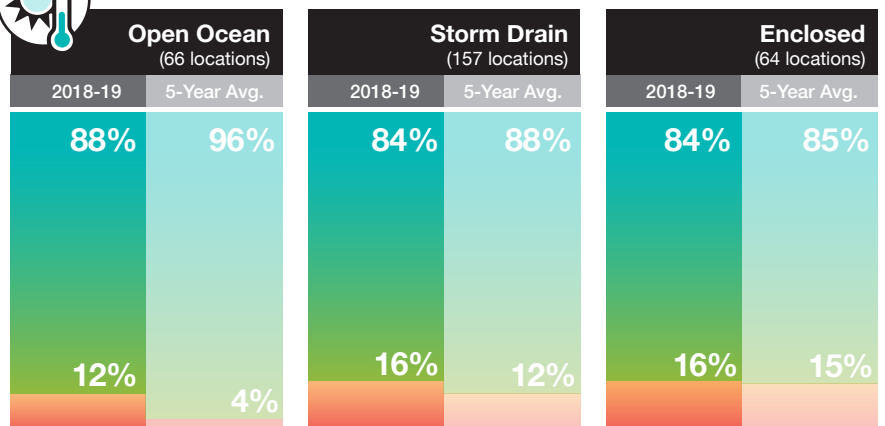
■ A+B GRADES ■ C+D+F GRADES



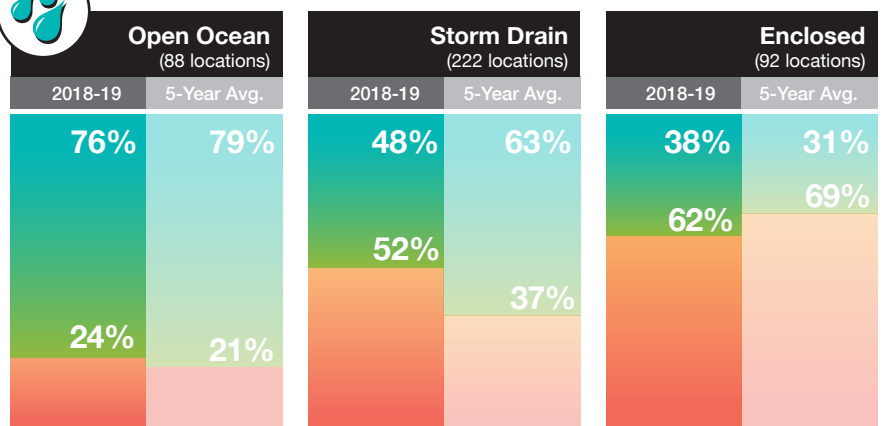
SUMMER DRY GRADES (APRIL - OCTOBER 2018)



WINTER DRY GRADES (NOVEMBER 2018 - MARCH 2019)



WET WEATHER GRADES (APRIL 2018 - MARCH 2019)



Beach Types (continued)

Wet Weather Grades were poor and far below average with only 49% of the beaches receiving A and B grades. This is likely due to the large increase in rainfall over the last year.

Avoid contact with the water for at least three days following a rain event.

The top six beaches on this year’s Beach Bummers list are impacted by runoff through a storm drain, river, or stream.

ENCLOSED BEACHES

Enclosed beaches have obstructions like a land mass or wall blocking the beach from the open water. Therefore, these beaches do not receive waves and have poor water circulation. Enclosed beaches are usually found in lagoons, marinas, and harbors. Due to their calm waters, enclosed beaches are popular areas for small children and are frequently named “baby beach” or something similar. We have classified 93 beaches as enclosed.

Summer Dry Grades for enclosed beaches were excellent with 94% receiving A and B grades.

Winter Dry Grades were also good with 84% of the beaches receiving A and B grades.

Wet Weather Grades were poor but



TABLE 2-13: SUMMER WATER QUALITY AT L.A. CO. ENCLOSED BEACHES

Beach/County	2018-19	2017-18	2016-17	2015-16	2014-15	2013-14
Mother's Beach – Playground Area Marina del Rey	A	A	A	C	F	A
Mother's Beach – Lifeguard Tower Marina del Rey	A	A	A	B	F	B
Mother's Beach – bet. Tower /Dock Marina del Rey	D	A	D	F	F	F
Cabrillo Beach – harborside @ restrooms	D	D	B	A	D	F

higher than average with 38% of the beaches receiving A and B grades.

Four Beach Bummers this year are enclosed beaches.

IMPACT OF FIRE

In early November 2018, the Woolsey Fire burned 96,949 acres of land and destroyed 1,500 structures across Malibu, Calabasas, and Thousand Oaks¹⁰. Major wildfires such as this can have a big impact on water qual-

ity because fires damage sewage infrastructure and increase the amount of runoff due to vegetation loss. We compared Winter Dry Grades for Malibu beaches going back five years to see if there was a noticeable effect of the Woolsey Fire. We analyzed Winter Dry Grades because the fire happened in early November and thus Summer Dry Grades would not capture the effects of the fire. We also wanted to eliminate differences in grades due to rainfall, therefore

https://cdfdata.fire.ca.gov/incidents/incidents_details_info?incident_id=2282#main_content

Beach Types (continued)

Wet Weather Grades were not used for comparison. However, we acknowledge that the effects of heavy rainfall may extend beyond the three days post-rain that are classified as wet weather.

Over the last five years, 87% of the Malibu beaches received A and B Winter Dry Grades. Winter Dry Grades this year were substantially lower with only 57% of the beaches receiving A and B grades. This dropoff is particularly substantial considering that 100% of the beaches in Malibu received A and B grades in the year prior to the fire. Also, in the five years before the fire, the lowest grades for Malibu beaches occurred in 2014-2015 with 68% receiving A and B grades. This is 11 percentage points higher than the 57% A and B grades post fire. More research must be done to measure how long the impacts of this fire will last, but we will continue to monitor the Malibu beaches and post grades on beachreportcard.org.



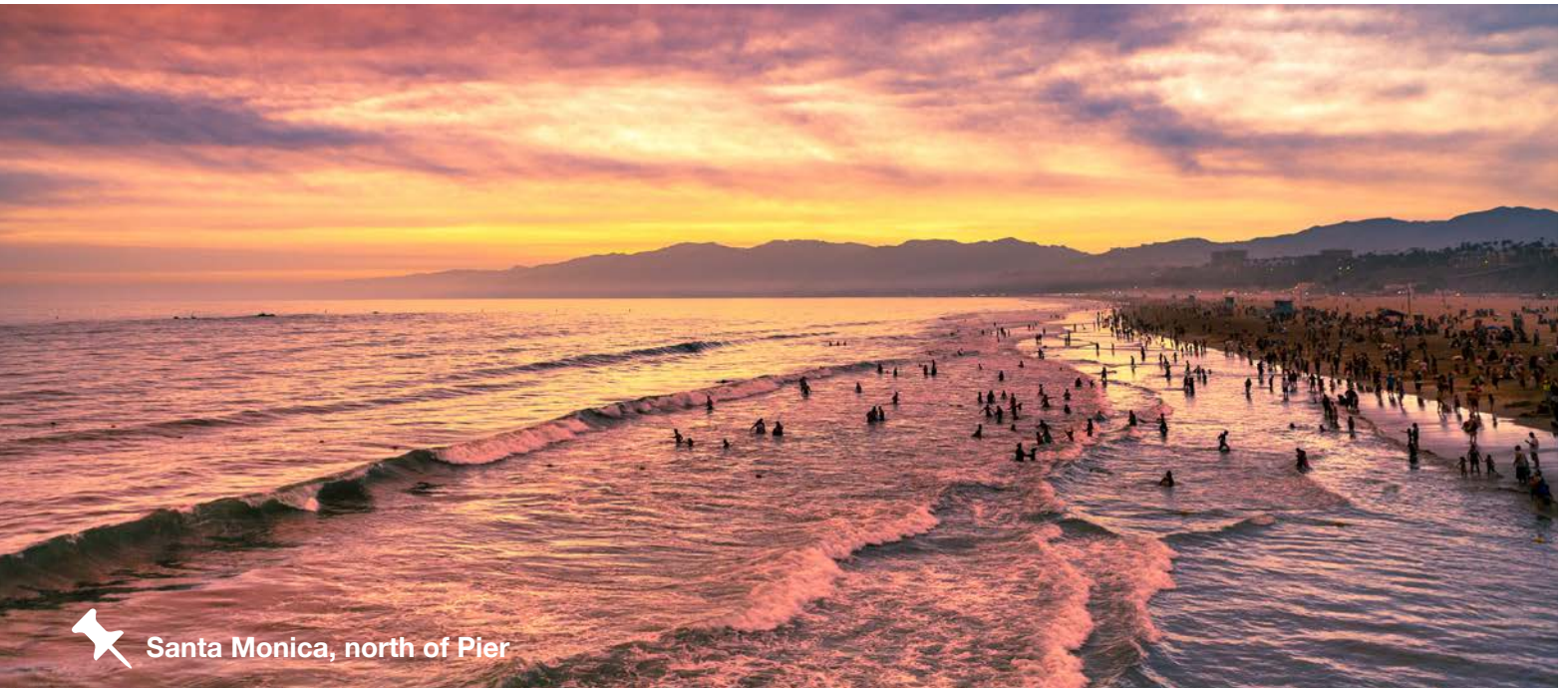
TABLE 2-14: EFFECTS OF FIRE ON WATER QUALITY GRADES

Year/ No. of Grades		Good Grades (A and B)		Poor Grades (C-F)	
		#	%	#	%
2013-2014	21	18	86%	3	14%
2014-2015	22	15	68%	7	32%
2015-2016	20	19	95%	1	5%
2016-2017	21	18	86%	3	14%
2017-2018	22	22	100%	0	—
Pre Fire Grades	106	87%		13%	
2018-2019	21	12	57%	9	43%
Post Fire Grades	21	57%		43%	

BEACH NEWS



III. BEACH NEWS



Santa Monica, north of Pier

BEACH NEWS: UPDATES

The Beach News section discusses some of the major issues that impacted beach water quality over the past year.

CLIMATE CHANGE

Unfortunately, climate change is inevitable with more and more of its impacts realized every day. At this point, we can only work toward limiting the negative impacts that climate change will have on our health and environment. One potential impact of climate change is poorer recreational water quality along the West Coast. As we have shown, rain and wildfire significantly decrease water quality by increasing the amount of pollution that reaches the ocean. As the climate changes, most of the

coastal areas on the West Coast will receive more rain¹¹. Additionally, changing patterns in rainfall coupled with changes in wind patterns are expected to increase the frequency and size of wildfires¹².

Governments, leaders, and the public must take immediate action to mitigate the effects of climate change and pollution. Many local governments have made enormous efforts to identify and eliminate runoff entering the ocean, but across the board there are still improvements to be

made. Governments must continue to invest in projects that capture and reuse stormwater because the benefits will be threefold. One, capture and reuse prevents pollution from reaching the ocean, thus protecting public health and the natural environment. Two, capture and reuse reduces the amount of water imported to Southern California and subsequently reduces the fossil fuels used to transport the water. Three, the captured water could be used to restore natural coastal habitat which can mit-

11 Neelin, J.D., B. Langenbrunner, J.E. Meyerson, A. Hall, N. Berg. 2013. California winter precipitation change under global warming in the coupled model intercomparison project phase 5 ensemble. Journal of Climate Vol. 26 6238-6256.
12 http://www.climateassessment.ca.gov/techreports/docs/20180827-Projections_CCCA4-CEC-2018-014.pdf

III. BEACH NEWS

Beach News (continued)

igate against the effects of climate change such as sea level rise. In addition, governments should consider implementing policies and programs that will reduce the impacts of fire, rain, and floods such as limits on the amount of development allowed in fire and flood prone areas.

FUNDING SHORELINE MONITORING PROGRAMS

Going against President Donald Trump's recommendations, the U.S. Congress passed a 2019 budget that did not make cuts to the U.S. EPA's Beaches Environmental Assessment and Coastal Health Act (BEACH Act). This program funds water quality monitoring in coastal U.S. areas with some States, such as Oregon, relying solely on these grants to sustain their monitoring program. Without the BEACH Act funding, many states would abandon their beach monitoring programs, which would be devastating to public health. Millions of people could get sick by unknowingly exposing themselves to poor water quality. The economic cost would also be severe as coastal recreation and tourism generates well over \$100 billion annually¹³.

While funding for the BEACH Act

was secured for 2019, the funding under the BEACH Act continues to be threatened each year, and the amount has not increased significantly since it was adopted in 2000. The Federal Government must increase funding for the BEACH Act so coastal states can keep their communities and visitors safe and healthy.

States will also likely need to take local action to maintain a robust recreational water quality program moving forward. California funds statewide beach monitoring programs with BEACH Act resources as well as Senate Bill 482 (SB482), which funds two-thirds of the non-regulatory based shoreline monitoring in the State. SB4482 Allocation is overseen by the State Water Resources Control Board (SWRCB). However, the funds provided are not sufficient as there are many beaches that do not get monitored, and many counties do not conduct monitoring year round. We recommend that the SWRCB provide additional water quality funding, so counties can expand their monitoring programs year round. The SWRCB must also ensure that every beach applicable under AB411 is monitored.

NOWCAST UPDATE

For the fourth straight summer, Heal the Bay is providing daily water quality predictions for California Beaches at the Beach Report Card with Now-

Cast website and app. NowCast is able to predict concentrations of bacteria in the water on a daily basis thus providing additional information to the public and filling in the time gaps of traditional bacteria sampling. NowCast consists of computer models that examine correlations between environmental conditions (such as temperature and tide) and historical bacteria concentrations. Our models then predict how much bacteria are present in the water given the current local conditions at the beach. Visit beachreportcard.org to find daily predictions for beaches in California. The Beach Report Card with NowCast app is available for free on iOS and Android devices.

RIVER REPORT CARD

This past May Heal the Bay released its first Annual River Report Card. The River Report Card uses color-grades of Red, Yellow, or Green for 27 freshwater recreation sites in Los Angeles County. Grades are based on levels of bacteria monitored in 2018 and prior years.

The River Report Card is the most comprehensive water quality report to date on bacterial pollution in popular freshwater recreation areas within the Los Angeles River Watershed, the Malibu Creek Watershed, and the San Gabriel River Watershed. These valued public places are often used for swimming, wading, fishing, kayaking,

13 <https://coast.noaa.gov/data/digitalcoast/pdf/econ-report.pdf>

III. BEACH NEWS

Beach News (continued)

and other activities, especially during summer months when communities seek relief from hot SoCal days.

Since we started monitoring freshwater recreation sites and making water quality data public, some positive changes have included increased bacterial monitoring and public notification signage in L.A. River recreation zones as well as increased dissemination of water quality information to the public through emails, websites, and other online means by government agencies collecting water quality information. Our annual River Report Card 2018 includes additional recommendations for water quality monitoring and public notification protocols to be the most protective of public health.

Before heading to a freshwater recreation area in L.A. County check out our River Report Card at healthebay.org/riverreportcard, which is updated regularly during the summer months.

NEW BACTERIAL OBJECTIVES (ADOPTED AUGUST 2018)

In August 2018, the SWRCB approved new TMDL and 303(d) bacterial objectives for recreational waterbodies to align the objectives with the U.S. EPA's 2012 Recreational Water Quality Criteria^{14,15}. These new objectives

do not affect public water quality notifications at the beach, which are laid out in AB411. Despite that, the newly passed objectives are concerning because they are not as protective to public health as they should be. The SWRCB increased the allowable amount of Enterococcus in the water from 104 cfu/100ml to 110 cfu/100ml. In other words, a waterbody can have more bacteria than before and still be compliant. The SWRCB also changed the geometric mean objective for Enterococcus from 35/100ml (30-day geometric mean) to 30/100ml (6-week geometric mean). Changing the 30-day geometric mean to a 6-week geometric mean has no scientific basis and does not incentivize monitoring agencies to sample the water weekly. Monitoring agencies now have two extra weeks to collect the same amount of samples, which is not in the best interest of public health. Water quality information needs to be readily available in order for it to be useful.

The SWRCB also proposed to remove fecal coliform bacteria from the updated bacterial objectives. This would have left Enterococcus as the sole bacteria used for TMDL compliance and EPA 303(d) listing. Removing fecal coliform objectives is problematic because fecal coliform exceedances are often independent

from Enterococcus exceedances (according to Beach Report Card database), and the World Health Organization advises that at least two FIB should be measured to properly protect public health¹⁶. Using the latest research and data, Heal the Bay scientists with the help of other groups successfully convinced the SWRCB to retain fecal coliform bacterial objectives in August 2018.

MEASURE W

A recent success for L.A. County's water quality was the passage of Measure W in November 2018. Heal the Bay played an integral role in the passing of Measure W, which will fund stormwater improvement projects around the County. Heal the Bay, along with partners in the OurWaterLA Coalition, are currently working to ensure that nongovernmental stakeholders have decision making roles in the prioritization of projects. We want to ensure that nature-based, equitable, and multi-benefit projects are prioritized and implemented. We support projects that improve watershed health and water quality, such as projects that address stormwater runoff and expand and improve green space for all.



¹⁴ <https://www.waterboards.ca.gov/bacterialobjectives>

¹⁵ <https://www.epa.gov/wqc/2012-recreational-water-quality-criteria-documents>

¹⁶ https://www.who.int/water_sanitation_health/bathing/srwg1.pdf

COUNTY SUMMARIES



IV. CALIFORNIA COUNTY SUMMARIES



Malaga Cove, Palos Verdes Estates

COASTAL COUNTIES: CALIFORNIA

Heal the Bay provides Beach Report Card grades for all coastal counties in California from Del Norte to San Diego. Here is a brief summary of each county's monitoring program over the past year, water quality grades, rainfall amounts, and a summary of sewage spills.

Note: All averages below refer to the five-year-average unless otherwise indicated.

Heal the Bay provides a summer (AB411) dry grade and a winter dry grade for a beach if the public agency collected weekly samples for at least 75% of the monitoring time-period. To receive a summer dry grade, there had to be at least 23 samples collected between April 1 and October 31. For a winter dry grade, there had to be at least 16 samples collected between November 1, 2018 and March 31, 2019.

Grades are categorized as wet weather for any sample taken throughout the whole year (April 1, 2018 to March 31, 2019) during or within 72 hours of a rain event of at least 0.10 inches. The difference in frequency of rain events between counties makes it impossible to determine a minimum sampling threshold for a grade. Thus, Heal the Bay generates a grade for wet weather regardless of the sample size. This enables beachgoers

to see differences in dry versus wet weather water quality.

Sewage spill data is obtained through the State Water Resources Control Board's SSO (Sanitary Sewer Overflow) online database. Only Category 1 sewage data is recorded for each county. Category 1 describes discharges of untreated or partially treated wastewater of any volume resulting from a sanitary sewage system failure.



San Diego County

Summer Dry Grades were excellent and close to the five-year average with 97% of the beaches receiving A and B grades.

Wet Weather Grades were poor and lower than average with only 69% of the beaches receiving A and B grades.

Winter Dry Grades were good but lower than average with only 84% of beaches receiving A and B grades.

A total of 12 beaches made it on the Honor Roll comprising over a third of the beaches on the list.

San Diego County received 12 inches of rain, which is 37% higher than the historical average of nine inches. This may account for the lower than average Wet Weather and Winter Dry Grades since most of the rainfall occurred in the winter months.

There were 23 sewage spills across the County amounting to 183,634 gallons. Oceanside and Del Mar beaches were impacted by spills.

A complete list of grades for San Diego County's beach monitoring locations can be found in Appendix B-1.

Monitoring agencies in San Diego County:

- The City of Oceanside
- The City of San Diego
- Encina Wastewater Authority
- San Elijo Joint Powers Authority
- Port of San Diego
- The County of San Diego Department of Environmental Health (DEH)

For additional water quality information:

County of San Diego Department of Environmental Health
www.sdbeachinfo.com

San Diego County Grades												
	2018-2019						5-Year Avg. (2013-2018)					
	Summer Dry*		Winter Dry		Wet Weather		Summer Dry*		Winter Dry		Wet Weather	
	#	%	#	%	#	%	#	%	#	%	#	%
A	72	95%	33	73%	27	60%	69	94%	34	88%	37	66%
B	2	3%	5	11%	4	9%	3	4%	1	4%	6	10%
C	2	3%	3	7%	1	2%	1	1%	0	1%	4	6%
D	0	0%	3	7%	2	4%	0	1%	1	2%	2	4%
F	0	0%	1	2%	11	24%	0	1%	2	6%	8	14%
Total	71		45		45		73		38		56	

*State AB411 monitoring April thru October. Percentages may not add up to 100 due to rounding.

Sewage Spill Summary	
118,936	
GALLONS OF SEWAGE	
Total volume reported to have reached a waterbody in San Diego County	

Honor Roll			
	Summer Dry	Winter Dry	Wet Weather
Oceanside, projection of Cassidy Street	A+	A+	A+
Carlsbad, projection of Cerezo Drive	A+	A+	A+
Carlsbad, projection of Palomar Airport Road	A+	A+	A+
Carlsbad, Encina Creek outlet	A+	A+	A+
Carlsbad, projection of Ponto Drive	A+	A+	A+
Carlsbad, projection of Pointsettia Lane	A+	A+	A+
Encinitas, San Elijo State Park, north end	A+	A+	A+
Encinitas, San Elijo State Park, Liverpool Drive	A+	A+	A+
Cardiff State Beach, Charthouse parking lot	A+	A+	A+
Cardiff State Beach, Las Olas	A+	A+	A+
Cardiff State Beach, Seaside State park	A+	A+	A+
Solana Beach, Tide Beach Park	A+	A+	A+

Orange County

Summer Dry Grades were excellent and almost equal to the five-year average with 97% of the beaches receiving A and B grades.

Wet Weather Grades were poor but higher than average with 56% of the beaches receiving A and B grades.

Winter Dry Grades were equal to the five-year average with 93% of the beaches receiving A and B grades.

A total of 10 beaches made it on the Honor Roll, comprising a third of all the beaches on the Honor Roll.

Monarch Beach (at Salt Creek), and San Clemente Pier both made the Beach Bummers list.

Orange County received 17 inches of rain, which is 94% higher than the historical average of nine inches.

There were 28 sewage spills reported across the County equalling 42,547 gallons. Laguna Beach, Newport Harbor, and Corona Del Mar beaches were impacted by spills.

A complete list of grades for Orange County's beach monitoring locations can be found in Appendix B-1.

Monitoring agencies:

- Orange County Environmental Health
- South Orange County Wastewater Authority
- Orange County Sanitation District (OCSD)

For additional water quality information:

County of Orange Environmental Health Division
www.ocbeachinfo.com

Orange County Grades												
	2018-2019						5-Year Avg. (2013-2018)					
	Summer Dry*		Winter Dry		Wet Weather		Summer Dry*		Winter Dry		Wet Weather	
	#	%	#	%	#	%	#	%	#	%	#	%
A	106	92%	96	86%	50	42%	105	95%	88	84%	44	42%
B	5	4%	8	7%	16	14%	4	4%	9	9%	9	9%
C	2	2%	1	1%	8	7%	1	1%	4	3%	10	9%
D	0	0%	4	4%	7	6%	0	0%	1	1%	9	8%
F	2	2%	3	3%	37	31%	1	1%	3	3%	34	32%
Total	115		112		118		111		104		105	

*State AB411 monitoring April thru October. Percentages may not add up to 100 due to rounding.

Sewage Spill Summary	
19,102	
GALLONS OF SEWAGE	
Total volume reported to have reached a waterbody in Orange County	

Honor Roll			
	Summer Dry	Winter Dry	Wet Weather
Huntington Harbor, Trinidad Lane Beach	A+	A+	A+
Huntington Harbor, Coral Cay Beach	A+	A+	A+
Corona del Mar, El Moro Beach	A+	A+	A+
Laguna Beach, Victoria Beach	A+	A+	A+
Dana Strands Beach	A+	A+	A+
South Capistrano Community Beach	A+	A+	A+
San Clemente, North Beach at Avenida Pico	A+	A+	A+
San Clemente, Linda Lane Beach	A+	A+	A+
San Clemente, Avenida Calafia	A+	A+	A+
Dana Point Harbor, youth dock	A+	A+	A+

Beach Bummers			
	Summer Dry	Winter Dry	Wet Weather
Dana Point, Monarch Beach North	F	F	D
San Clemente Pier	F	D	A+

Los Angeles County

Summer Dry Grades were excellent but slightly lower than average with 91% of the beaches receiving A and B grades.

Wet Weather Grades were poor and considerably lower than average with only 30% of the beaches receiving A and B grades.

Winter Dry Grades were poorer and below average with only 70% of the beaches receiving A and B grades.

Cabrillo Beach (oceanside) and Las Tunas Beach (at Pena Creek) made it on the Honor Roll list.

Long Beach City Beach (Coronado Ave.), Cabrillo Beach (harborside), and Marina Del Rey Mother's Beach all made the Beach Bummers list.

L.A. County received 15 inches of rain, which is 46% higher above the historical average of 10.5 inches. This may account for the lower than average Wet Weather and Winter Dry Grades since most of the rainfall occurred in the winter months and the effects of rain may linger beyond the wet weather period of three days.

There were 96 sewage spills across the County totaling 1.5 million gallons. Avalon Bay beaches and Long Beach City Beach were reported as impacted by spills. However, the number of impacted beaches may be higher. There were six spills greater than 10,000 gallons in waterways that eventually flow into the ocean near recreational beaches, yet no beaches were reportedly impacted and no health advisories were issued.

A complete list of grades can be found in Appendix B-1.

Monitoring agencies: • City of Los Angeles' Environmental Monitoring Division (EMD) at Hyperion Sewage Treatment Plant • The Los Angeles Co. Dept. of Public Health Environmental Health program • Los Angeles County Sanitation District • City of Long Beach, Environmental Health Division • The City of Redondo Beach. For additional water quality information: County of Los Angeles Department of Public Health Environmental Health <http://publichealth.lacounty.gov/eh> City of Long Beach <http://www.longbeach.gov/health/inspections-and-reporting/inspections/recreational-water-samples/?folderid=4415&1>

Los Angeles County Grades												
	2018-2019						5-Year Avg. (2013-2018)					
	Summer Dry*		Winter Dry		Wet Weather		Summer Dry*		Winter Dry		Wet Weather	
	#	%	#	%	#	%	#	%	#	%	#	%
A	76	85%	51	55%	21	21%	78	87%	63	75%	31	35%
B	5	6%	14	15%	9	9%	6	7%	9	11%	10	11%
C	5	6%	19	20%	8	8%	2	2%	5	6%	8	9%
D	2	2%	3	3%	6	6%	2	2%	2	2%	5	6%
F	1	1%	6	6%	55	56%	2	2%	5	6%	35	39%
Total	89		93		99		89		84		89	

Long Beach Grades												
	2018-2019						5-Year Avg. (2013-2018)					
	Summer Dry*		Winter Dry		Wet Weather		Summer Dry*		Winter Dry		Wet Weather	
	#	%	#	%	#	%	#	%	#	%	#	%
A	10	59%	8	53%	0	0%	11	77%	9	64%	0	3%
B	2	12%	3	20%	0	0%	3	18%	3	22%	0	0%
C	3	18%	4	27%	0	0%	1	5%	1	10%	0	3%
D	1	6%	0	0%	0	0%	0	0%	0	3%	1	4%
F	1	6%	0	0%	17	100%	0	0%	0	1%	13	90%
Total	17		15		17		15		15		15	

*State AB411 monitoring April thru October. Percentages may not add up to 100 due to rounding.

Sewage Spill Summary	
1,300,000	
GALLONS OF SEWAGE	
Total volume reported to have reached a waterbody in Los Angeles County	

Honor Roll			
	Summer Dry	Winter Dry	Wet Weather
Malibu, Las Tunas County Beach	A+	A+	A+
Cabrillo Beach, oceanside	A+	A+	A+

Beach Bummers			
	Summer Dry	Winter Dry	Wet Weather
Mother's Beach, Marina del Rey	D	F	F
Long Beach, projection of Coronado Avenue	F	B	F
Cabrillo Beach, harborside at restrooms	D	F	F

Ventura County

Summer Dry Grades were excellent with 100% of the beaches receiving A grades.

Wet Weather Grades were poor and markedly below average with only 67% of the beaches receiving A and B grades.

Winter Dry Grades were excellent and above average with 100% of the beaches receiving A grades.

Silverstrand (Santa Paula Dr.), Silverstrand (Sawtelle Ave.), and Oil Piers Beach made the Honor Roll.

Ventura County received 17 inches of rain, which is 38% higher than the historical average of 12 inches. This may account for the lower than average Wet Weather and Winter Dry Grades since most of the rainfall occurred in the winter months.

There were four sewage spills reported across the County totaling 7,990 gallons. San Buenaventura Beach and Surfer's Point at Seaside Park were both impacted by spills.

A complete list of grades for Ventura County's beach monitoring locations can be found in Appendix B-1.

For additional water quality information:
Ventura County's Environmental Health Division
<https://vcrra.org/beaches-and-sampling-results>

Ventura County Grades												
	2018-2019						5-Year Avg. (2013-2018)					
	Summer Dry*		Winter Dry		Wet Weather		Summer Dry*		Winter Dry		Wet Weather	
	#	%	#	%	#	%	#	%	#	%	#	%
A	40	100%	18	100%	15	56%	40	100%	14	90%	25	79%
B	0	0%	0	0%	4	15%	0	0%	1	5%	3	10%
C	0	0%	0	0%	5	19%	0	0%	0	3%	2	6%
D	0	0%	0	0%	0	0%	0	0%	0	1%	1	2%
F	0	0%	0	0%	3	11%	0	0%	0	1%	1	3%
Total	40		18		27		40		15		32	

*State AB411 monitoring April thru October. Percentages may not add up to 100 due to rounding.

Sewage Spill Summary	
5,130	
GALLONS OF SEWAGE	
Total volume reported to have reached a waterbody in Ventura County	

Honor Roll Grades			
	Summer Dry	Winter Dry	Wet Weather
Silverstrand, at Santa Paula Drive	A+	A+	A+
Silverstrand, at Sawtelle Avenue	A+	A+	A+
Oil Piers Beach	A+	A+	A+



Emma Wood State Beach

Santa Barbara County

Summer Dry Grades were good but lower than average with 88% of the beaches receiving A and B grades.

Wet Weather Grades were poor and lower than average this year with only 44% receiving A and B grades.

Winter Dry Grades were excellent and above average with 100% of the beaches earning A grades.

Guadalupe Dunes made it on the Honor Roll.

Santa Barbara County received 16 inches of rain, which is 15% above the historical average of 13 inches. This may account for the lower than average Wet Weather and Winter Dry Grades since most of the rainfall occurred in the winter months.

There were four sewage spills reported across the County comprising 2,057 gallons. No beaches were impacted, but 742 gallons did spill into surface water such as a stream, river, lake, or ocean.

A complete list of grades for Santa Barbara County can be found in Appendix B-1.
For additional water quality information:
Santa Barbara County's Environmental Health Agency
www.sbcphd.org

Santa Barbara County Grades												
	2018-2019						5-Year Avg. (2013-2018)					
	Summer Dry*		Winter Dry		Wet Weather		Summer Dry*		Winter Dry		Wet Weather	
	#	%	#	%	#	%	#	%	#	%	#	%
A	13	81%	16	100%	6	38%	15	95%	11	71%	7	43%
B	1	6%	0	0%	1	6%	1	5%	2	14%	2	15%
C	2	13%	0	0%	2	13%	0	0%	1	8%	2	11%
D	0	0%	0	0%	2	13%	0	0%	0	1%	2	10%
F	0	0%	0	0%	5	31%	0	0%	1	5%	3	21%
Total	16		16		16		16		15		16	

*State AB411 monitoring April thru October. Percentages may not add up to 100 due to rounding.

Sewage Spill Summary	
742	
GALLONS OF SEWAGE	
Total volume reported to have reached a waterbody in Santa Barbara County	

Honor Roll Grades			
	Summer Dry	Winter Dry	Wet Weather
Guadalupe Dunes	A+	A+	A+



Guadalupe Dunes

San Luis Obispo County

Summer Dry Grades were exceptional and above average with 100% of the beaches receiving A grades.

Wet Weather Grades were also exemplary and above average with 95% of the beaches receiving A and B grades.

Winter Dry Grades were superb and above average with 100% of the beaches receiving A grades.

Cayucos State Beach (downcoast of the pier), San Simeon Beach (at Pico Ave.), Sewers at Silver Shoals Dr., and Morro Bay City Beach (75 feet north of the main parking lot) made it on the Honor Roll.

San Luis Obispo County received 14 inches of rain, which is 25% higher than the historical average of 11 inches.

There were seven sewage spills reported across the County amounting to 59,500 gallons. No beaches were reportedly impacted, however, 56,500 gallons spilled into surface water such as a stream, river, lake, or ocean.

A complete list of grades for San Luis Obispo County's beach monitoring locations can be found in Appendix B-1.

For additional water quality information:

San Luis Obispo County Environmental Health Department

<https://www.slocounty.ca.gov/Departments/Health-Agency/Public-Health/Environmental-Health/All-Environmental-Health-Services/Beach-Water-Quality-Monitoring.aspx>

San Luis Obispo County Grades												
	2018-2019						5-Year Avg. (2013-2018)					
	Summer Dry*		Winter Dry		Wet Weather		Summer Dry*		Winter Dry		Wet Weather	
	#	%	#	%	#	%	#	%	#	%	#	%
A	19	100%	19	100%	18	95%	16	90%	17	89%	13	69%
B	0	0%	0	0%	0	0%	1	7%	1	4%	4	22%
C	0	0%	0	0%	0	0%	0	2%	1	4%	1	4%
D	0	0%	0	0%	1	5%	0	1%	0	1%	0	1%
F	0	0%	0	0%	0	0%	0	0%	0	1%	1	3%
Total	19		19		19		17		19		19	

*State AB411 monitoring April thru October. Percentages may not add up to 100 due to rounding.

Sewage Spill Summary	
56,500	
GALLONS OF SEWAGE	
Total volume reported to have reached a waterbody in San Luis Obispo County	

Honor Roll Grades			
	Summer Dry	Winter Dry	Wet Weather
Sam Simeon, Pico Avenue	A+	A+	A+
Cayucos State Beach, downcoast of the pier	A+	A+	A+
Morro Bay City Beach, north of main parking lot	A+	A+	A+
Sewers at Silver Shoals Drive	A+	A+	A+



Cayucos Beach

Monterey County

Summer Dry Grades were excellent and above average with 100% of the beaches receiving A and B grades.

Wet Weather Grades were sufficient but below average with only 75% of the beaches receiving A and B grades.

Monterey County does not monitor its beaches frequently enough in winter months so no Winter Dry Grade was generated and no beaches from this County were eligible for the Honor Roll.

Monterey County received 20 inches of rain, which is 23% higher than the historical average of 16 inches. However, most of the rain fell during the winter months when the beaches are not monitored, so we do not know the full impact of the increased rainfall.

There were four sewage spills across the County totaling 4,960 gallons. San Carlos Beach was impacted by a 1,300 gallon spill.

A complete list of grades for Monterey County's beach monitoring locations can be found in Appendix B-1.

For additional water quality information:

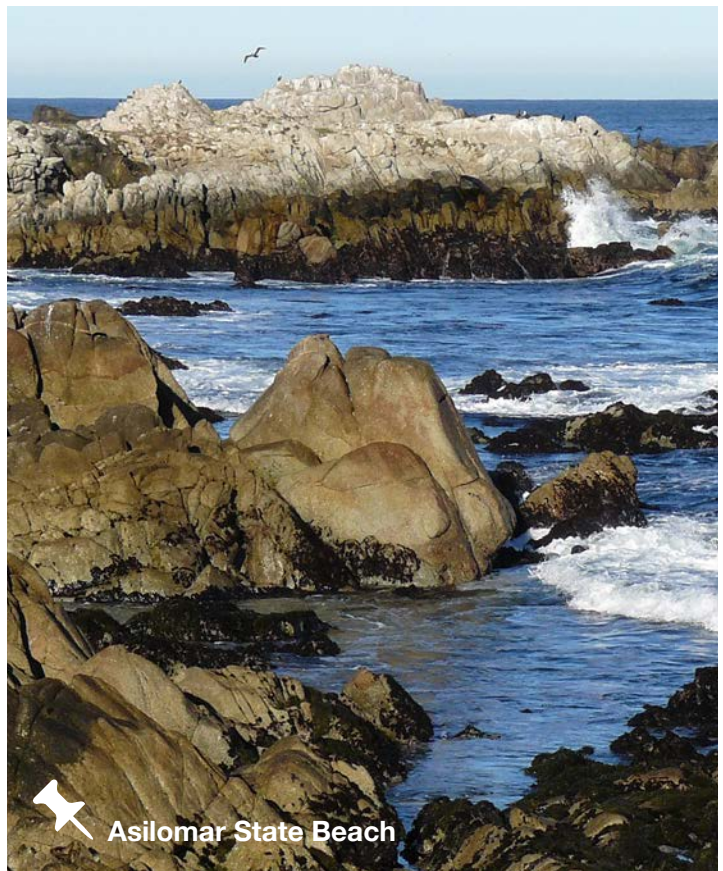
Monterey County Environmental Health Bureau

<http://www.co.monterey.ca.us/government/departments-a-h/health/environmental-health/general/public-beaches-water-quality>

Monterey County Grades												
	2018-2019						5-Year Avg. (2013-2018)					
	Summer Dry*		Winter Dry		Wet Weather		Summer Dry*		Winter Dry		Wet Weather	
	#	%	#	%	#	%	#	%	#	%	#	%
A	7	88%	n/a		6	75%	7	85%	n/a		7	88%
B	1	12%	n/a		0	0%	0	5%	n/a		0	0%
C	0	0%	n/a		0	0%	0	5%	n/a		1	13%
D	0	0%	n/a		0	0%	0	5%	n/a		0	0%
F	0	0%	n/a		2	25%	0	0%	n/a		0	0%
Total	8				8		8				8	

*State AB411 monitoring April thru October. Percentages may not add up to 100 due to rounding.

Sewage Spill Summary	
4,269	
GALLONS OF SEWAGE	
Total volume reported to have reached a waterbody in Monterey County	



Asilomar State Beach

Santa Cruz County

Summer Dry Grades were good and equal to the five-year average this year with 85% of the beaches receiving A and B grades.

Wet Weather Grades were poor and lower than average this year with only 39% of beaches receiving A and B grades.

Winter Dry Grades were superb with 100% of the beaches receiving A grades.

Natural Bridges State Beach made it on the Honor Roll list.

Cowell Beach West of The Wharf was on the Beach Bummer list for the tenth straight year. Capitola Beach, another chronic Beach Bummer in this County, was not on the list this year.

Santa Cruz County received 29 inches of rain, which is 3% higher than the historical average of 28 inches. This may account for the lower than average Wet Weather and Winter Dry Grades since most of the rainfall occurred in the winter months.

There were four reported sewage spills across the County amounting to 19,922 gallons. No beaches were reported to be impacted, however, 19,722 gallons spilled into surface water such as a stream, river, lake, or ocean.

A complete list of grades for Santa Cruz County's beach monitoring locations can be found in Appendix B-1.

For additional water quality information:
Santa Cruz County's Department of Environmental Health Services
<http://gis.co.santa-cruz.ca.us/PublicWaterQuality>

Santa Cruz County Grades												
	2018-2019						5-Year Avg. (2013-2018)					
	Summer Dry*		Winter Dry		Wet Weather		Summer Dry*		Winter Dry		Wet Weather	
	#	%	#	%	#	%	#	%	#	%	#	%
A	7	54%	7	100%	6	33%	10	77%	10	77%	10	49%
B	4	31%	0	0%	1	6%	1	8%	2	14%	3	14%
C	1	8%	0	0%	1	6%	1	5%	1	5%	4	17%
D	0	0%	0	0%	2	11%	0	3%	0	0%	1	4%
F	1	8%	0	0%	8	44%	1	8%	1	5%	3	15%
Total	13		7		18		13		13		21	

*State AB411 monitoring April thru October. Percentages may not add up to 100 due to rounding.

Sewage Spill Summary	
19,722	
GALLONS OF SEWAGE	
Total volume reported to have reached a waterbody in Santa Cruz County	

Honor Roll			
	Summer Dry	Winter Dry	Wet Weather
Natural Bridges State Beach	A+	A+	A+

Beach Bumpers			
	Summer Dry	Winter Dry	Wet Weather
Santa Cruz, Cowell Beach, west of wharf	F	A	C



San Mateo County

Summer Dry Grades were good and better than average this year with 89% of the beaches receiving A and B grades.

Wet Weather Grades were poor and substantially lower this year with only 36% of the beaches receiving A and B grades.

San Mateo County does not monitor its beaches frequently enough in winter months so no Winter Dry Grade was assigned and no beaches from this County were eligible for the Honor Roll.

Aquatic Park and Linda Mar Beach at San Pedro Creek were on the Beach Bummers list. This is an improvement from last year when there were four San Mateo County beaches on the list.

San Mateo County received 26 inches of rain, which is 20% higher than the historical average of 22 inches. However, most of the rain fell during the winter months when the beaches are not monitored, so we do not know the full impact of the increased rainfall.

There were 35 sewage spills reported across the County equaling 223,606 gallons. Pacifica State Beach and Aquatic Park were impacted by spills. A spill in the Foster City Lagoon reportedly did not impact any beaches, however the spill location was close to Kiteboard Beach and Erckenbrack Park.

A complete list of grades for San Mateo County's beach monitoring locations can be found in Appendix B-1.

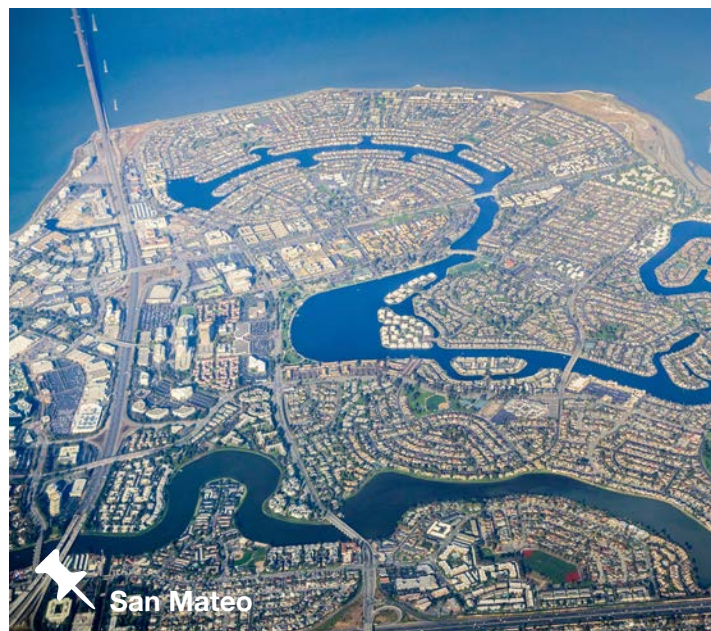
For additional water quality information:
San Mateo County
<http://smchealth.org/enviro/ beaches>

San Mateo County Grades												
	2018-2019						5-Year Avg. (2013-2018)					
	Summer Dry*		Winter Dry		Wet Weather		Summer Dry*		Winter Dry		Wet Weather	
	#	%	#	%	#	%	#	%	#	%	#	%
A	10	53%	n/a		7	28%	16	74%	13	68%	7	33%
B	7	37%	n/a		2	8%	2	9%	2	11%	3	15%
C	0	0%	n/a		4	16%	2	8%	2	8%	2	9%
D	1	5%	n/a		0	0%	0	2%	0	2%	3	14%
F	1	5%	n/a		12	48%	2	8%	2	11%	7	29%
Total	19				25		21		20		23	

*State AB411 monitoring April thru October. Percentages may not add up to 100 due to rounding.

Sewage Spill Summary	
155,107	
GALLONS OF SEWAGE	
Total volume reported to have reached a waterbody in San Mateo County	

Beach Bummers			
	Summer Dry	Winter Dry	Wet Weather
Linda Mar Beach, at San Pedro Creek	F	n/a	F
Aquatic Park	D	n/a	A



East Bay: Contra Costa & Alameda Counties

Summer Dry Grades were passing but below average with only 75% of the beaches receiving A and B grades.

Wet Weather Grades were poor and below average with only 50% of the beaches receiving A and B grades.

Beaches in Alameda County and Contra Costa County are not monitored enough in the winter months so no Winter Dry Grade was issued and no beaches are eligible for the Honor Roll.

Keller Beach South Beach made it on the Beach Bummers list.

Alameda County and Contra Costa County received 26 inches of rain, which is 20% higher than the historical average of 22 inches. However, most of the rain fell during the winter months when the beaches are not monitored, therefore we do not know the full impact of the increased rainfall.

There were 71 sewage spills across both Counties totaling 2.5 million gallons. No beaches were reportedly impacted, however 99% of the sewage spilled into surface water such as a stream, river, lake, or ocean.

A complete list of grades for Contra Costa and Alameda counties beach monitoring locations can be found in Appendix B-1.

For additional information: East Bay Regional Park District
www.ebparks.org

East Bay (Combined) Grades												
	2018-2019						5-Year Avg. (2013-2018)					
	Summer Dry*		Winter Dry		Wet Weather		Summer Dry*		Winter Dry		Wet Weather	
	#	%	#	%	#	%	#	%	#	%	#	%
A	5	63%	n/a		3	38%	7	74%	n/a		6	63%
B	1	13%	n/a		1	13%	2	20%	n/a		1	8%
C	0	0%	n/a		1	13%	1	7%	n/a		1	10%
D	2	25%	n/a		0	0%	0	0%	n/a		1	8%
F	0	0%	n/a		3	38%	0	0%	n/a		1	10%
Total	8				8		9				10	

*State AB411 monitoring April thru October. Percentages may not add up to 100 due to rounding.

	Contra Costa County						Alameda County					
	2018-2019						2018-2019					
	Summer Dry*		Winter Dry		Wet Weather		Summer Dry*		Winter Dry		Wet Weather	
	#	%	#	%	#	%	#	%	#	%	#	%
A	0	0%	n/a		1	50%	5	83%	n/a		2	33%
B	1	50%	n/a		1	50%	0	0%	n/a		0	0%
C	0	0%	n/a		0	0%	0	0%	n/a		1	17%
D	1	50%	n/a		0	0%	1	17%	n/a		0	0%
F	0	0%	n/a		0	0%	0	0%	n/a		3	50%
Total	2				2		6				6	

Sewage Spill Summary	
2,500,000	
GALLONS OF SEWAGE	
Total volume reported to have reached a waterbody in East Bay counties	

Beach Bummers			
	Summer Dry	Winter Dry	Wet Weather
Richmond, Keller Beach, South Beach	D	n/a	A

San Francisco County

Summer Dry Grades were exceptional and above average with 94% of the beaches receiving an A and B grade.

Wet Weather Grades were poor and slightly below average this year with just 42% receiving A and B grades.

Winter Dry Grades were superb and above average with 100% of the beaches receiving A and B grades.

San Francisco County received 26 inches of rain, which is 20% higher than the historical average of 22 inches. However, rain runoff generally has a lower impact on San Francisco beaches because their stormwater flows into the sewer system and gets treated.

There were four reported sewage spills across the County summing to 19,780 gallons. No beaches were reported as impacted, however, 100% of the sewage spilled into surface water such as a stream, river, lake, or ocean.

A complete list of grades for San Francisco County's beach monitoring locations can be found in Appendix B-1.

Background Information from the San Francisco Public Utilities Commission
For additional water quality information:
San Francisco Public Utilities Commission
<http://beaches.sfwater.org>

San Francisco County Grades												
	2018-2019						5-Year Avg. (2013-2018)					
	Summer Dry*		Winter Dry		Wet Weather		Summer Dry*		Winter Dry		Wet Weather	
	#	%	#	%	#	%	#	%	#	%	#	%
A	13	81%	14	88%	7	37%	12	81%	10	70%	4	27%
B	2	13%	2	12%	1	5%	1	10%	1	5%	3	20%
C	1	6%	0	0%	3	16%	1	7%	1	5%	3	17%
D	0	0%	0	0%	1	5%	0	1%	1	5%	1	7%
F	0	0%	0	0%	7	27%	0	1%	2	14%	5	29%
Total	16		16		19		14		15		17	

*State AB411 monitoring April thru October. Percentages may not add up to 100 due to rounding.

Sewage Spill Summary

19,780

GALLONS OF SEWAGE

Total volume reported to have reached a waterbody in San Francisco County



Marin County

Summer Dry Grades were excellent with 100% of the beaches receiving A and B grades.

Wet Weather Grades were passable but below average with only 75% of the beaches receiving A and B grades.

Marin County does not monitor its beaches frequently enough in winter months so no Winter Dry Grade was calculated and no beaches from this County were eligible for the Honor Roll.

Marin County received 26 inches of rain, which is 20% higher than the historical average of 22 inches. However, most of the rain fell during the winter months when the beaches are not monitored, so we do not know the full impact of the increased rainfall.

There were 41 reported sewage spills across the County totaling 361,657 gallons. Schoonmaker Beach was impacted by a 750 gallon spill.

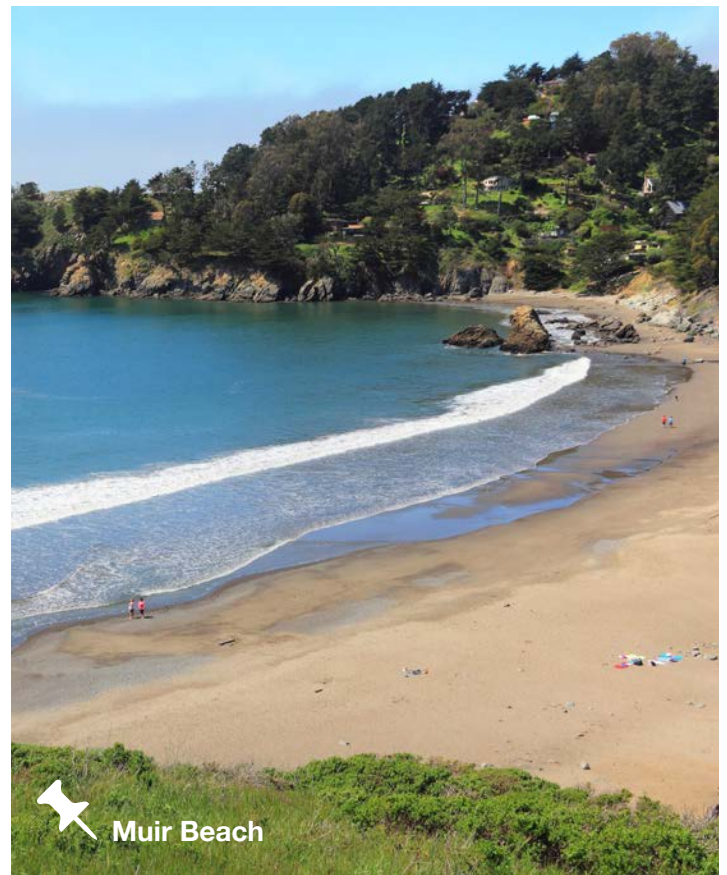
A complete list of grades for Marin County's beach monitoring locations can be found in Appendix B-1.

For additional water quality information:
Marin County's Department of Environmental Health
www.marincounty.org/ehs

Marin County Grades												
	2018-2019						5-Year Avg. (2013-2018)					
	Summer Dry*		Winter Dry		Wet Weather		Summer Dry*		Winter Dry		Wet Weather	
	#	%	#	%	#	%	#	%	#	%	#	%
A	22	92%	n/a		17	71%	22	94%	n/a		20	87%
B	2	8%	n/a		1	4%	1	5%	n/a		1	2%
C	0	0%	n/a		1	4%	0	1%	n/a		0	0%
D	0	0%	n/a		0	0%	0	0%	n/a		2	7%
F	0	0%	n/a		5	21%	0	0%	n/a		1	4%
Total	24				24		23				23	

*State AB411 monitoring April thru October. Percentages may not add up to 100 due to rounding.

Sewage Spill Summary	
247,861	
GALLONS OF SEWAGE	
Total volume reported to have reached a waterbody in Marin County	



Muir Beach

Sonoma County

Summer Dry and Wet Weather Grades were exceptional with 100% of the beaches receiving A grades.

Sonoma County does not monitor its beaches frequently enough in winter months so no Winter Dry Grade was generated and no beaches from this County were eligible for the Honor Roll.

Sonoma County received 45 inches of rain, which is 46% higher than the historical average of 31 inches. However, most of the rain fell during the winter months when the beaches are not monitored, so we do not know the full impact of the increased rainfall.

There were 45 sewage spills across the County totalling 2.8 million gallons. This is the highest amount of sewage spilled in a California coastal county this year. No beaches were reportedly impacted, but three spills occurred in the Russian River (upstream of Goat Rock State Park beaches).

A complete list of grades for Sonoma County's beach monitoring locations can be found in Appendix B-1.

For additional water quality information:
Sonoma County's Department of Environmental Health
www.sonoma-county.org/health/services/ocean.asp

Sonoma County Grades												
	2018-2019						5-Year Avg. (2013-2018)					
	Summer Dry*		Winter Dry		Wet Weather		Summer Dry*		Winter Dry		Wet Weather	
	#	%	#	%	#	%	#	%	#	%	#	%
A	7	100%	n/a		7	100%	7	100%	n/a		7	96%
B	0	0%	n/a		0	0%	0	0%	n/a		0	4%
C	0	0%	n/a		0	0%	0	0%	n/a		0	0%
D	0	0%	n/a		0	0%	0	0%	n/a		0	0%
F	0	0%	n/a		0	0%	0	0%	n/a		0	0%
Total	7				7		7				7	

*State AB411 monitoring April thru October. Percentages may not add up to 100 due to rounding.

Sewage Spill Summary
2,800,00
GALLONS OF SEWAGE
Total volume reported to have reached a waterbody in Sonoma County



Mendocino County

Summer Dry Grades were excellent and above average with 100% of the beaches receiving A grades.

Wet Weather Grades were below average with only 66% of the beaches receiving A and B grades.

Mendocino County does not monitor its beaches frequently enough in the winter months so there is no Winter Dry Grade and no beaches were eligible for the Honor Roll.

Mendocino County received 44 inches of rain, which is 9% higher than the historical average of 40 inches. However, most of the rain fell during the winter months when the beaches are not monitored, so we do not know the full impact of the increased rainfall.

There were two sewage spills across the County equaling 3,086 gallons. No beaches were reportedly impacted, but a portion of both spills impacted surface water such as a stream, river, lake, or ocean.

A complete list of grades for Mendocino County's beach monitoring locations can be found in Appendix B-1.

For additional water quality information:
www.co.mendocino.ca.us/hhsa/chs/eh/index.htm

Mendocino County Grades												
	2018-2019						5-Year Avg. (2013-2018)					
	Summer Dry*		Winter Dry		Wet Weather		Summer Dry*		Winter Dry		Wet Weather	
	#	%	#	%	#	%	#	%	#	%	#	%
A	6	100%	n/a		4	66%	5	93%	n/a		4	71%
B	0	0%	n/a		0	0%	0	4%	n/a		1	8%
C	0	0%	n/a		1	17%	0	4%	n/a		1	21%
D	0	0%	n/a		1	17%	0	0%	n/a		0	0%
F	0	0%	n/a		0	0%	0	0%	n/a		0	0%
Total	6				6		5				6	

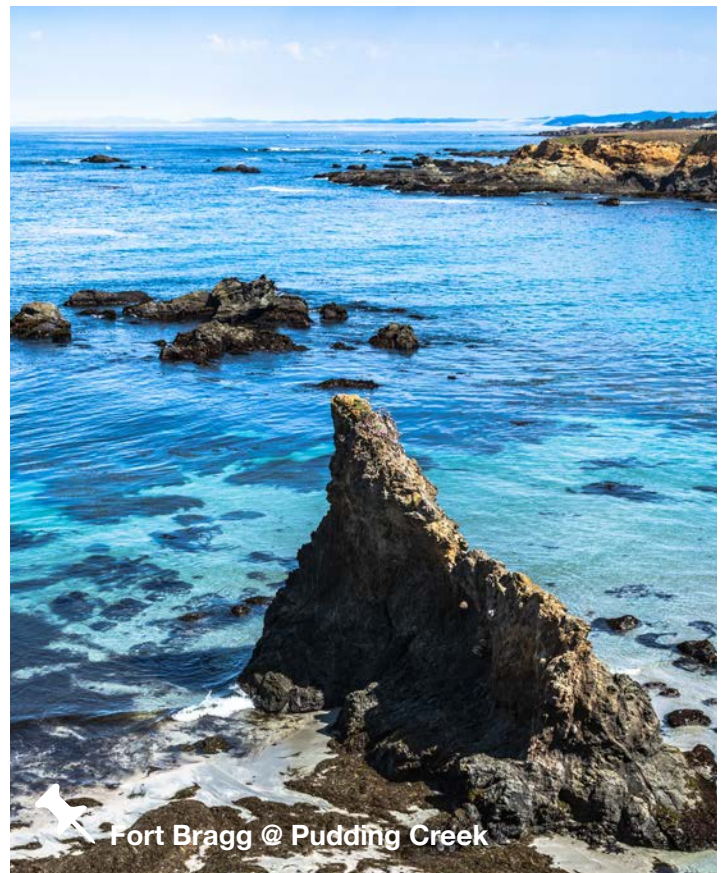
*State AB411 monitoring April thru October. Percentages may not add up to 100 due to rounding.

Sewage Spill Summary

3,030

GALLONS OF SEWAGE

Total volume reported to have reached a waterbody in Mendocino County



Humboldt County

Summer Dry Grades were far below average this year with just 40% of the beaches receiving A and B grades.

Wet Weather Grades were excellent and above average this year with 100% of the beaches receiving A and B grades.

Humboldt County does not monitor its beaches frequently enough in the winter months so there is no Winter Dry Grade and no beaches were eligible for the Honor Roll.

Clam Beach at Strawberry Creek was a Beach Bummer for the sixth straight year. Luffenholtz Beach did not appear on the Beach Bummer list this year.

Humboldt County received 43 inches of rain, which is 6% higher than the historical average of 41 inches. However, most of the rain fell during the winter months when the beaches are not monitored, so we do not know the full impact of the increased rainfall.

There were 15 reported sewage spills across the County amounting to 251,910 gallons. No beaches were reportedly impacted by these spills, however 134,902 gallons spilled into surface water such as a stream, river, lake, or ocean.

A complete list of grades for Humboldt County's beach monitoring locations can be found in Appendix B-1.

For additional water quality information:

Humboldt County's Department of Health & Human Services

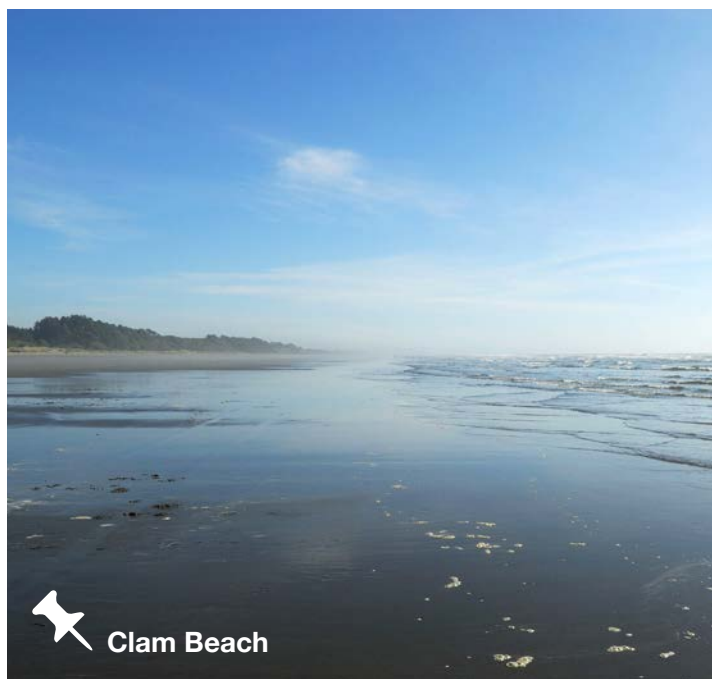
<https://humboldt.gov.org/1696/Water-Quality-Test-Results>

Humboldt County Grades												
	2018-2019						5-Year Avg. (2013-2018)					
	Summer Dry*		Winter Dry		Wet Weather		Summer Dry*		Winter Dry		Wet Weather	
	#	%	#	%	#	%	#	%	#	%	#	%
A	2	40%	n/a		2	40%	3	56%	n/a		2	30%
B	0	0%	n/a		3	60%	0	4%	n/a		1	15%
C	2	40%	n/a		0	0%	1	12%	n/a		1	15%
D	0	0%	n/a		0	0%	0	8%	n/a		1	20%
F	1	20%	n/a		0	0%	1	20%	n/a		1	20%
Total	5				5		5				5	

*State AB411 monitoring April thru October. Percentages may not add up to 100 due to rounding.

Sewage Spill Summary	
134,902	
GALLONS OF SEWAGE	
Total volume reported to have reached a waterbody in Humboldt County	

Beach Bumpers			
	Summer Dry	Winter Dry	Wet Weather
Clam Beach County Park, McKinleyville	F	n/a	B



Clam Beach

Photo: Nicholas Turland

Del Norte County

Del Norte County is the northernmost coastal County in California, and there is only one beach that is monitored: Crescent City Beach at Battery Point Lighthouse. This beach received an A+ for Summer Dry and Wet Weather Grades, which is what it has historically been issued.

Del Norte County does not monitor in the winter months, so there is no Winter Dry Grade and its beach was not eligible for the Honor Roll.

This county received 50 inches of rain this past year, which is more than any other County in California. But, this was 14% below the County's historical average of 58 inches. Del Norte County was the only county in California to receive less than average rainfall this year.

There were five sewage spills reported across the County totaling 30,575 gallons. Four beaches were impacted by the spills, but these beaches are not monitored for recreational water quality.

A complete list of grades for Del Norte County's beach monitoring locations can be found in Appendix B-1.

For additional water quality information:

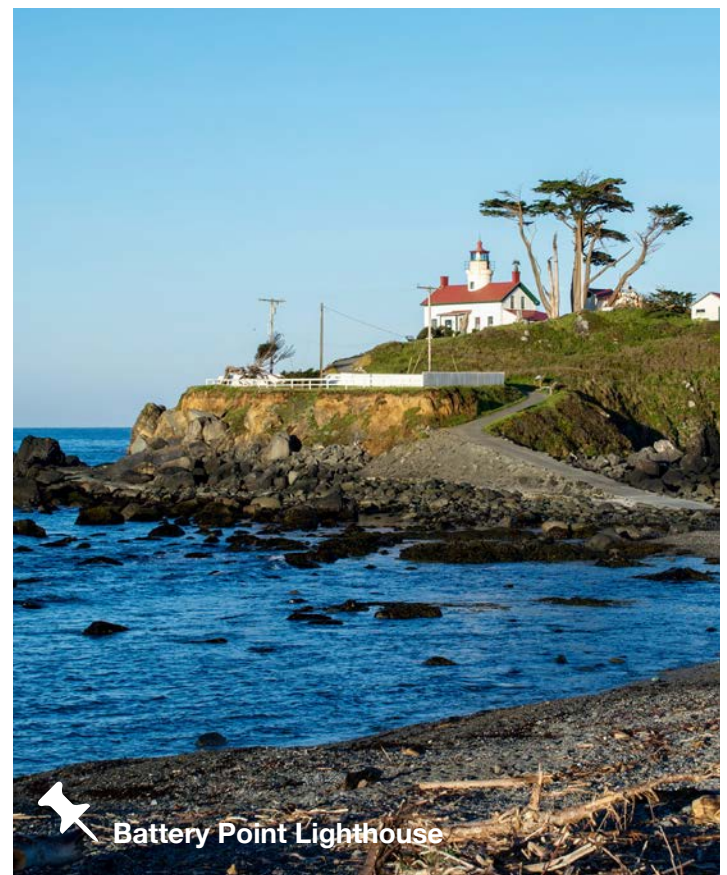
County of Del Norte Environmental Health Division

www.co.del-norte.ca.us/departments/community-development-department/environmental-health-division

Del Norte County Grades												
	2018-2019						5-Year Avg. (2013-2018)					
	Summer Dry*		Winter Dry		Wet Weather		Summer Dry*		Winter Dry		Wet Weather	
	#	%	#	%	#	%	#	%	#	%	#	%
A	1	100%	n/a		1	100%	5	100%	n/a		5	100%
B	0	0%	n/a		0	0%	0	0%	n/a		0	0%
C	0	0%	n/a		0	0%	0	0%	n/a		0	0%
D	0	0%	n/a		0	0%	0	0%	n/a		0	0%
F	0	0%	n/a		0	0%	0	0%	n/a		0	0%
Total	1				1							

*State AB411 monitoring April thru October. Percentages may not add up to 100 due to rounding.

Sewage Spill Summary	
30,460	
GALLONS OF SEWAGE	
Total volume reported to have reached a waterbody in Del Norte County	



Battery Point Lighthouse

IV. PACIFIC NORTHWEST COUNTY SUMMARIES



Cannon Beach, Oregon

COASTAL COUNTIES: OREGON & WASHINGTON

Heal the Bay has been analyzing beach water quality in Oregon and Washington since 2010. Both states sample water quality for one fecal indicator bacteria, *Enterococcus*, between Memorial Day and Labor Day.

OREGON

Note: All averages below refer to the five-year-average unless otherwise indicated.

Oregon's Department of Environmental Quality samples water quality at ocean beaches between Memorial Day and Labor Day and tests for one fecal indicator bacteria, *Enterococcus*. This is in contrast to California, which requires three indicator bac-

teria to be sampled from April 1 to October 31 every year. Funding for ocean beach monitoring in Oregon comes entirely from the U.S. EPA's Beaches Environmental Assessment and Coastal Health Act (BEACH Act).

For the fourth straight year, we were unable to grade most of Oregon beaches due to a lack of sampling. Our methodology requires that beaches must be sampled for at least

IV. PACIFIC NORTHWEST COUNTY SUMMARIES

Oregon & Washington (continued)

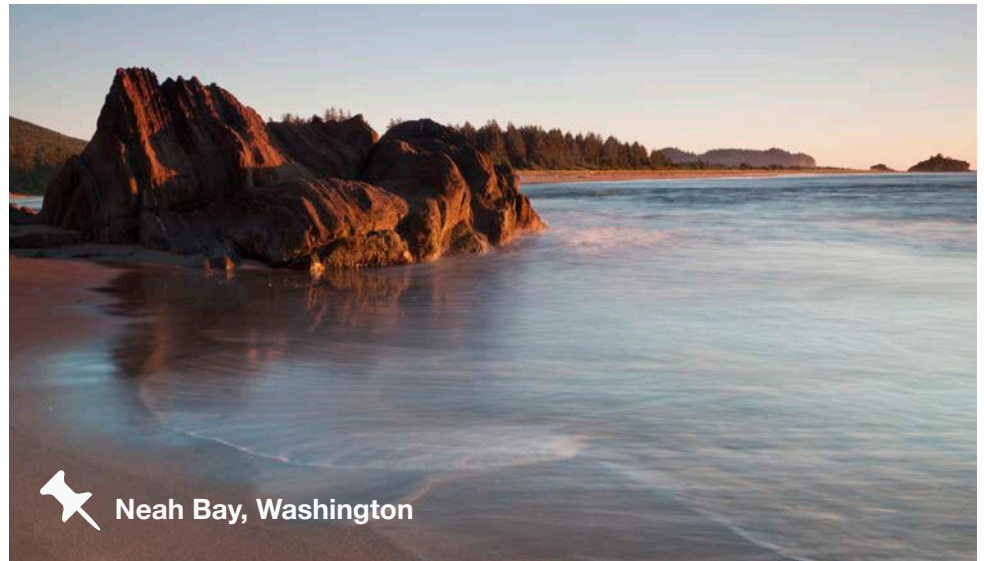
75% of the weeks in their summer season — defined as Memorial Day through Labor Day. We encourage the State of Oregon to provide additional funding for increased ocean water quality monitoring.

We were able to calculate grades for nine beaches in Clatsop, Coos, and Lincoln Counties this year because they met our grading threshold. Summer Dry grades were good with 78% of the beaches receiving A and B grades. Wet Weather grades were slightly better with 88% receiving A and B grades. Oregon beaches are not monitored in the winter months so Winter Dry Grades could not be assigned.

For additional water quality information:

Oregon Health Authority

<http://public.health.oregon.gov/HealthyEnvironments/Recreation/BeachWaterQuality/Pages/index.aspx>



WASHINGTON

Note: All averages below refer to the five-year-average unless otherwise indicated.

Washington's Department of Ecology samples water quality at ocean beaches between Memorial Day and Labor Day and tests for one fecal indicator bacteria, Enterococcus. This is in contrast to California, which requires three indicator bacteria to be sampled from April 1 to October 31 every year. Approximately 80% of the funding for ocean beach monitoring in the State comes from the BEACH Act, and the remaining 20% of funding comes from the U.S. EPA's National Estuary Program's Pathogen Prevention, Reduction, and Control Grant. The Makah Tribe also contributes beach monitoring to the State through separate BEACH Program Tribal funding. Unlike the rest

of the state, the Makah Tribe monitors beaches in Clallam County year round.

Summer Dry Grades were excellent and above average with 97% of the beaches receiving A and B grades. Wet Weather Grades were exceptional and far above average with 96% receiving A and B grades. Only Clallam County beaches were sampled in the winter months so Winter Dry Grades were only issued to those beaches.

Wet weather grades in Washington are based on a significant rainfall event of 0.2 inches or more and the 72 hours following the rain event.

A complete list of grades for Washington State's monitoring locations can be found in Appendix B-2.

Information and photos generously provided by the Washington Department of Health and Department of Ecology.

For additional water quality information: State of Washington's Department of Ecology
www.ecy.wa.gov/programs/eap/beach/index.html

Current beach closure and advisory information can be found at:
<http://ecologywa.blogspot.com/search/label/Fecal%20matters>

IV. PACIFIC NORTHWEST COUNTY SUMMARIES

TABLE 4-1: OREGON / WASHINGTON STATE GRADES

Oregon State Grades												
	2018-2019						5-Year Avg. (2013-2018)					
	Summer Dry		Winter Dry		Wet Weather		Summer Dry*		Winter Dry		Wet Weather	
	#	%	#	%	#	%	#	%	#	%	#	%
A	7	78%	n/a		6	75%	21	95%	n/a		19	86%
B	0	0%	n/a		1	13%	1	5%	n/a		0	0%
C	0	0%	n/a		0	0%	0	0%	n/a		0	0%
D	1	11%	n/a		1	13%	0	0%	n/a		2	9%
F	1	11%	n/a		0	0%	0	0%	n/a		1	5%
Total	9				8		22				22	

TABLE 4-2: OREGON GRADES BY COUNTY

Clatsop County														
	2018-2019						5-Year Avg. (2013-2018)							
	Summer Dry		Winter Dry		Wet Weather		Summer Dry*		Winter Dry		Wet Weather			
	#	%	#	%	#	%	#	%	#	%	#	%		
A	1	100%	n/a		n/a		16	100%	n/a		13	81%		
B	0	0%	n/a		n/a		0	0%	n/a		0	0%		
C	0	0%	n/a		n/a		0	0%	n/a		0	0%		
D	0	0%	n/a		n/a		0	0%	n/a		2	13%		
F	0	0%	n/a		n/a		0	0%	n/a		1	6%		
Total	1						16						16	

Washington State Grades												
	2018-2019						5-Year Avg. (2013-2018)					
	Summer Dry		Winter Dry		Wet Weather		Summer Dry*		Winter Dry		Wet Weather	
	#	%	#	%	#	%	#	%	#	%	#	%
A	161	94%	n/a		133	94%	743	91%	14	97%	513	77%
B	6	3%	n/a		2	1%	21	3%	0	0%	29	4%
C	2	1%	n/a		2	1%	22	3%	0	0%	27	4%
D	3	2%	n/a		1	1%	10	1%	0	0%	80	6%
F	0	0%	n/a		1	2%	22	2%	1	3%	57	9%
Total	172				141		809		15		666	

Coos County												
	2018-2019						5-Year Avg. (2013-2018)					
	Summer Dry		Winter Dry		Wet Weather		Summer Dry*		Winter Dry		Wet Weather	
	#	%	#	%	#	%	#	%	#	%	#	%
A	3	100%	n/a		1	33%	n/a		n/a		n/a	
B	0	0%	n/a		1	33%	n/a		n/a		n/a	
C	0	0%	n/a		0	0%	n/a		n/a		n/a	
D	0	0%	n/a		1	33%	n/a		n/a		n/a	
F	0	0%	n/a		0	0%	n/a		n/a		n/a	
Total	3				3							

Lincoln County												
	2018-2019						5-Year Avg. (2013-2018)					
	Summer Dry		Winter Dry		Wet Weather		Summer Dry*		Winter Dry		Wet Weather	
	#	%	#	%	#	%	#	%	#	%	#	%
A	3	60%	n/a		5	100%	n/a		n/a		n/a	
B	0	0%	n/a		0	0%	n/a		n/a		n/a	
C	0	0%	n/a		0	0%	n/a		n/a		n/a	
D	1	20%	n/a		0	0%	n/a		n/a		n/a	
F	1	20%	n/a		0	0%	n/a		n/a		n/a	
Total	5				5							

IV. PACIFIC NORTHWEST COUNTY SUMMARIES

TABLE 4-3: WASHINGTON GRADES BY COUNTY

Clallam County												
	2018-2019						5-Year Avg. (2013-2018)					
	Summer Dry		Winter Dry		Wet Weather		Summer Dry*		Winter Dry		Wet Weather	
	#	%	#	%	#	%	#	%	#	%	#	%
A	10	83%	15	100%	10	83%	218	88%	n/a		180	76%
B	1	8%	0	0%	2	17%	9	4%	n/a		11	4%
C	1	8%	0	0%	0	0%	4	4%	n/a		13	5%
D	0	0%	0	0%	0	0%	5	2%	n/a		17	7%
F	0	0%	0	0%	0	0%	5	2%	n/a		18	7%
Total	12		15		12		248				249	

Kitsap County												
	2018-2019						5-Year Avg. (2013-2018)					
	Summer Dry		Winter Dry		Wet Weather		Summer Dry*		Winter Dry		Wet Weather	
	#	%	#	%	#	%	#	%	#	%	#	%
A	33	100%	n/a		33	100%	167	96%	n/a		108	80%
B	0	0%	n/a		0	0%	8	2%	n/a		4	3%
C	0	0%	n/a		0	0%	1	1%	n/a		5	4%
D	0	0%	n/a		0	0%	2	1%	n/a		8	6%
F	0	0%	n/a		0	0%	1	1%	n/a		10	7%
Total	33				33		174				135	

Skagit County												
	2018-2019						5-Year Avg. (2013-2018)					
	Summer Dry		Winter Dry		Wet Weather		Summer Dry*		Winter Dry		Wet Weather	
	#	%	#	%	#	%	#	%	#	%	#	%
A	3	100%	n/a		3	100%	11	85%	n/a		3	23%
B	0	0%	n/a		0	0%	0	0%	n/a		0	0%
C	0	0%	n/a		0	0%	2	15%	n/a		0	0%
D	0	0%	n/a		0	0%	0	0%	n/a		1	8%
F	0	0%	n/a		0	0%	0	0%	n/a		9	69%
Total	3				3		12				13	

Mason County												
	2018-2019						5-Year Avg. (2013-2018)					
	Summer Dry		Winter Dry		Wet Weather		Summer Dry*		Winter Dry		Wet Weather	
	#	%	#	%	#	%	#	%	#	%	#	%
A	9	100%	n/a		9	100%	41	80%	n/a		30	71%
B	0	0%	n/a		0	0%	4	8%	n/a		2	5%
C	0	0%	n/a		0	0%	3	6%	n/a		2	5%
D	0	0%	n/a		0	0%	0	0%	n/a		2	5%
F	0	0%	n/a		0	0%	3	6%	n/a		6	14%
Total	9				9		51				42	

Snohomish County												
	2018-2019						5-Year Avg. (2013-2018)					
	Summer Dry		Winter Dry		Wet Weather		Summer Dry*		Winter Dry		Wet Weather	
	#	%	#	%	#	%	#	%	#	%	#	%
A	15	100%	n/a		15	100%	78	96%	n/a		54	82%
B	0	0%	n/a		0	0%	1	1%	n/a		2	3%
C	0	0%	n/a		0	0%	2	2%	n/a		4	6%
D	0	0%	n/a		0	0%	0	0%	n/a		1	2%
F	0	0%	n/a		0	0%	0	0%	n/a		5	8%
Total	15				15		81				66	

Island County												
	2018-2019						5-Year Avg. (2013-2018)					
	Summer Dry		Winter Dry		Wet Weather		Summer Dry*		Winter Dry		Wet Weather	
	#	%	#	%	#	%	#	%	#	%	#	%
A	7	78%	n/a		8	80%	17	52%	n/a		21	78%
B	2	22%	n/a		0	0%	0	0%	n/a		1	4%
C	0	0%	n/a		1	11%	2	6%	n/a		0	0%
D	0	0%	n/a		0	0%	4	12%	n/a		1	4%
F	0	0%	n/a		0	0%	10	30%	n/a		4	15%
Total	9				9		33				27	

IV. PACIFIC NORTHWEST COUNTY SUMMARIES

TABLE 4-4: WASHINGTON GRADES BY COUNTY

Whatcom County												
	2018-2019						5-Year Avg. (2013-2018)					
	Summer Dry		Winter Dry		Wet Weather		Summer Dry*		Winter Dry		Wet Weather	
	#	%	#	%	#	%	#	%	#	%	#	%
A	4	67%	n/a		6	100%	21	68%	n/a		12	39%
B	0	0%	n/a		0	0%	1	3%	n/a		4	13%
C	1	17%	n/a		0	0%	2	6%	n/a		3	10%
D	1	17%	n/a		0	0%	1	3%	n/a		3	10%
F	0	0%	n/a		0	0%	6	19%	n/a		9	29%
Total	6				6		31				31	

Pierce County												
	2018-2019						5-Year Avg. (2013-2018)					
	Summer Dry		Winter Dry		Wet Weather		Summer Dry*		Winter Dry		Wet Weather	
	#	%	#	%	#	%	#	%	#	%	#	%
A	26	100%	n/a		7	100%	116	93%	n/a		91	90%
B	0	0%	n/a		0	0%	3	2%	n/a		1	1%
C	0	0%	n/a		0	0%	3	2%	n/a		4	4%
D	0	0%	n/a		0	0%	2	2%	n/a		1	1%
F	0	0%	n/a		0	0%	1	1%	n/a		4	4%
Total	26				7		125				101	

Jefferson County												
	2018-2019						5-Year Avg. (2013-2018)					
	Summer Dry		Winter Dry		Wet Weather		Summer Dry*		Winter Dry		Wet Weather	
	#	%	#	%	#	%	#	%	#	%	#	%
A	6	100%	n/a		6	100%	20	91%	n/a		13	81%
B	0	0%	n/a		0	0%	2	9%	n/a		0	0%
C	0	0%	n/a		0	0%	0	0%	n/a		1	6%
D	0	0%	n/a		0	0%	0	0%	n/a		2	13%
F	0	0%	n/a		0	0%	0	0%	n/a		0	0%
Total	6				6		22				16	

Gray's Harbor County												
	2018-2019						5-Year Avg. (2013-2018)					
	Summer Dry		Winter Dry		Wet Weather		Summer Dry*		Winter Dry		Wet Weather	
	#	%	#	%	#	%	#	%	#	%	#	%
A	9	100%	n/a		9	100%	45	100%	n/a		35	97%
B	0	0%	n/a		0	0%	0	0%	n/a		0	0%
C	0	0%	n/a		0	0%	0	0%	n/a		0	0%
D	0	0%	n/a		0	0%	0	0%	n/a		0	0%
F	0	0%	n/a		0	0%	0	0%	n/a		1	3%
Total	9				9		45				35	

King County												
	2018-2019						5-Year Avg. (2013-2018)					
	Summer Dry		Winter Dry		Wet Weather		Summer Dry*		Winter Dry		Wet Weather	
	#	%	#	%	#	%	#	%	#	%	#	%
A	28	93%	n/a		26	96%	110	95%	n/a		57	66%
B	2	7%	n/a		0	0%	3	3%	n/a		7	8%
C	0	0%	n/a		1	4%	2	2%	n/a		3	3%
D	0	0%	n/a		0	0%	0	0%	n/a		13	15%
F	0	0%	n/a		0	0%	1	1%	n/a		6	7%
Total	30				27		116				86	

Thurston County												
	2018-2019						5-Year Avg. (2013-2018)					
	Summer Dry		Winter Dry		Wet Weather		Summer Dry*		Winter Dry		Wet Weather	
	#	%	#	%	#	%	#	%	#	%	#	%
A	3	100%	n/a		n/a		13	87%	n/a		5 42%	
B	0	0%	n/a		n/a		1	7%	n/a		4 33%	
C	0	0%	n/a		n/a		1	7%	n/a		2 17%	
D	0	0%	n/a		n/a		0	0%	n/a		0 0%	
F	0	0%	n/a		n/a		0	0%	n/a		1 8%	
Total	93						15 12					

appendices

2018-2019

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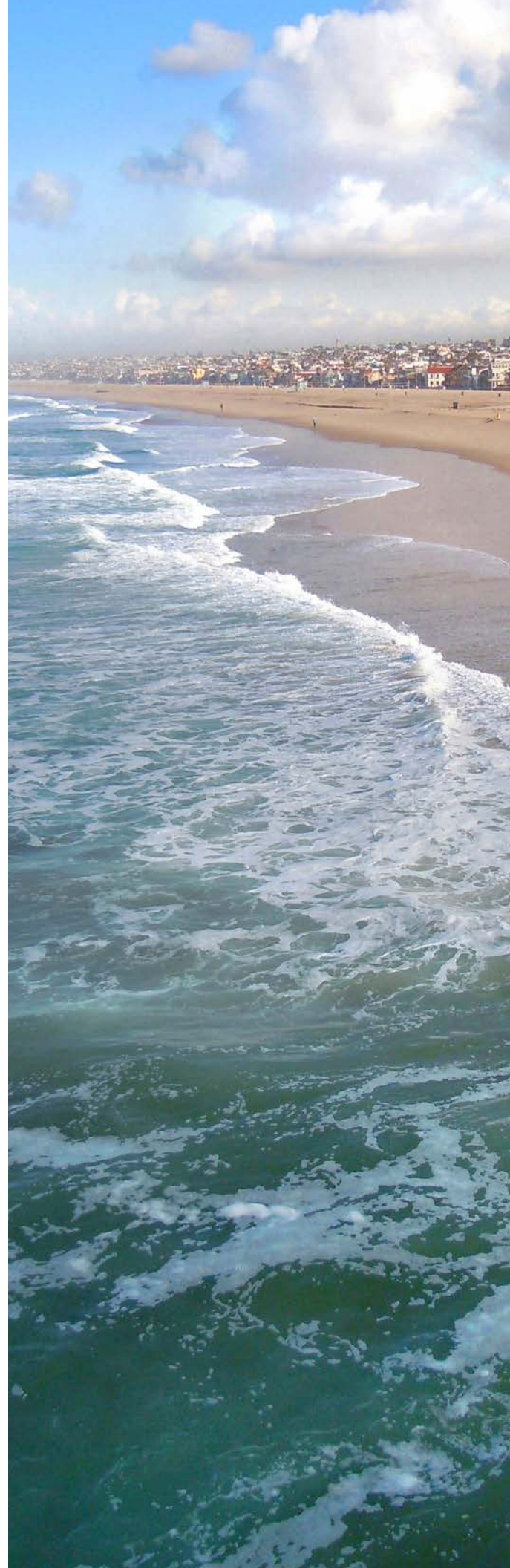
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BEACH BUMMERS TOP TEN HISTORY: 2012-2019

● First appearance

2019	2018	2017	2016 ▼
San Clemente Pier ORANGE COUNTY	Poche Beach ORANGE COUNTY	Clam Beach County Park HUMBOLDT COUNTY	Cowell Beach SANTA CRUZ COUNTY
Clam Beach County Park HUMBOLDT COUNTY	Marina Lagoon, Lakeshore Park SAN MATEO COUNTY	San Clemente Pier ORANGE COUNTY	Clam Beach County Park HUMBOLDT COUNTY
Linda Mar Beach SAN MATEO COUNTY	Linda Mar Beach SAN MATEO COUNTY	Cowell Beach SANTA CRUZ COUNTY	Shelter Island (Shoreline Park) SAN DIEGO COUNTY
Long Beach @ Coronado Ave. ●	Clam Beach County Park HUMBOLDT COUNTY	Marina Lagoon, Lakeshore Park SAN MATEO COUNTY	Monarch Beach (North) ORANGE COUNTY
Cowell Beach SANTA CRUZ COUNTY	Roosevelt Beach SAN MATEO COUNTY	La Jolla Cove SAN DIEGO COUNTY	Santa Monica Pier LOS ANGELES COUNTY
Monarch Beach, Dana Point ORANGE COUNTY	Luffenholtz Beach HUMBOLDT COUNTY	Santa Monica Pier LOS ANGELES COUNTY	Mother's Beach, MDR LOS ANGELES COUNTY
Mother's Beach, MDR LOS ANGELES COUNTY	Santa Monica Pier LOS ANGELES COUNTY	Capitola Beach SANTA CRUZ COUNTY	Redondo Beach Pier LOS ANGELES COUNTY
Cabrillo Beach, harborside LOS ANGELES COUNTY	Cowell Beach SANTA CRUZ COUNTY	Luffenholtz Beach HUMBOLDT COUNTY	Candlestick Point SAN FRANCISCO COUNTY
Keller Beach, South Beach ●	Cabrillo Beach, harborside LOS ANGELES COUNTY	Mother's Beach, MDR LOS ANGELES COUNTY	Pillar Point Harbor SAN MATEO COUNTY
Marina Lagoon, Aquatic Park SAN MATEO COUNTY	Surfer's Beach SAN MATEO COUNTY	Monarch Beach, Dana Point ORANGE COUNTY	Pismo Beach Pier SAN LUIS OBISPO COUNTY
2015	2014	2013	2012
Cowell Beach SANTA CRUZ COUNTY	Cowell Beach SANTA CRUZ COUNTY	Avalon, Catalina Island LOS ANGELES COUNTY	Avalon, Catalina Island LOS ANGELES COUNTY
Mother's Beach, MDR LOS ANGELES COUNTY	Marina Lagoon (2 locations) SAN MATEO COUNTY	Cowell Beach SANTA CRUZ COUNTY	Cowell Beach SANTA CRUZ COUNTY
Clam Beach County Park HUMBOLDT COUNTY	Mother's Beach, MDR LOS ANGELES COUNTY	Poche Beach ORANGE COUNTY	Marie Canyon, Malibu LOS ANGELES COUNTY
Marina Lagoon (2 locations) SAN MATEO COUNTY	Cabrillo Beach, harborside LOS ANGELES COUNTY	Cabrillo Beach, harborside LOS ANGELES COUNTY	Surfrider Beach, Malibu LOS ANGELES COUNTY
Mission Bay SAN DIEGO COUNTY	Stillwater Cove MONTEREY COUNTY	Malibu Pier LOS ANGELES COUNTY	Solstice Canyon, Malibu LOS ANGELES COUNTY
Santa Monica Pier LOS ANGELES COUNTY	Clam Beach County Park HUMBOLDT COUNTY	Marina Lagoon (2 locations) SAN MATEO COUNTY	Cabrillo Beach, harborside LOS ANGELES COUNTY
Candlestick Point SAN FRANCISCO COUNTY	Santa Monica Pier LOS ANGELES COUNTY	Doheny State Beach ORANGE COUNTY	Doheny State Beach ORANGE COUNTY
Stillwater Cove MONTEREY COUNTY	Pillar Point Harbor SAN MATEO COUNTY	Redondo Beach Pier LOS ANGELES COUNTY	Poche Beach ORANGE COUNTY
Cabrillo Beach, harborside LOS ANGELES COUNTY	Capitola Beach SANTA CRUZ COUNTY	Windsurfer Circle SAN FRANCISCO COUNTY	Escondido State Beach, Malibu LOS ANGELES COUNTY
Huntington Beach (Brookhurst) ORANGE COUNTY	Windsurfer Circle SAN FRANCISCO COUNTY	Tijuana River Mouth SAN DIEGO COUNTY	Topanga State Beach Malibu LOS ANGELES COUNTY



PLEASE NOTE: ▼ Starting in 2015, the SWRCB required all coastal counties receiving state funds to monitor their beaches at point zero – where the discharge meets the ocean. Prior to monitoring year 2015-16, only Los Angeles County (and portions of Orange, San Diego, and Humboldt Counties) sampled directly at the outfall, which gives the most accurate picture of water quality.

San Diego County		Summer Dry (Apr-Oct)	Winter Dry (Nov-Mar)	Wet Weather Year-Round
Oceanside	San Luis Rey River outlet	A+		A+
	projection of Tyson Street	A+	A+	A
	projection of Forster Street	A	A+	A
	500' north of Loma Alta Creek outlet	A+	A+	A
	projection of Cassidy Street	A+	A	A+
	St. Malo Beach, downcoast from St. Malo Road	A+	A+	A
Carlsbad	projection of Tamarack Avenue	A+		
	warm water jetty	A		
	projection of Cerezo Drive	A+	A+	A+
	projection of Palomar Airport Road	A+	A+	A+
	Encina Creek outlet	A+	A+	A+
	projection of Ponto Drive	A+	A+	A+
Encinitas	projection of Poinsettia Lane	A+	A+	A+
	Batiquitos Lagoon outlet	A+		
	Moonlight Beach, Cottonwood Creek outlet	A	C	F
	Swami's Beach, Seaciff Park	A		
	San Elijo State Park, Pipes surf break	A+	A+	A
	San Elijo State Park, north end of State Park stairs	A+	A+	A+
Cardiff State Beach	San Elijo State Park, projection Liverpool Drive	A+	A+	A+
	San Elijo Lagoon outlet	A	A	
	Charthouse parking, slight south of Kilkeny	A+	A+	A+
	Las Olas, 100 yds. south of Chighthouse	A+	A+	A+
Solana Beach	Seaside State Park	A+	A+	A+
	Seascape Surf Beach Park	A+		
	Fletcher Cove, projection Lomas Santa Fe Drive	A+	A+	A
Del Mar	Tide Beach Park, projection Solana Vista Drive	A+	A+	A+
	San Dieguito River Beach	A	A	F
Torrey Pines	projection of 15th Street	A+		A+
	Los Penasquitos Lagoon outlet	A+	A	A+
La Jolla Shores	El Paseo Grande, near Scripps	A+		
	projection of Ave De La Playa	A		
La Jolla	La Jolla Cove	C	A	
	South Casa Beach	A		
	Ravina, south of Nicholson Point	A		
Windansea Beach	projection of Playa Del Norte	A+		
	projection of Palomar Avenue	A+		
Pacific Beach	P.B. Point, downcoast of Linda Way	A		
	Tourmaline Surf Park, projection of Tourmaline Street	A		
	projection of Grand Avenue	A+		

		Summer Dry (Apr-Oct)	Winter Dry (Nov-Mar)	Wet Weather Year-Round
Mission Bay	Vacation Isle North Cove Beach	A	B	D
	Vacation Isle Ski Beach	A		
	Bonita Cove, east cove	A		
	Bahia Point, northside, apex of Gleason Road	A		
	Fanuel Park, projection of Fanuel Street	A	C	A+
	Crown Point Shores	A		
	Wildlife Refuge near fence, projection of Lamont Street	A		
	Campland, west of Rose Creek	A	A	
	DeAnza Cove, mid, cove	A	B	
	Visitor's Center, projection of Clairemont Drive	B		
	Comfort Station north of Leisure Lagoon	A	B	
	Leisure Lagoon, swim area	A		
	Tecolote Shores, swim area	A		
	Tecolote Playground, watercraft area	A		
	Mission Beach, Belmont Park	A	A+	C
Ocean Beach	San Diego River outlet, Dog Beach	A	A	A+
	Stub Jetty	A	A	B
	Pier, north side at Newport Avenue	A	A	A+
	Ocean Pier, projection of Narragansett Avenue	A+		
	projection of Bermuda Avenue	A		B
Sunset Cliffs	projection of Ladera Street			B
Point Loma	Point Loma Treatment Plant	A+	A+	A
	Lighthouse	A+	A	B
San Diego Bay	Shelter Island, Shoreline Beach Park	C		
	Spanish Landing Park beach	A+		
	Glorietta Bay Park at boat launch	A		
	Bayside Park, projection of J Street	A		A+
	Silver Strand, bay side			A+
	Tidelands Park, projection of Mullinix Drive	B	B	
Coronado	Silver Strand	A+	A	F
	projection of Ave del Sol	A	A	F
Imperial Beach	projection of Carnation Avenue	A	A	F
	southend of Seacoast Drive	A	D	F
	Imperial Beach Pier	A+	B	F
	projection of Cortez Avenue	A	A	D
Tijuana Slough	NWRS, 3/4 mile north of Tijuana River	A	C	F
	NWRS, Tijuana Rivermouth	A	D	F
Border Field State Park	projection of Monument Road	A	F	F
	Border Fence, north side	A	D	F

Orange County		Summer Dry (Apr-Oct)	Winter Dry (Nov-Mar)	Wet Weather Year-Round
Seal Beach	projection of 1st Street	B	A	F
	projection of 8th Street	A	A	B
	projection of 14th Street	A	A	B
	Seal Beach Pier, 100 yards south of pier	A	A	D
Surfside Beach	projection of Sea Way	A+	A+	A
Sunset Beach	projection of Broadway	A+	A	A+
Bolsa Chica Beach	across from the Reserve Flood Gates	A+	A	A
	at the downcoast end of the State Beach	A+	A	A
Huntington City Beach	Bluffs	A	A+	B
	projection of 17th Street	A+	A	A
	Jack's Snack Bar at Huntington Street	A+	A+	A
	projection of Beach Boulevard	A	A	A
Huntington State Beach	projection of Newland Street, SCE Plant	A	A+	C
	projection of Magnolia Street	A	A	C
	projection of Brookhurst Street	A	A	B
	Santa Ana River, upcoast		B	F
	Santa Ana River Mouth	A	A	C
Newport Beach	projection of Orange Street	A	A	B
	projection of 52nd/53rd Street	A+	A	B
	projection of 38th Street	A+	A+	A
Balboa Beach	projection of 15th/16th Street	A+	A	A
	Balboa Beach Pier	A+	A	B
	The Wedge	A+	A+	A
Huntington Harbor	11th Street Beach	A	A+	A+
	Humboldt Beach	A	A+	A+
	Seagate Lagoon	A	A+	A+
	Trinidad Lane Beach	A+	A+	A+
	Mothers Beach, Orange County	A	C	F
	Coral Cay Beach	A+	A+	A+
	Davenport Beach	A	A	A+
Newport Bay	Newport Dunes, North	B	B	F
	Newport Dunes, East	B	B	F
	Newport Dunes, Middle	A	B	F
	Newport Dunes, West	A	A	F
	Bayshore Beach	A+	A+	F
	Via Genoa Beach	A	A+	F
	Lido Yacht Club Beach	A	A	F
	Garnet Avenue Beach	A	A	F
	Sapphire Avenue Beach	A	A	F
	Abalone Avenue Beach	A+	A	F

		Summer Dry (Apr-Oct)	Winter Dry (Nov-Mar)	Wet Weather Year-Round
Newport Bay (continued)	Park Avenue Beach	C	A	F
	Onyx Avenue Beach	A+	A	F
	Ruby Avenue Beach	A	A	F
	Grand Canal	A	A	F
	43rd Street Beach	A+	A	F
	38th Street Beach	A+	A+	F
	19th Street Beach	A+	A+	F
	15th Street Beach	A+	A	F
	10th Street Beach	A	A	F
	Alvarado/ Bay Isle Beach	A	A	F
	N Street Beach	A	A	F
	Harbor Patrol Beach at Bayside Drive	A	A	F
	Rocky Point Beach	A	B	F
Corona del Mar	Corona Del Mar, CSDOC	A+	A	F
	Little Corona Beach	A	A	C
	Pelican Point Beach	A+	A+	D
	Crystal Cove, CSDOC	A+	A+	A
	Crystal Cove, weekly	A+	A	D
	Muddy Creek Beach	A+	A+	B
	El Moro Beach, point zero	A+	A+	A+
Laguna Beach	Emerald Bay Beach, Point zero	A+	A	A+
	Diver's Cove, point zero	A	A	A+
	Crescent Bay Beach	A+	A	A+
	Laguna Main Beach, point zero	A+	D	A+
	Laguna Hotel, point zero	A	A	A+
	Cleo Street, point zero	A	A	C
	Projection of Bluebird Canyon, point zero	A	A	B
	Between Pearl and Agate Street, point zero	A		
	Victoria Beach, point zero	A+	A+	A+
	Blue Lagoon, point zero			A+
	Laguna Beach, Goff Island Beach	A+	A+	B
	Treasure Island Beach	A+	A	B
	North Aliso County Beach	A+	A+	F
	Aliso Creek Ocean Interface, point zero	A	A+	F
	Aliso Creek, outlet	A+	A+	F
	Aliso Creek, 1000' south	A+	A+	B
	Camel Point	A+	A+	C
	West Street, point zero	A+	A+	C
	Table Rock	A+	A+	B
	Laguna Lido Apt.	A+	A+	B

		Summer Dry (Apr-Oct)	Winter Dry (Nov-Mar)	Wet Weather Year-Round
Laguna Beach (continued)	9th Street 1000 Steps Beach	A	A+	B
	Three Arch Bay	A+	A	B
Dana Point	Monarch Beach, North, point zero	F	F	D
	Monarch Beach, North		A	A+
	Salt Creek Beach	A+	A	A+
	Dana Strands Beach, AWMA	A+	A+	A+
	Marine Science Institute Beach, SERRA	A	A	A+
	Doheny, North Beach, point zero	A	D	F
	Doheny, Mid Beach north of San Juan Creek	A+	B	F
	Doheny, San Juan Creek Ocean Interface, point zero	B	F	F
	Doheny, San Juan Creek Interface	A	D	F
	Doheny, Last Campground, 1000' south of SERRA Outfall	A+	B	F
	Doheny, 2000' south of SERRA Outfall	A	B	D
	Doheny, South Day Use Area drain, point zero	A	A	D
	Doheny, Pedestrian Bridge, 3000' south of SERRA Outfall	A+	A	D
	Doheny, End of the Park, point zero	A+	A	C
	Capistrano County Beach, 5000' south of SERRA Outfall	A	A	A+
	Capistrano County Beach drain, point zero	A+		
	Projection of Camino Estrella, 7500' South Outfall	A+	A	A+
	S. Capistrano Bay Comm Beach, 10000' so. of SERRA Outfall	A+	A+	A+
San Clemente	Poche Beach	A+	A+	F
	Poche Creek Ocean Interface, point zero	C	F	F
	Avenida Pico drain at North Beach, point zero	A	A	A+
	North Beach at Avenida Pico, 20000' South Outfall	A+	A+	A+
	Mariposa Beach, point zero	A+		A+
	Linda Lane Beach, point zero	A+	A+	A+
	San Clemente Pier drain, point zero	F	D	A+
	San Clemente at El Portal drain, pt zero			A+
	San Clemente Pier Lifeguard Building north	A	A	A+
	Trafalgar Canyon, point zero	A+	A	A+
	South Linda Lane drain, point zero			A
	Riviera Beach, point zero	A+		A+
	Avenida Calafia	A+	A+	A+
	Avenida Las Palmeras	A+		A+
Dana Point Harbor	Baby Beach, West End	B	A	A+
	Baby Beach, Buoy Line	A	A	A+
	Baby Beach, Swim Area	A	A	A+
	Baby Beach, East End	A	A	A+
	Guest Dock	A+	A	A+
	Youth Dock	A+	A+	A+

Los Angeles County

		Summer Dry (Apr-Oct)	Winter Dry (Nov-Mar)	Wet Weather Year-Round
Malibu	Leo Carrillo Beach at Arroyo Sequit Creek mouth, point zero	A+	F	F
	Nicholas Beach at San Nicholas Canyon Creek mouth, point zero	A	A	B
	Encinal Canyon at El Matador State Beach	A+		F
	Broad Beach at Trancas Creek mouth, point zero	A+	C	F
	Zuma Beach at Zuma Creek mouth, point zero	A	D	F
	Walnut Creek outlet, projection of Wildlife Road	A+	A	F
	Unnamed Creek, projection of Zumirez Drive, Little Dume	A	B	A
	Paradise Cove Pier at Ramirez Canyon Creek mouth, point zero	B	F	F
	Escondido Creek, just east of Escondido State Beach	A+	C	B
	Latigo Canyon Creek mouth, point zero	A	B	F
	Solstice Canyon at Dan Blocker County Beach	B	C	F
	Unnamed Creek, adjacent to public stairway at 24822 Malibu Road	A+	B	C
	Puerco State Beach at creek mouth, point zero	A+	C	F
	Marie Canyon storm drain at Puerco Beach, at 24572 Malibu Road	A+	C	F
	Malibu Point, MC	A+	A	A+
	Surfrider Beach, breach point, MC	A	D	F
	Malibu Pier, 50 yards east, MC	A	B	F
	Carbon Beach at Sweetwater Canyon	A+	A	D
	Las Flores State Beach at Las Flores Creek, point zero	A+	A	C
	Big Rock Beach at 19948 PCH stairs	A	A	A+
	Pena Creek at Las Tunas County Beach	A+	A+	A+
Topanga State Beach	Topanga Beach at creek mouth	A	B	F
Castle Rock Beach	Castlerock Storm Drain at Castle Rock Beach	A	A	A+
Will Rogers State Beach	17200 PCH, 1/4 mile east of Sunset drain	A+	A	F
	Bel Air Bay Club drain near fence, point zero	A	A	D
	Pulga Canyon storm drain, point zero	A	A	C
	Temescal Canyon drain, point zero	A	A+	F
	Santa Monica Canyon drain, point zero	A	D	F
Santa Monica Beach	Montana Avenue drain, point zero	A	A	F
	Wilshire Boulevard drain, point zero	A	A	F
	Santa Monica Municipal Pier, point zero	C	C	F
	Pico/Kenter storm drain, point zero	A	C	F
	Strand Street, in front of the restrooms	A+	A	F
	Ocean Park Beach at Ashland Avenue drain, point zero	A	A	F
Venice Beach	at the Rose Avenue storm drain	A	B	F
	Brooks Avenue drain	A+	A+	F
	Windward Avenue drain, point zero	A+	B	B
	Venice Fishing Pier, 50 yards south,	A+	A	C
	Topsail Street	A	A	C

		Summer Dry (Apr-Oct)	Winter Dry (Nov-Mar)	Wet Weather Year-Round
Marina del Rey	Mothers' Beach, Playground area	A	C	F
	Mothers' Beach, lifeguard tower	A	F	F
	Mothers' Beach, btwn. Tower and Boat dock	D	F	F
	Basin D, near first slip outside swim area, from surface		A	D
	Basin D, near first slip outside swim area, at depth		A+	D
	Basin E, in front of tide gate from Oxford Basin		A	F
	Basin E, center of basin, from surface		C	F
	Basin E, center of basin, at depth		A	F
	Basin E, in front of Boone, Olive Pump Outlet		B	F
	Back of main channel, from surface		A	F
	Back of main channel, at depth		A+	F
	Basin F, center of basin, from surface		A	D
	Basin F, center of basin, at depth		A+	C
Playa del Rey	Dockweiler Beach, Ballona Creek mouth, point zero	A+	A	F
	Dockweiler Beach, Culver Boulevard drain	A	A	C
	Dockweiler Beach, North Westchester Storm Drain	A+	A+	B
	Dockweiler Beach, World Way, south of D&W jetty	A	A	D
	Dockweiler Beach, Imperial Hwy drain, point zero	A	A	F
	Dockweiler Beach, Hyperion Treatment Plant One Mile Outfall	A+	A	A
El Segundo Beach	GrandAvenue drain	A+	A+	F
Manhattan Beach	40th Street	A	C	A
	28th Street drain	A	A	F
	Manhattan Beach Pier drain, point zero	A	C	B
Hermosa Beach	26th Street	A	A	A+
	Hermosa Beach Pier, 50 yards south	A	C	B
	Herondo Street storm drain, in front of the drain	A	A	F
Redondo Beach	Redondo Municipal Pier 100 yards south	C	F	C
	Sapphire Street	A	C	B
	Topaz Street, north of jetty	A+	A	A+
Torrance Beach	Avenue I drain, point zero	A	B	B
Palos Verdes Peninsula	Malaga Cove at trail outlet	A	C	A+
	Malaga Cove at rocks	A+	B	A+
	Palos Verdes, Bluff Cove, Palos Verdes Estates	A+	A	B
	Long Point, Rancho Palos Verdes	A	A	A
	Abalone Cove Shoreline Park	A+	B	A
	Portuguese Bend Cove, Rancho Palos Verdes	A	A	A
San Pedro	Royal Palms State Beach	A	A	A
	Cabrillo Beach, oceanside	A+	A+	A+
	Cabrillo Beach, harborside at restrooms	D	F	F
	Cabrillo Beach, harborside at boat launch	B	C	F

		Summer Dry (Apr-Oct)	Winter Dry (Nov-Mar)	Wet Weather Year-Round
Catalina Island	Avalon Beach, 100 feet east of the Green Pleasure Pier	A+		A+
	Avalon Beach, 50 feet east of the Green Pleasure Pier	A		A+
	Avalon Beach, 50 feet west of the Green Pleasure Pier	B		A+
	Avalon Beach, 100 feet west of the Green Pleasure Pier	A		A+
	Avalon Beach, east of the Casino Arch at the steps	A+		A+
Long Beach	projection of 5th Place	A	C	F
	projection of 10th Place	A	B	F
	projection of Molino Avenue	C	A	F
	projection of Coronado Avenue	F	B	F
	Belmont Pier, westside	B	A	F
	projection of Prospect Avenue	C	A	F
	projection of Granada Avenue	C	A	F
	Alamitos Bay, 2nd Street Bridge and Bayshore	A	A	F
	Alamitos Bay, shore float	A+	A	F
	Mother's Beach, Long Beach, north end	A	C	F
	Alamitos Bay, 56th Place, on bayside	A+	A	F
	projection of 55th Place	A	A	F
	projection of 72nd Place	A	C	F
	Colorado Lagoon, south	A	B	F
	Colorado Lagoon, north	A	C	F

Ventura County

Ventura	Rincon Beach, 25 yds. south of the creek mouth	A	A	A+
	Rincon Beach, at the end of the footpath	A+		
La Conchita Beach	point zero, Ocean View Road	A+		
Ventura	Oil Piers Beach, south of drain	A+	A+	A+
	Hobson County Park, base of stairs to the beach	A		A+
	Faria County Park, stairs	A	A	C
	Mandos Cove, point zero,	A		A+
	Solimar Beach, south, end of east gate access road	A+	A	C
	Emma Wood State Beach, 50 yards south of first drain	A	A	B
	Surfer's Point at Seaside, End of access path via wooden gate	A	A	C
	Promenade Park, Figueroa Street	A+	A	F
	Promenade Park, Redwood Apts.	A+		A+
	Promenade Park, Holiday Inn, south of drain at California Street	A		A+
	San Buenaventura Beach, south of drain at Kalorama Street	A+		A+
	San Buenaventura Beach, south of drain at San Jon Road	A+	A	F
	San Buenaventura Beach, south of drain at Dover Lane	A		A+
	San Buenaventura Beach, south of drain at Weymouth Lane	A		A+

		Summer Dry (Apr-Oct)	Winter Dry (Nov-Mar)	Wet Weather Year-Round
Ventura Harbour area	Marina Park, Beach at north end of playground	A		A+
	Peninsula Beach, Beach area north of South Jetty	A+		A+
	Surfer's Knoll, Beach adjacent to parking lot	A	A+	C
Oxnard	5th Street, south of drain	A+		
	Outrigger Way, south of drain	A+		
	Falkirk Avenue, south of drain	A+		
	Starfish Drive, south of drain	A+		
Channel Islands Harbor	Hollywood Beach, La Crescenta Street, south of drain	A+		
	Hollywood Beach, Los Robles Street, south of drain	A+	A+	B
	Hobie Beach Lakshore Drive	A		
	Beach Park at south end of Victoria Avenue	A	A	C
	Silverstrand, San Nicholas Avenue, south of jetty	A+	A	A+
	Silverstrand, Santa Paula Drive, south of drain	A+	A+	A+
	Silverstrand, Sawtelle Avenue, south of drain	A+	A+	A+
Port Hueneme	Beach Park, 50 yds. north of the Pier	A+	A+	B
Oxnard	Ormond Beach, J Street drain	A+	A	F
	Ormond Beach, Oxnard Industrial drain, 50 yds. north of the drain	A+	A	B
	Ormond Beach, Arnold Road	A+	A	A+
Point Mugu	Point Mugu Beach, adjacent to parking lot entry	A+		
	Thornhill Broome Beach, adjacent to parking lot entry	A+		
	Sycamore Cove Beach, 50 yds. so. of the creek mouth	A+		
	County Line Beach point zero	A+		
	Staircase Beach, bottom of staircase	A+		

Santa Barbara County

Guadalupe	Guadalupe Dunes	A+	A+	A+
Lompoc	Jalama Beach	A	A	A+
Goleta	Gaviota State Beach	A+	A	A
	Refugio State Beach	A	A	F
	El Capitan State Beach	A	A+	B
Isla Vista	Sands @ Coal Oil Point	A+	A+	A
Goleta	Goleta Beach	C	A	C
Hope Ranch	Hope Ranch Beach	A+	A	F
Santa Barbara	Arroyo Burro Beach	A	A	C
	Leadbetter Beach	A	A	D
	East Beach @ Mission Creek	C	A	F
	East Beach @ Sycamore Creek	A	A	D
Montecito	Butterfly Beach	A+	A+	A
	Hammond's Beach	A	A	F
Summerland	Summerland Beach	A	A+	A
Carpinteria	Carpinteria State Beach	B	A	F

		Summer Dry (Apr-Oct)	Winter Dry (Nov-Mar)	Wet Weather Year-Round
San Luis Obispo County				
San Simeon	Hearst Memorial State Beach, 100 yds. west of pier at creek outfall	A	A	A+
	Pico Avenue, San Simeon	A+	A+	A+
Cayucos	Cayucos Beach, north of pier at outfall	A	A+	A+
	Cayucos State Beach, downcoast of the pier	A+	A+	A+
	Studio Drive parking lot near Old Creek	A+	A+	D
Morro Strand State Beach	projection of Beachcomber Drive	A	A+	A+
Morro Bay City Beach	projection of Atascadero	A	A	A+
	Morro Bay City Beach, Morro Creek, south side	A	A	A
	Morro Bay City Beach, 75 feet north of main parking lot	A+	A+	A+
Avila Beach	Olde Port Beach, Harford Beach, north	A	A	A
	Avila Beach, 350 yards west of pier at creek outfall	A	A	A+
	Avila Beach, projection of San Luis Street	A	A	A+
Pismo Beach	Sewers at Silver Shoals Drive	A+	A+	A+
	Pismo Beach, projection of Wadsworth Street	A	A	A+
	Pismo Beach Pier, 40 feet south of the pier	A	A	A+
	Pismo Beach, projection of Ocean View	A	A	A+
	Pismo State Beach, 330 yards north of Pier Avenue	A	A	A+
	Pismo State Beach, projection of Pier Avenue	A	A+	A+
	Pismo State Beach, 571 yds. south of Pier Ave., end of Strand Way	A	A+	A+
Monterey County				
Monterey Bay	Monterey State Beach	A+		F
	Monterey Municipal Beach, at the commercial wharf	B		F
	San Carlos Beach at San Carlos Beach Park	A		A+
	Lover's Point Park, projection of 16th Street	A		A+
	Asilomar State Beach, projection of Arena Avenue	A		A+
	Spanish Bay, Moss Beach, end of 17 mile drive	A		A+
	Stillwater Cove, at Beach and Tennis Club	A+		A+
Carmel	Carmel City Beach, projection of Ocean Avenue, west end	A		A+
Santa Cruz County				
Santa Cruz	Natural Bridges State Beach	A+	A+	A+
	Mitchell's Cove Beach			A+
	Lighthouse Beach, Steamer Lane			F
	Cowell Beach at the Stairs	B		A+
	Cowell Beach Lifeguard Tower 1	C	A	B
	Cowell Beach, west of the wharf	F	A	C
	Santa Cruz Main Beach at the Boardwalk	A	A	D
	Santa Cruz Main Beach at the San Lorenzo River	B	A	F
	Seabright Beach	A+		F

		Summer Dry (Apr-Oct)	Winter Dry (Nov-Mar)	Wet Weather Year-Round
Twin Lakes	Twin Lakes Beach	A		F
	Corcoran Lagoon Beach			A+
Opal Cliffs	Moran Lake Beach			A+
Capitola Beach	west of jetty	B	A	F
	Capitola Beach east of jetty	B	A	F
	New Brighton Beach	A+		F
Aptos	Seacliff State Beach	A		D
	Rio Del Mar Beach	A		F
Watsonville	Palm/Pajaro Dunes Beach			A+

San Mateo County

Pacifica	Sharp Park Beach, projection of San Jose Avenue	A		A+
	Sharp Park Beach, projection of Birch Lane	A+		A+
	Rockaway Beach at Calera Creek	B		C
	Linda Mar Beach at San Pedro Creek	F		F
Moss Beach	Fitzgerald Marine Reserve at San Vicente Creek	B		F
Pillar Point	Pillar Point #9 Harbor Beach			F
	Pillar Point #8 Mavericks Beach Westpoint Avenue	A		F
	Pillar Point Harbor, end of Westpoint Avenue #7	B		F
	Pillar Point Harbor, Capistrano Ave Beach #5			C
Half Moon Bay	Surfer's Beach, south end of riprap	B		F
	Roosevelt Beach, south end of parking lot	A		F
	Dunes Beach	A		F
	Venice Beach at Frenchman's Creek	B		C
	Francis Beach at the foot of the steps	B		F
	San Gregorio State Beach at San Gregorio Creek			F
Pomponio State Beach	at Pomponio Creek	A		A
Pescadero State Beach	at Pescadero Creek	A		C
	Bean Hollow State Beach	A+		A+
	Gazos Beach at Gazos Creek	A		A+
San Mateo	Coyote Point	A+		A
	Aquatic Park	D		A
	Lakeshore Park, behind Rec Center	B		F
	Kiteboard Beach			B
	Erckenbrack Park			F
	Marlin Park, Foster City			B

San Francisco County		Summer Dry (Apr-Oct)	Winter Dry (Nov-Mar)	Wet Weather Year-Round
Aquatic Park Beach	Hyde Street Pier, projection of Larkin Street	A+	A	A+
	Aquatic Park Beach, 211 Station	A	B	A
Presidio	Crissy Field Beach East, 202.4 Station	A+	A	B
	Crissy Field Beach West 202.5 station	A+	A+	C
	Baker Beach East, Ocean #15 East	A	A+	A
	Baker Beach, Lobos Creek	C	A	C
	Baker Beach West, Ocean #16	A	A+	A
Seacliff	China Beach, end of Sea Cliff Avenue	A	A+	A
Ocean Beach	projection of Balboa Avenue	A+	A+	A
	Ocean Beach, projection of Lincoln Way	A+	A+	D
	Ocean Beach, projection of Pacheco Street			F
	Ocean Beach, projection of Vicente Street			F
	Ocean Beach, projection of Sloat Boulevard	A+	A	A
	Fort Funston, opposite Lake Merced overflow structure			F
Mission Creek Park	Mission Creek	A	A	F
Islais Channel	Islais Landing at Islais Creek	B	A	F
Candlestick Point	Jackrabbit Beach	A	A	C
	Candlestick Point, Windsurfer Circle	B	B	F
	Candlestick Point, Sunnysdale Cove	A	A	F

East Bay, Contra Costa and Alameda Counties

Richmond	Keller Beach North Beach	B		B
	Keller Beach South Beach	D		A
Alameda	Crown Beach Crab Cove	D		F
	Crown Beach Bath House	A		A+
	Crown Beach Windsurfer Corner	A		A
	Crown Beach Sunset Road	A		C
	Crown Beach 2001 Shoreline Drive	A		F
	Crown Beach Bird Sanctuary	A		F

Marin County

Tomales Bay	Dillon Beach	A		A+
	Lawson's Landing	A		A+
	Miller Park	A		A+
	Heart's Desire	A		A+
	Shell Beach	A		A+
	Chicken Ranch Beach at Creek	A		A+
	Millerton Point	A		A+

		Summer Dry (Apr-Oct)	Winter Dry (Nov-Mar)	Wet Weather Year-Round
Bolin Bay	Bolin Beach, Wharf Road	A		F
	Stinson Beach, North	A+		B
	Stinson Beach, Central	A+		A+
	Stinson Beach, South	A+		A+
Muir Beach	Muir Beach, North	A		A+
	Muir Beach, Central	A		A+
	Muir Beach, South	A		A+
Rodeo Beach	Rodeo Beach, North	A+		A+
	Rodeo Beach, Central	A		A+
	Rodeo Beach, South	A+		A+
Baker Beach	Baker Beach, Horseshoe Cove SW	A		A+
	Baker Beach, Horseshoe Cove NW	A+		F
	Baker Beach, Horseshoe Cove NE	A		C
Sausalito	Schoonmaker Beach	A+		F
San Rafael	China Camp	B		F
	McNears Beach	B		F
El Campo	Paradise Cove	A+		A+

Sonoma County

Gualala	Gualala Regional Park Beach	A+		A+
Sea Ranch	Black Point Beach	A+		A+
Jenner	Stillwater Cove Regional Park Beach	A		A+
	Goat Rock State Park Beach	A+		A+
Bodega Bay	Salmon Creek State Park Beach	A+		A+
	Campbell Cove State Park Beach	A+		A+
	Doran Regional Park Beach	A+		A+

Mendocino County

Fort Bragg	MacKerricher State Park at Virgin Creek	A+		A+
	Pudding Creek Ocean Outlet	A+		A+
	Hare Creek	A		D
Mendocino	Caspar Beach at Caspar Creek	A+		A
	Big River near PCH	A+		A+
Little River	Van Damme State Park at the Little River	A+		C

Humboldt and Del Norte Counties

Trinidad	Trinidad State Beach near Mill Creek	A		B
	Luffenholtz Beach near Luffenholtz Creek	C		A+
	Moonstone County Park, Little River State Beach	C		B
McKinleyville	Clam Beach County Park near Strawberry Creek	F		B
	Mad River Mouth, north	A+		A+
Crescent City	Battery Point Lighthouse	A+		A+

		Summer Dry (Apr-Oct)	Winter Dry (Nov-Mar)	Wet Weather Year-Round
Coos County				
	Sunset Bay State Park Beach South Cove	A	–	D
	Sunset Bay State Park Beach at North Beach Access	A+	–	A
	Sunset Bay State Park Beach at Restroom	A+	–	B
Lincoln County				
	Nye Beach Turnaround west of discharge pipe (marine water)	D	–	A+
	Nye Beach 100m north Nye Creek outflow west of NW 6th street	A+	–	A+
	Seal Rock State Wayside Beach at mouth of Hill Creek	F	–	A+
	Seal Rock State Wayside Beach at mouth of Little Creek	A+	–	A+
	Seal Rock State Wayside Beach at north access	A+	–	A+
Clatsop County				
	Cannon Beach at Ecola Creek mouth (2nd Avenue)	A	–	–

Clallam County

	Summer Dry (Apr-Oct)	Winter Dry (Nov-Mar)	Wet Weather Year-Round
Front Street Beach East at Pine Street	A+	A	A+
Front Street Beach East - mid	A	A+	A
Front Street Beach East at Kal Chate St.	A+	A+	A
Sooes Beach - south	A+	A+	A+
Sooes Beach - mid	C	A+	A+
Sooes Beach - north	B	A+	A+
Salt Creek Recreation Area - south	A	–	A+
Salt Creek Recreation Area - north	A+	–	A+
Cline Spit County Park - north	D	–	A+
Cline Spit County Park - mid	A	–	A+
Cline Spit County Park - south	A+	–	A+
Hollywood Beach - west	D	–	F
Hollywood Beach - mid	A	–	F
Hollywood Beach - east	B	–	F
Hobuck Beach - south	A+	A+	A+
Hobuck Beach - north	A+	A+	A+
Hobuck Beach - mid south	A+	A+	A+
Third Beach Neah Bay - west	A+	A+	A+
Third Beach Neah Bay - mid	A+	A+	A+
Third Beach Neah Bay - east	A+	A+	A+
Dakwas Park Beach Neah Bay west	A+	A	A+
Dakwas Park Beach Neah Bay mid	A+	A+	B
Dakwas Park Beach Neah Bay east	A+	A+	B

Snohomish County

Kayak Point County Park - north	A	–	D
Kayak Point County Park - south	A+	–	A+
Kayak Point County Park - mid	A	–	A+
Edmonds Underwater Park - mid	A+	–	
Edmonds Underwater Park - north	A+	–	
Edmonds Underwater Park - south	A+	–	
Marina Beach Edmonds (No Dogs) - mid	A+	–	
Marina Beach Edmonds (No Dogs) - north	A	–	
Marina Beach Edmonds (No Dogs) - south	A+	–	
Mukilteo Lighthouse Park mid	A+	–	A+
Mukilteo Lighthouse Park north	A+	–	A+
Mukilteo Lighthouse Park south	A	–	A+
Picnic Point County Park - mid	A+	–	A+
Picnic Point County Park - north	A+	–	A+
Picnic Point County Park - south	A+	–	A+

Kitsap County

	Summer Dry (Apr-Oct)	Winter Dry (Nov-Mar)	Wet Weather Year-Round
Arness County Park - mid	A	–	A+
Arness County Park - north	A	–	A+
Arness County Park - south	A+	–	A+
Fay Bainbridge State Park - mid	A+	–	A+
Fay Bainbridge State Park - north	A	–	A+
Fay Bainbridge State Park - south	A	–	A+
Illahee State Park - mid	A	–	A+
Illahee State Park - north	A+	–	A+
Illahee State Park - south	A	–	A+
Indianola Dock - east	A	–	A+
Indianola Dock - mid	A+	–	A+
Indianola Dock - west	A	–	A+
Joel Pritchard Park - east	A+	–	A+
Joel Pritchard Park - mid	A+	–	A+
Joel Pritchard Park - west	A+	–	A+
Kitsap Memorial State Park mid	A+	–	A+
Kitsap Memorial State Park north	A+	–	A+
Kitsap Memorial State Park south	A+	–	A+
Lions Park - mid	A+	–	A+
Lions Park - north	A+	–	A+
Lions Park - south	A	–	A+
Point No Point Lighthouse Park mid	A+	–	A+
Point No Point Lighthouse Park north	A+	–	A+
Point No Point Lighthouse Park south	A+	–	A+
Pomeroy Park - Manchester Beach - mid	A	–	A+
Pomeroy Park - Manchester Beach - north	A	–	A+
Pomeroy Park - Manchester Beach - south	A	–	A+
Scenic Beach State Park east	A+	–	A+
Scenic Beach State Park mid	A+	–	A+
Scenic Beach State Park west	A+	–	A+
Silverdale County Park - east	A+	–	A+
Silverdale County Park - mid	A+	–	A+
Silverdale County Park - west	A+	–	A+

Mason County

Allyn Waterfront Park mid	A	–	A+
Allyn Waterfront Park north	A	–	A+
Allyn Waterfront Park south	A	–	A+
Potlatch State Park - mid	A+	–	A+

	Summer Dry (Apr-Oct)	Winter Dry (Nov-Mar)	Wet Weather Year-Round
Potlatch State Park - north	A+	–	A+
Potlatch State Park - south	A+	–	A+
Twanoh State Park - point	A+	–	A+
Twanoh State Park - west of dock	A+	–	A+
Twanoh State Park - west of point	A	–	A+

Island County

Freeland County Park Holmes Harbor - west	A+	–	A+
Freeland County Park Holmes Harbor - mid	B	–	A+
Freeland County Park Holmes Harbor - east	B	–	A+
Dave Mackie Park Beach south	A+	–	A
Dave Mackie Park Beach in tidal lagoon	A+	–	C
Dave Mackie Park Beach north	A+	–	A+
Oak Harbor Lagoon - south east	A	–	A+
Oak Harbor Lagoon - mid	A+	–	A+
Oak Harbor Lagoon - north west	A+	–	A+

Whatcom County

Larrabee State Park Wildcat Cove - mid	A	–	A+
Larrabee State Park Wildcat Cove - south	A	–	A+
Larrabee State Park Wildcat Cove - west	C	–	A+
Little Squalicum Park at creek outlet	A	–	A+
Little Squalicum Park east	A	–	A+
Little Squalicum Park far west of pier	D	–	A+

Jefferson County

Fort Worden State Park - mid	A	–	A+
Fort Worden State Park - north	A+	–	A+
Fort Worden State Park - south	A+	–	A+
Herb Beck Marina - east	A	–	A+
Herb Beck Marina - mid	A	–	A+
Herb Beck Marina - west	A	–	A+

King County

Alki Beach Park - mid	A+	–	A+
Alki Beach Park - north	A+	–	C
Alki Beach Park - south	A	–	A+
Carkeek Park - mid	A+	–	A+

	Summer Dry (Apr-Oct)	Winter Dry (Nov-Mar)	Wet Weather Year-Round
Carkeek Park - north	A+	–	A+
Carkeek Park - south	A+	–	A+
Dash Point State Park - east	A+	–	A+
Dash Point State Park - mid	A+	–	A+
Dash Point State Park - west	A+	–	A+
Golden Gardens - mid	A	–	A+
Golden Gardens - north	A+	–	A+
Golden Gardens - south	B	–	A+
Lincoln Park - mid	A	–	A+
Lincoln Park - north	A+	–	A+
Lincoln Park - south	A	–	A+
Redondo County Park - mid	A+	–	A+
Redondo County Park - north	A+	–	A+
Redondo County Park - south	A+	–	A+
Richey Viewpoint - mid	A	–	A+
Richey Viewpoint - north	B	–	A+
Richey Viewpoint - south	A	–	A+
Richmond Beach Saltwater Park - mid	A+	–	A+
Richmond Beach Saltwater Park - north	A+	–	A+
Richmond Beach Saltwater Park - south	A+	–	A+
Saltwater State Park - mid	A+	–	A+
Saltwater State Park - north	A+	–	A+
Saltwater State Park - south	A	–	A+
Seahurst (Ed Munro) Park - mid	A	–	–
Seahurst (Ed Munro) Park - north	A+	–	–
Seahurst (Ed Munro) Park - south	A	–	–

Pierce County

Dash Point County Park - east	A+	–	A+
Dash Point County Park - east of pier	A+	–	A+
Dash Point County Park - west of pier	A+	–	A+
Jack Hyde Park - east	A	–	–
Jack Hyde Park - west	A+	–	–
Kopachuck State Park mid	A+	–	–
Kopachuck State Park north	A+	–	–
Kopachuck State Park south	A+	–	–
Owens Beach - Point Defiance Park - mid	A+	–	A+
Owens Beach - Point Defiance Park - north	A+	–	A+
Owens Beach - Point Defiance Park - south	A+	–	A+

	Summer Dry (Apr-Oct)	Winter Dry (Nov-Mar)	Wet Weather Year-Round
Penrose Point State Park east	A+	–	–
Penrose Point State Park mid	A+	–	–
Penrose Point State Park west	A+	–	–
Purdy Sandspit County Park - east	A+	–	–
Purdy Sandspit County Park - mid	A+	–	–
Purdy Sandspit County Park - west	A+	–	–
Ruston Way north - projection of Warner St	A	–	A+
Sunnyside Beach Park - mid	A+	–	–
Sunnyside Beach Park - north	A+	–	–
Sunnyside Beach Park - south	A	–	–
Titlow Park - mid	A+	–	–
Titlow Park - north	A+	–	–
Titlow Park - south	A+	–	–
Waterfront Dock/ Ruston Way - north	A	–	–
Waterfront Dock/ Ruston Way - south	A+	–	–

Thurston County

Burfoot County Park - north	A+	–	–
Burfoot County Park - mid	A+	–	–
Burfoot County Park - south	A+	–	–

Gray's Harbor County

Westhaven State Park Half Moon Bay - mid	A+	–	A+
Westhaven State Park Half Moon Bay - north	A+	–	A+
Westhaven State Park Half Moon Bay - south	A+	–	A+
Westhaven State Park South Jetty - mid	A+	–	A+
Westhaven State Park South Jetty - north	A+	–	A+
Westhaven State Park South Jetty - south	A+	–	A+
Westport - The Groynes - east	A+	–	A+
Westport - The Groynes - mid	A+	–	A+
Westport - The Groynes - west	A+	–	A+

Skagit County

Bayview State Park - north	A	–	A+
Bayview State Park - mid	A	–	A+
Bayview State Park - south	A	–	A+

About Heal the Bay's Annual Beach Report Card

Heal the Bay is a nonprofit environmental organization, dedicated to making Southern California coastal waters and watersheds, including Santa Monica Bay, safe, healthy and clean. We use science, education, community action and advocacy to pursue our mission.

What is the Beach Report Card?

Ocean water quality testing is vital to the health of the millions of people who use our coastal waters. Heal the Bay's Beach Report Card (BRC) is a vital public health protection tool based beach monitoring conducted by local health agencies and dischargers.

Since the BRC was first published more than 25 years ago, beachgoers throughout California have come to rely on the annual and weekly grades to better protect their health and the health of their families. The BRC grades over 600 locations along the West Coast on an A-to-F scale based on the risk of adverse health effects to beachgoers. Grades are based on fecal bacteria pollution concentrations in the wave-wash. Water samples are analyzed for bacteria that indicate pollution from numerous sources, including fecal waste. The better the grade a beach receives, the lower the risk of illness to ocean users.

The BRC should be used like the SPF ratings in sunblock—beachgoers should determine what they are comfortable with in terms of relative risk, and then make the necessary decisions to protect their health. Heal the Bay urges coastal beachgoers to use this information before they visit beaches on the West Coast.

The Beach Report Card would not be possible without the cooperation of all of the shoreline monitoring agencies in California, Oregon and Washington.

What is the history of the BRC?

Heal the Bay's first Beach Report Card was published in 1991 and covered about 60 monitoring locations in Los Angeles County from Leo Carrillo Beach (near the Ventura County line) to Cabrillo Beach in San Pedro. At that time, beachgoers knew little about the health risks of swimming in polluted waters or the water quality at any of their favorite beaches in Los Angeles County. Beach water quality was a known public issue only when a substantial sewage spill occurred. Although beaches were routinely monitored, the data were either inaccessible or incomprehensible to the general public.

Since then, an immense amount of work has been completed and resources invested to reduce urban runoff pollution and sewage spills at our local beaches. Heal the Bay is proud to announce its influence on and participation in the following:

- Completion of scientific studies such as the Santa Monica Bay Restoration Project's epidemiological study on swimmers at runoff polluted beaches and the Southern California Coastal Water Research Project (SCCWRP) led light-wide shoreline bacteria and laboratory inter-calibration studies.
- Passage of legislation, such as the statewide beach bathing water standards and public notification bill (AB 411), and the protocol for identifying sources of fecal indicator bacteria at high-use beaches that are impacted by flowing storm drains (AB 538).
- Completion of structural best management practices such as the Santa Monica Urban Runoff Recycling Facility (SMURRF), dry weather runoff diversions, and nearly \$100 million in California's Clean Beach Initiative (CBI) projects throughout the state.
- Passage and Implementation of Proposition O. The City of Los Angeles is spending over \$100 million of Prop O funds to make Santa Monica Bay beaches cleaner and safer for public use.

- Measure V. The City of Santa Monica passed Measure V in 2006, which help funds urban runoff water quality improvement projects around the City.
- Measure W passed in 2018 and will fund stormwater improvement projects around L.A. County.

What do the grades mean to the beach user?

Coming into contact with waters with elevated bacteria concentrations has been associated with increased risks to human health. The higher the grade a beach receives, the better the water quality at that beach. The lower the grade, the greater the health risks. Potential illnesses include stomach flu, eye/ear infections, upper respiratory infection and major skin rash (full body). The known risks of contracting illnesses associated with each threshold are based on a one-time, single day of exposure (head immersed while swimming) to polluted water. Increasing frequency of exposure or the magnitude of bacteria densities may significantly increase an ocean user's risk of contracting any one of a number of these illnesses..



How are grades calculated?

Heal the Bay's grading system takes into consideration the magnitude and frequency of exceedances above allowed bacterial levels over the course of the specified time period. Each BRC year contains three time/weather periods:

- Summer Dry = Samples taken during dry weather between April 1 and October 31
- Winter Dry = Samples taken during dry weather between November 1 and March 31
- Wet Weather = Samples taken during or within 72 hours of a rain event*

Water quality typically drops dramatically during and immediately after a rain-storm, but often rebounds to its previous level within a few days. For this reason, year-round wet weather data throughout California were analyzed separately in order to avoid artificially lowering a location's grade, and to provide better understanding of statewide beach water quality impacts. For complete methodology, see Appendix D.

NOTE: *Heal the Bay utilizes a definition of a 'rain event' in California as precipitation greater than or equal to one tenth of an inch (≥ 0.1 "). Oregon and Washington criteria for a rain event is ≥ 0.2 " precipitation.

How current are the weekly grades?

It is important to note that the grades from the Beach Report Card represent the most current information available to the public, but they do not represent real-time water quality conditions. Currently, laboratory analyses of beach water quality samples take 18 to 24 hours to complete; then the data must be entered into a database before they are sent to Heal the Bay for a grade calculation. For weekly grades, Heal the Bay releases grades every Friday throughout the year based on the most recent available sample data for the entire west coast. Weekly grades and more can be found at www.beachreportcard.org

What type of pollution is measured?

Pollution is measured by sampling for three types of fecal indicator bacteria (FIB) including total coliform, fecal coliform (*E. coli*) and *Enterococcus* spp. Runoff from creeks, rivers and storm drains are sources of pollution to California, Oregon and

Washington beaches. Runoff may contain toxic heavy metals, pesticides, fertilizers, petroleum hydrocarbons, animal waste, trash and even human sewage.

The amounts of fecal indicator bacteria present in runoff, and consequently in the wave-wash, is currently the best indication of whether or not a beach is safe for recreational water contact. The link between swimming in waters containing elevated levels of indicator bacteria and health risk was confirmed in the ground breaking 1995 epidemiological study conducted by the University of Southern California, Orange County Sanitation District, the City of Los Angeles and Heal the Bay, under the auspices of the Santa Monica Bay Restoration Project.

Indicator bacteria do not usually cause bather illness. Instead, their presence indicates the potential for water contamination with other pathogenic microorganisms such as bacteria, viruses and protozoa that do pose a health risk to humans. The BRC includes an analysis of shoreline (ankle-deep) water quality data collected by more than 25 different State, County, and City public agencies for fecal indicator bacteria.

At present, the report card contains no information on toxins or trash in the water or on the beach.

ABOUT INDICATOR BACTERIA

The most common types of indicator bacteria include:

- **Total coliform**
- **Fecal coliform (or *E. coli*)**
- ***Enterococcus***

Total coliform, which contains coliform of all types, originates from many sources including soil, plants, animals and humans. Fecal coliform and *Enterococcus* bacteria are found in the fecal matter of mammals and birds. This fecal bacteria does not necessarily come from humans, although numerous prior studies have demonstrated that there is a significant possibility of human sewage contamination in storm drain runoff at any given time.

Why is storm drain pollution so significant?

Storm drain runoff is the greatest source of pollution to local beaches, flowing untreated to the coast and often contaminated with motor oil, animal waste, pesticides, yard waste and trash. After a rain, indicator bacteria densities often far exceed state health criteria for recreational water use. Health officials and Heal the Bay recommend that beach users never swim within 100 yards on either side of a flowing storm drain, creek, or river in any coastal waters during a rainstorm, and to stay out of the water for at least three days after a storm has ended.

Children often play directly in front of storm drains and in runoff-filled ponds and lagoons. Monitoring at "point zero" (the mouth of storm drains or creeks) is the best way to ensure that the health risks to all swimmers are minimized. This Heal the Bay recommendation was finally adopted by the State Water Resources Control Board (SWRCB) for the 2015 swimming season. In fact, the SWRCB made point zero monitoring a criterion for receiving beach water quality monitoring funds. This was great news for beachgoers and families going to the beach last summer.

For more on storm drain beaches, see "Analysis of Beach Types".

Are beaches monitored year-round?

In California, water quality samples are collected by the appropriate health agency at a minimum of once a week from April through October as required under the California Beach Bathing Water Quality Standards (AB 411) and recommended by EPA's National Beach Guidance and Performance Criteria for Recreational Waters (EPA's BEACH program). Some agencies conduct year-round sampling, while others scale back their monitoring programs dramatically from November through March, despite the fact that many surfers and ocean swimmers are in the water year-round. Starting April 2015, all monitoring agencies participating in the California Beach Program were required to sample at point-zero—where flows from

ivers, creeks, or storm drains meet the ocean. This was a major step in achieving monitoring consistency from county to county, and meeting the intent of AB411.

The majority of Oregon and Washington water quality monitoring occurs during the summer swimming season (Memorial Day through Labor Day).

This is the Beach Report Card's eighth year of grading water quality along the entire U.S. Pacific Coastline. A total of 661 shoreline monitoring locations were analyzed from Whatcom County in Washington to San Diego County at the Mexican border. Most sample locations are selected by monitoring, health, and regulatory agencies to specifically target popular beaches or those beaches frequently affected by a pollution source like runoff. In case of the Pacific Northwest, some locations are selected for being popular shell fishing beaches.

According to the EPA BEACH Act of 2000, each state having coastal recreation waters has to adopt water quality standards for bacteria in order to qualify for federal beach monitoring funding. Therefore, each state has the ability to adopt its own standards. President Trump's proposed budget for FY 2019 'red-lined' the entire BEACH Act monitoring program (approximately \$10 million). States are only required to monitor recreational waters when federal funding is available, meaning the proposed budget cuts could ultimately relinquish states of their monitoring responsibilities. Without such funds, water quality monitoring programs like Oregon's would vanish. Fortunately for beachgoers across the country, Congress restored these appropriated funds for the 2017 swimming season.

Why not test for viruses?

A common question asked by beachgoers is: "if viruses cause many of the swimming-associated illnesses, why don't health agencies monitor directly for viruses instead of indicator bacteria?" Although virus monitoring is incredibly useful in identifying sources of fecal pollution, there are a number of drawbacks to available virus measurement methods. There have been tremendous breakthroughs in the use of gene probes to analyze water samples for virus or human pathogenic bacteria, but these techniques are still relatively expensive, highly technical and not very quantitative. In addition, interpretation of virus monitoring data is difficult because, unlike bacterial indicators, there are no data available that link health risks associated with swimming in beach water to virus densities.

Many epidemiology studies have been conducted on the West Coast and have found a strong correlation between illness rates and FIB concentrations so measuring FIB is a robust way to protect public health^{3,4,5}. However, research must be continued to refine how water quality is measured..



Beach Report Card Grading and Methodology

The Beach Report Card Grading Methodology translates complex shoreline bacteria data into a grade format that is meaningful and useable by all California beachgoers.

METHODOLOGY: CALIFORNIA

Heal the Bay's Beach Report Card grading system is endorsed by the SWRCB and the Beach Water Quality Workgroup as an effective way to communicate beach water quality to the public

Past amendments to the grading methodology have included:

- The inclusion of the geometric mean into the calculation
- A firm zero-to-100 point scale
- Greater weight for Enterococcus and the total to fecal ratio relative to total coliform and fecal coliform

The methodology retains past modifications to the report card, such as the inclusion of new indicator bacteria thresholds (namely the total-to-fecal ratio), developed by the Santa Monica Bay Restoration Commission in the 1996 health effects studies of Santa Monica Bay beachgoers. It also retains the implementation of standard deviations for each indicator bacteria threshold, which was developed by the Southern California Coastal Water Research Project and Orange County Sanitation Districts during the 1998 Southern California Bight Study. Each threshold is based on the prescribed standards set in the California Department Health Service's Beach Bathing Water Standards.

As seen in Table 5-1 the methodology uses a standard A through F grading system, and grades are based on the following formula:

$$\% \text{ Grade} = \frac{\text{'TOTAL POINTS AVAILABLE'} - \text{'TOTAL POINTS LOST'}}{\text{'TOTAL POINTS AVAILABLE'}}$$

[Note: The Annual and End-of-Summer Beach Report Card methodology is modified slightly to accommodate the longer time period. For example: no greater significance is given to the most recent samples.]

Total Points Available

'Total Points Available' is derived from adding together two point components (if applicable): the Geometric Mean and the Single Sample Standard. The points for each component are listed in Table 5-2.

In order for the points in each component to become available, certain criteria must be met. (For example, the geometric mean points will be added to the 'Total Points Available' only if there are a minimum of four dry weather samples collected within the allotted time frame). Wet weather data is graded separately from dry weather data, and does not currently include a geometric mean component. Therefore, it is possible for 'Total Points Available' to be less than 100. The new grading methodology allows for a relative grade to be determined based on the actual monitoring completed.

Once the 'Total Available Points' has been determined for a specific location, then the 'Total Points Lost' can be calculated for the applicable grade components.

Total Points Lost

Separate calculations are used to quantify 'Total Points Lost' for each applicable component from the 'Total Available Points'. The following describes the two calculations.

Geometric Mean

Calculating the 'Total Points Lost' for the geometric mean component involves using the rolling 30-day geometric mean values calculated for each sample day (see Table 5-3).

Each geometric mean criterion exceeded is assigned a specific percentage of points lost. Non-exceedances are given 0%. The percentage of points lost from each of the three criteria divided by the number of sample days are multiplied by the 'Total Available Points' (any sum of percentages exceeding 100% automatically loses all 50 points available in the geometric mean component).

Single Sample Standard

Calculating the 'Total Points Lost' for the Single Sample Standard component is similar to the calculation used for deriving the points lost for the Geometric Mean. However, the Single Sample Standard component uses a gradient to calculate the 'Total Points Lost'. The gradient of percentage points lost used in calculating the number of points lost is derived from work completed by the Southern California Coastal Water Research Project and Orange County Sanitation District as part of the 1998 Southern California Coastal Bight Study (see Table 5-4).

'Percentage of points lost' is allocated depending upon the threshold exceeded by each of the four criteria. Each single sample criterion exceeded is given a 'percentage of points lost'. These amounts are presented in Table 5-4.

The 'percentage of points lost' from each of the four criteria for each sample during the time period are added together and divided by the total number of samples. Once this number is calculated (total 'percentage of points lost' divided by total number of samples), it is multiplied by the 'Total Available Points'. In the Single Sample Standard component, more points are lost as the magnitude or frequency of exceedances increases.

Points lost from the Single Sample Standard component are added to the points lost in the Geometric Mean component (if applicable) and this sum becomes 'Total Points Lost'. Once the 'Total Points Available' and the 'Total Points Lost' are calculated, a grade for a particular sample site can be determined.

Determining a Grade

$$\% \text{ Grade} = \frac{\text{'TOTAL POINTS AVAILABLE'} - \text{'TOTAL POINTS LOST'}}{\text{'TOTAL POINTS AVAILABLE'}}$$

Most dry and wet weather annual grades are calculated with 100 'Total Available Points', although there is no Geometric Mean component for wet weather grading. Wet weather grades are calculated by the total 'percentage of points lost' divided by the total number of samples and then multiplied by 100. This gives the location's score for wet weather 'Total Points Lost'. This number is then subtracted from 100 to give the percentage grade.

METHODOLOGY: OREGON AND WASHINGTON

The Oregon and Washington state grade methodology (using Enterococcus standards) was adapted from the seven standard California methodology (see Appendix A1).

Total Points Available

As seen in Table 5-2, the methodology uses a standard A through F grading system, and grades are based on the following formula:

$$\% \text{ Grade} = \frac{\text{'TOTAL POINTS AVAILABLE'} - \text{'TOTAL POINTS LOST'}}{\text{'TOTAL POINTS AVAILABLE'}}$$

Note: The Annual and End-of-Summer Beach Report Card methodology is modified slightly to accommodate the longer time period. (For example: no greater significance is given to the most recent samples.)

Wet weather data (>=0.2 inches of rain in previous 72 hours) is graded separately from dry weather data and does not currently include a geometric mean component.

'Total Points Available' is derived from adding together two point components (if applicable): the Geometric Mean and the Single Sample Standard. The points for each component are listed in Table 5-2. In order for the points in each component to become available certain criteria must be met. Oregon and Washington Summer Beach Report Card methodology calculations only include Geometric Mean scores when four or more dry weather samples are available in determining a location's 30-day geometric mean. Therefore, it is possible for 'Total Points Available' to be less than 100. The grading methodology allows for a relative grade to be determined based on the actual monitoring completed.

Once the 'Total Available Points' has been determined for a specific location, then the 'Total Points Lost' is calculated for the applicable grade components.

Total Points Lost

Separate calculations are used to quantify 'Total Points Lost' for each applicable component from the 'Total Available Points'. The following describes the two calculations:

Geometric Mean

Calculating the 'Total Points Lost' for the Geometric Mean component involves using EPA's beach bathing indicator density of 35 for the geometric mean. If there are four or more samples included in the 30-day geometric mean calculation then the 50 points for the Geometric Mean component become available. Oregon and Washington Beach Report Card methodology calculates the percentage of geometric mean exceedance days based on the number of valid (four or more) geometric means scored during the extended time period. The percentage of geometric exceedance sample days out of valid geometric mean sample days is multiplied by the 50 available points to determine the 'Total Points Lost' for the Geometric Mean component.

Single Sample Standard

The Single Sample Standard component uses a gradient to calculate the 'Total Points Lost'. The gradient of percentage of points lost used in calculating the number of points lost is derived from the EPA's Ambient Water Quality Criteria for Bacteria and is found in Table 5-6.

'Percentage of points lost' is allocated depending upon the threshold exceeded. The penalties for threshold exceedances are presented in Table 5-7. Non-exceedances lose zero points. The 'percentage of points lost' for each sample during the time period are added together and divided by the total number of samples and multiplied by the 'Total Available Points'. More points are lost as the magnitude or frequency of exceedances increases.

Points lost from the Single Sample Standard component are added to the points lost in the Geometric Mean component (if applicable) and this sum becomes 'Total Points Lost'. Once the 'Total Points Available' and the 'Total Points Lost' are calculated a grade for a particular sample site can be determined.

Determining a Grade

$$\% \text{ Grade} = \frac{\text{'TOTAL POINTS AVAILABLE'} - \text{'TOTAL POINTS LOST'}}{\text{'TOTAL POINTS AVAILABLE'}}$$

Most dry and wet weather annual grades are calculated with 100 'Total Available Points', although there is no Geometric Mean component for wet weather grading. Wet weather grades are calculated by the total 'percentage of points lost' divided by the total number of samples and then multiplied by 100. This gives the location's score for wet weather 'Total Points Lost'. This number is then subtracted from 100 to give the percentage grade.



TABLE 5-1: GRADING SYSTEM

A	B	C	D	F
100%-90%	89%-80%	79%-70%	69%-60%	<60%

TABLE 5-2: TOTAL POINTS AVAILABLE BY COMPONENT

Geometric Mean	50 points
Single Sample Standard	50 points
Total	100 points

TABLE 5-3: CALCULATING THE TOTAL POINTS LOST FOR THE GEOMETRIC MEAN COMPONENT

Indicator Exceeded	Calif. Beach Bathing Water Standard	% of Total Available Points Lost** Due to Exceedance	Total Avail. Points
Enterococcus	35	80%	50
Fecal Coliform	200	40%	
Total Coliform	1000	20%	

* Colony forming units per 100 milliliters of ocean water

TABLE 5-4: SINGLE SAMPLE GRADIENT THRESHOLDS IN CFU/100ML*

Indicator Bacteria	SLIGHT T - 1 SD	MODERATE T + 1 SD	HIGH > T + 1 SD	EXTREME Very High Risk
Total Coliform	6,711-9,999	10,000 -14,900	> 14,900	N/A
Fecal Coliform	268-399	400 -596	> 596	N/A
Enterococcus	70-103	104 -155	> 155	N/A
Total: Fecal Ratio (when total ≥ 1,000)	10.1-13	7.1- 10	2.1-7	< 2.1

* Colony forming units per 100 milliliters of ocean water. N/A = Not applicable
SD = Standard Deviation. **Bold** = California State Health Department standards for a single sample

TABLE 5-5: CALCULATING THE TOTAL POINTS LOST FOR THE SINGLE SAMPLE STANDARD COMPONENT

Indicator Exceeded	SLIGHT % Points Lost	MODERATE % Points Lost	HIGH % Points Lost	EXTREME % Points Lost	Total Available Points
Total Coliform	10%	30%	40%	N/A	50
Fecal Coliform	10%	30%	40%	N/A	
Enterococcus	20%	40%	60%	N/A	
Ratio (when total > 1,000)	25%	50%	75%	100%	

TABLE 5-6: SINGLE SAMPLE GRADIENT THRESHOLDS IN CFU/100ML*

Indicator Bacteria	SLIGHT T - 1 SD	MODERATE T + 1 SD	HIGH > T + 1 S
Enterococcus	70-103	104 -155	>155

* Colony forming units per 100 milliliters of ocean water
SD = Standard Deviation. **Bold** = California State Health Department standards for a single sample

TABLE 5-7: CALCULATING THE TOTAL POINTS LOST FOR THE SINGLE SAMPLE STANDARD COMPONENT

Indicator Exceeded	SLIGHT % Points Lost	MODERATE % Points Lost	HIGH % Points Lost	Total Available Points
Enterococcus	25%	75%	100%	50

Significant Bills and Acts

Clean Water Act- Federal (1972)

Establishes the basic structure for regulating discharges of pollutants into the waters of the United States.

AB 411 - California (1997)

Beach Bathing Water Quality Standards. Requires all waters along California's coast to meet certain minimum standards. Coastal waters will be tested weekly during the period of April through October.

AB 538 - California (1999)

Requires the state board to develop source investigation protocols for use in conducting source investigations of storm drains that produce exceedances of specified bacteriological standards.

BEACH Act - Federal (2000)

Beaches Environmental Assessment and Coastal Health Act. Amends the Clean Water Act and authorizes the EPA to award grants to reduce the risk of illness to users of the nation's recreational waters.

CBI - California (2001)

California's Clean Beach Initiative. Grant program provides funding for projects that will improve California's coastal water quality and swimmers' safety. Funding priority is given to projects that reduce bacterial contamination on busy California beaches.

Proposition O (Prop O) - Los Angeles (2004)

Authorized the City of Los Angeles to issue a series of general obligation bonds for up to \$500 million for projects to protect public health by cleaning up pollution, including bacteria and trash, in the city's watercourses, beaches and the ocean, in order to meet Federal Clean Water Act requirement

ARRA - Federal (2009)

American Recovery and Reinvestment Act. Stimulus package, from which \$18 billion is allocated for relief and investment in environment, public health and 'green' alternatives.

SB 482 - California (2011)

Public Beach Contamination, Standards, Testing, Closing. Allows the State Board to direct permit fees up to \$1.8 million towards California's Beach Program and requires the drafting of regulations relating to testing of waters adjacent to public beaches.

Recreational Water Quality Criteria – Federal (2012)

After 25 years, USEPA updates water quality standards/criteria to protect people swimming in recreational waters (e.g., lakes, rivers, beaches) from microbial organisms such as bacteria and viruses. Introduces Statistical Threshold Values (STV) and Beach Action Values (BAV) into the beach water quality lexicon.

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Humboldt County Environmental Health Division	Services	County of Orange Environmental Health
Mendocino County Environmental Health Department	Santa Barbara County Environmental Health Services	Orange County Sanitation District
Sonoma County Environmental Health Division	Ventura County Environmental Health Division	San Diego County Department of Environmental Health
Marin County Environmental Health Services	City of Los Angeles Environmental Monitoring Division	San Elijo Joint Powers Authority
San Francisco Public Utilities Commission	Los Angeles County Sanitation Districts	City of San Diego
East Bay Regional Park District	County of Los Angeles Department of Public Health Environmental Health	City of Oceanside
San Mateo County Environmental Health Division	City of Redondo Beach	Encina Wastewater Authority
Santa Cruz County Environmental Health Services	City of Long Beach Department of Health and Human Services Environmental Health Division	State Water Resources Control Board
Monterey County Environmental Health Bureau	South Orange County Wastewater Authority	
San Luis Obispo County Environmental Health		

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