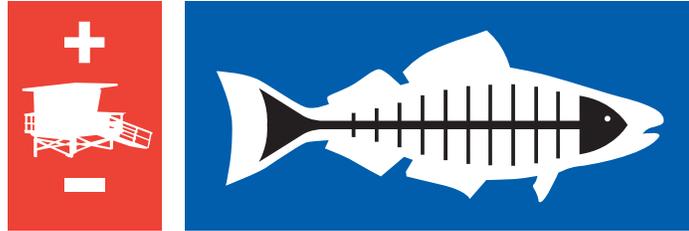


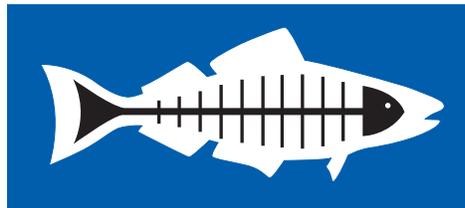
Heal the Bay's
**2013-2014 Annual
Beach Report Card**



BEACH REPORT CARD



2013-2014



Heal the Bay

Heal the Bay is a nonprofit environmental organization 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.

The Beach Report Card program is funded by grants from



Swain Barber Foundation

We at Heal the Bay believe the public has the right to know the water quality at their favorite 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.

This page: Avalon Bay, Catalina Island
Cover photo: The Wedge, Newport Beach



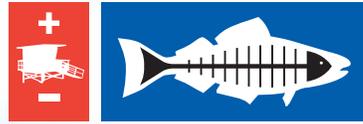


TABLE OF CONTENTS



SECTION ONE

Introduction

Executive Summary 6

SECTION TWO

The Beach Report Card

County by County Summary Reports 16

SECTION THREE

BRC Impacts and News

California Beach Types and Water Quality 48

The Clean Beach Initiative (CBI) 50

Total Maximum Daily Loads (TMDLs) 53

Major Beach News 55

Recommendations for the Coming Year 65

Frequently Asked Questions (FAQs) 70

SECTION FOUR

Appendices

Methodology for California 76

Methodology for Oregon and Washington 78

2013-2014 Honor Roll 80

Grades by County – California 81

Grades by County – Washington 94

Grades by County – Oregon 97

Index and Glossary 98

Acknowledgements 100



Executive Summary

Beaches in the U.S. accommodate nearly two billion beach visits each year¹ and provide enormous economic benefits to their communities. Beach visitors contribute to an estimated \$90 billion coastal tourism economy² yet recreating at polluted beaches can also result in significant economic loss. A study conducted in Los Angeles County and Orange County concluded that the regional public health cost of gastrointestinal illnesses caused by recreating in polluted ocean waters was between \$21 million and \$51 million each year³.

Beach water quality monitoring data helps to ensure the health protection of the millions of beachgoers who recreate in U.S. coastal waters. Heal the Bay's Beach Report Card was first published in 1991 for Los Angeles County and has grown to include analysis of beach water quality for the entire west coast of the United States. Beachgoers throughout Washington, Oregon, and California can find easy to understand water quality grades for their local beaches updated each week at beachreportcard.org. The A-to-F grades assigned to each location represent the risk of adverse health effects to beachgoers. The better the grade a beach receives, the lower the risk of contracting an illness from water recreation at that location.

This 2013-2014 Annual Beach Report Card is a summary of the past year's water quality at more than 600 beach monitoring locations along the West Coast for three distinct periods:

- **Summer dry weather** (the months covered under Assembly Bill 411 [AB 411] in California)
April through October 2013
- **Winter dry weather** – November 2013 through March 2014
- **Year-round wet weather conditions** – April 2013 through March 2014.

In addition to summarizing marine water quality, this report includes a brief review of the number of sewage spills that impacted beach recreational waters over the past year. The information derived from these analyses is used to develop recommendations for cleaning up problem locations to make them safer for beach users.

West Coast Beach Water Quality Overview

The Pacific Northwest saw very good water quality this past year. Though generally clean with 89% of the 172 monitoring locations receiving excellent or good (A or B) grades during summer dry weather, Washington State's A or B grades were down six percent from last year. Ten of Oregon's 11 frequently sampled (at least weekly) monitoring locations received A grades during summer dry weather.

Oregon and Washington monitor beach water quality at most locations from Memorial Day through Labor Day only. Fifteen monitoring locations in Washington were monitored consistently throughout the winter this past year and earned grades for all three time periods in this report. 78% of Washington monitoring locations earned A or B grades during wet weather. This was a moderate drop from the state's three-year average of 87%. See Pacific Northwest water quality trends on pages 42-43.

¹ <http://water.epa.gov/type/ocwb/beaches/basicinfo.cfm> ² National Ocean Economics Program, State of the U.S. Ocean and Coastal Economies, Center for the Blue Economy at the Monterey Institute of International Studies (2014) ³ Given, S. et al, Regional Public Health Cost Estimates of Contaminated Coastal Waters: A Case Study of Gastroenteritis at Southern California Beaches, 40 Environ. Sci. Technol. 4851 (2006)



Santa Monica Pier

FIGURE 1-1: OVERALL CALIFORNIA GRADES
2013-2014 GRADES

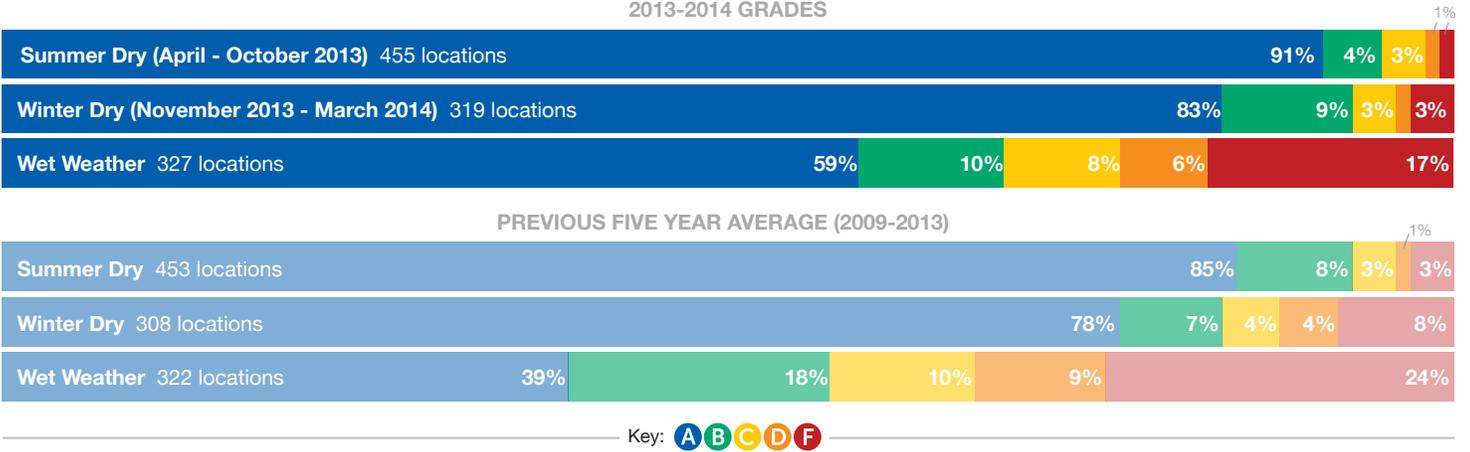
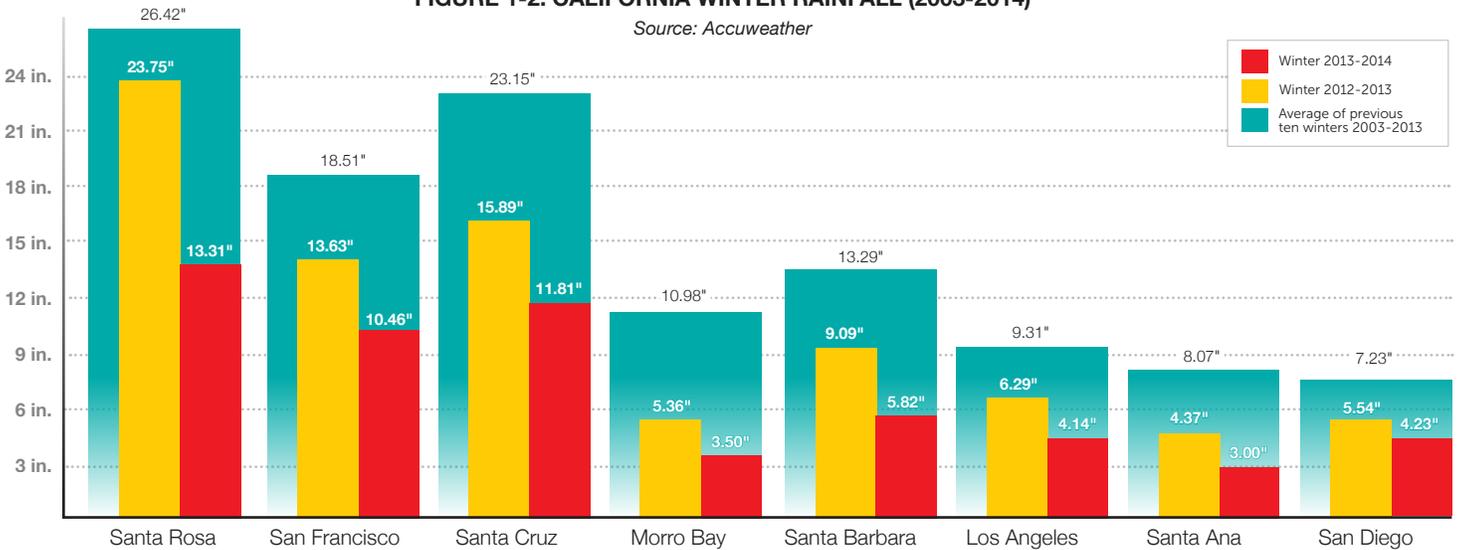


FIGURE 1-2: CALIFORNIA WINTER RAINFALL (2003-2014)

Source: Accuweather





HONOR ROLL
Will Rogers Beach @ Pulga Canyon



HONOR ROLL
The Wedge, Newport Beach



HONOR ROLL
Cabrillo Beach (oceanside), San Pedro

Beaches in California had excellent water quality overall this past year, with 432 of 455 (95%) locations receiving excellent or good (A or B) grades during the summer dry weather period (Figure 1-1). Statewide wet weather water quality was near an all-time high this year (most likely due to the driest year on record in California) with 69% A or B grades, besting the five-year average by 12%.

Over the past few years, rainfall levels in California (and especially in Southern California) were well below average. In fact precipitation levels this past winter were 44% and 57% of the previous 10 winter averages for Los Angeles and San Francisco rain stations, respectively (Figure 1-2). During drier weather conditions there is less overall runoff, which is the main source of pollutants, such as bacteria, to the beach water. Beach water quality grades may be higher in a given year due to less runoff, yet the resulting improved water quality may be providing a false sense of long-term beach water quality improvement. For more information please see Drought and Climate Change and Beach Water Quality on page 55 under *Beach News*.

A list of all grades can be found in Appendix C.

California Overview

California’s overall water quality during the summer dry time period this past year was excellent with 95% A or B grades, slightly above the five-year average (Figure 1-1). There were 23 monitoring locations that received fair to poor water quality marks (C-F grades) for the same time period.

During winter dry weather, most California beaches still had very good water quality with 294 of 319 (92%) locations monitored through the winter receiving A or B grades. Lower grades during the same time period include: 11 C grades (3%), 4 D grades (1%) and 10 F grades (3%).

Summer dry weather grades in the San Francisco Bay area (Marin County through San Mateo County) were also excellent with 95% (42 of 44) of ocean-side locations receiving A or B grades. The bayside’s water quality was good, though three percent below last year and seven percent below the five-year average with 86% of monitoring locations (24 of 28) receiving A or B grades this past summer.

Only 38 of the 72 (53%) Bay Area locations were monitored consistently through the winter. Winter dry weather water quality at oceanside monitoring locations was excellent with 23 of 24 monitoring locations receiving A or B grades, while the bayside remained on par with the previous year with only 50% A or B grades.

Southern California had excellent summer dry weather water quality with 97% A or B grades (Figure 1-3). This was the third year in a row of very low rainfall in Southern California and as a result its beaches experienced less urban runoff, which likely led to the improvement of overall grades. See “Drought and Climate Change and Beach Water Quality” under *Beach News* on page 55.



HONOR ROLL
Malaga Cove, Palos Verdes

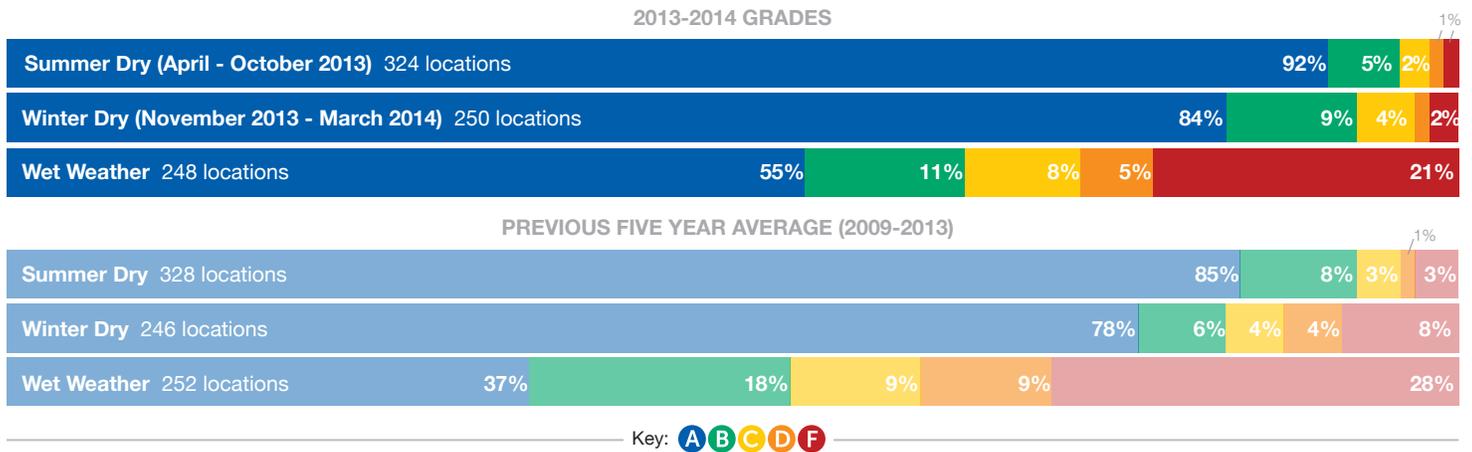


HONOR ROLL
Montara State Beach, San Mateo County



HONOR ROLL
Venice Beach @ Windward Avenue drain

FIGURE 1-3: SOUTHERN CALIFORNIA GRADES
Combined grades for Santa Barbara, Ventura, Los Angeles, Orange and San Diego Counties



During wet weather, 31% of California’s monitoring locations received fair-to-poor grades (C, D or F) with 17% earning F grades (Figure 1-1). This marked seasonal difference in water quality is why Heal the Bay and California’s public health agencies continue to recommend that no one swim in recreational waters during, and for at least three days after a significant rainstorm. For more information on the rain advisory see “Re-examining California’s 3-Day Rule” a joint study by Heal the Bay and UCLA, under *Beach News* on page 61.

California Honor Roll Beaches

A select few (33) monitoring locations in California exhibited excellent water quality (A+ grades) during all three time periods in this report and have been appointed to Heal the Bay’s Honor Roll this year. A list of Honor Roll recipients can be found in Appendix B.

California Beach Bummers

The monitoring locations with the poorest dry weather water quality in California this past year populate our list of “Beach Bummers.” (Figure 1-4). The list includes:

- 1. Cowell Beach at the wharf.** After earning the No. 2 spot the last two years in a row, Cowell Beach claims the infamous No. 1 Beach BUMMER spot this year. Over 90% of samples during the summer dry period ex-



BEACH BUMMER
Santa Monica Pier



BEACH BUMMER
Marina Lagoon, San Mateo



BEACH BUMMER
Mother's Beach, Marina del Rey

ceeded at least one state bacterial standard at this location. Fortunately after two years of research, a pollution source has been identified. Human fecal sources were linked to corroded sewer pipes and faulty storm drain infrastructure. The State Water Resources Control Board (State Board) recently issued preliminary Clean Beach Initiative (CBI) funding commitments to repair the damaged sewer and storm drain pipes. These projects will commence after final State Board approvals.

2. Marina Lagoon. Two locations in San Mateo’s enclosed Marina Lagoon (Aquatic Park and Lakeshore Park) move up four spots to share the No. 2 Beach Bummer slot this year due to poor water circulation.

3. Mother’s Beach. After exhibiting extremely poor water quality this past year, Mother’s Beach in Marina del Rey, joins the Beach Bummer list by taking the No. 3 slot. The installed circulation device, which aids beach water flow and bacteria dilution at Mother’s Beach, was not functioning due to maintenance issues most of the year, likely contributing to very poor grades.

4. Cabrillo Beach (harborside). Like a broken record, Cabrillo Beach joins the list yet again at the No. 4 Beach Bummer spot. Cabrillo Beach’s chronically poor water quality grades continue to persist, despite over \$20 million invested in water quality improvement efforts.

5. Stillwater Cove. After a ten year hiatus Stillwater Cove earns the No. 5 spot in this year’s report (No. 6 Beach Bummer in 2004). An adjacent storm drain, carrying urban runoff from a nearby shopping center and golf course likely contributed to Stillwater Cove’s poor beach water quality this past year.

California Coastal Counties “Quick-Look”

San Diego County. San Diego continued to exhibit excellent beach water quality this past year, with 100% of all monitoring locations receiving an A or B grade during summer dry weather. Winter dry weather water quality was also excellent with 98% A or B grades. Wet weather grades were down eight percent from the last report to 79% A or B grades this past year, though bested the five-year county average (by 7%) and the statewide average (by 10%). For more information about San Diego County’s beach water quality this past year, see page 16.

Orange County. A or B grades for summer dry weather in Orange County (99%) were up six percent over the previous year. Beach water quality during winter dry weather was also excellent with 97% A or B grades (up 11% from last year). Wet weather A or B grades (66%) slipped slightly from last year (73% A or B grades) though still bested the five-year average by 7%. For more information about Orange County’s beach water quality this past year, see page 18.



BEACH BUMMER
Cabrillo Beach harborside



BEACH BUMMER
Stillwater Cove, Monterey



BEACH BUMMER
Cowell Beach, Santa Cruz

FIGURE 1-4: BEACH BUMMERS FOR PAST FIVE YEARS
Beaches listed in **BOLD** appear on the current 2013-2014 Beach Bummers list.

2010	2011	2012	2013	2014 BEACH BUMMERS
AVALON, CATALINA ISLAND	COWELL BEACH, SANTA CRUZ	AVALON, CATALINA ISLAND	AVALON, CATALINA ISLAND	COWELL BEACH AT WHARF SANTA CRUZ COUNTY
COWELL BEACH, SANTA CRUZ	AVALON, CATALINA ISLAND	COWELL BEACH, SANTA CRUZ	COWELL BEACH, SANTA CRUZ	MARINA LAGOON SAN MATEO COUNTY
CABRILLO BEACH, HARBORSIDE	CABRILLO BEACH, HARBORSIDE	MARIE CANYON, MALIBU	POCHE BEACH, ORANGE COUNTY	MARINA DEL REY MOTHER'S BEACH LOS ANGELES COUNTY
POCHE BEACH, ORANGE COUNTY	TOPANGA STATE BEACH	SURFRIDER BEACH, MALIBU	CABRILLO BEACH, HARBORSIDE	CABRILLO BEACH HARBORSIDE LOS ANGELES COUNTY
SANTA MONICA PIER	POCHE BEACH, ORANGE COUNTY	SOLSTICE CANYON, MALIBU	MALIBU PIER, LOS ANGELES COUNTY	STILLWATER COVE MONTEREY COUNTY
COLORADO LAGOON, LONG BEACH	DOHENY STATE BEACH, ORANGE COUNTY	CABRILLO BEACH, HARBORSIDE	MARINA LAGOON SAN MATEO COUNTY	CLAM BEACH COUNTY PARK HUMBOLDT COUNTY
BAKER BEACH, SAN FRANCISCO	ARROYO BURRO (HENDRY'S BEACH)	DOHENY STATE BEACH, DANA POINT	DOHENY STATE BEACH, ORANGE COUNTY	SANTA MONICA PIER LOS ANGELES COUNTY
CAPITOLA BEACH, SANTA CRUZ	BAKER BEACH, SAN FRANCISCO	POCHE BEACH, ORANGE COUNTY	REDONDO BEACH PIER, LOS ANGELES COUNTY	PILLAR POINT HARBOR SAN MATEO COUNTY
MISSION BAY, SAN DIEGO	COLORADO LAGOON, LONG BEACH	ESCONDIDO STATE BEACH, MALIBU	WINDSURFER CIRCLE, SAN FRANCISCO COUNTY	CAPITOLA BEACH WEST OF JETTY SANTA CRUZ COUNTY
WILL ROGERS BEACH, LOS ANGELES	CAPITOLA BEACH, SANTA CRUZ	TOPANGA STATE BEACH	TIJUANA RIVER MOUTH, SAN DIEGO COUNTY	WINDSURFER CIRCLE SAN FRANCISCO COUNTY

Los Angeles County. Summer dry weather water quality in Los Angeles was excellent with 90% A or B grades. Winter dry water quality was also very good with 86% A or B grades (besting the five-year average by 13%). Wet weather water quality continues to be an area of concern statewide. Wet weather grades in Los Angeles are no exception, with 50% A or B grades. Though wet weather grades slipped slightly from last year (57% A or B grades), they bested the county's five-year average by 13%. Los Angeles County's percentage of wet weather A or B grades was 19% lower than the statewide average of 69% A or B grades. Los Angeles County is also host to three of the 10 beaches on the statewide Beach Bummer list this year: Santa Monica Municipal Pier (No. 7), Cabrillo Beach harborside (No. 4) and Marina del Rey Mother's Beach (No. 3). For more information about Los Angeles County's beach water quality this past year, see page 21.

Ventura County. Summer dry water quality grades in Ventura County were excellent this past year, with 100% of locations receiving A grades. Winter dry and wet weather grades were also excellent with 100% A or B grades. This year Ventura County bested its five-year average during winter dry and wet weather and beat the statewide average for all three time periods. For more information about Ventura County's beach water quality this past year, see page 28.

Santa Barbara County. Santa Barbara displayed excellent water quality grades this past year, with 100% A grades during summer dry weather and 94% A or B grades during winter dry weather. Wet weather water quality was good with 81% A or B grades, besting the five-year county average by 33% and the statewide average by 12%. For more information about Santa Barbara County's beach water quality this past year, see page 29.

San Luis Obispo County. Summer dry weather water quality grades in San Luis Obispo County were good this past year with 89% A or B grades, though slightly down from the previous year (95% A or B grades). Water quality during winter dry weather was excellent with 94% A grades (five percent above the five-year county average). Wet weather grades were excellent with 95% A or B grades this year showing a marked improvement over last year's 84% and bested the five-year county average by 13% (82% A or B grades) and 26% above the statewide average (69% A or B grades). For more information about San Luis Obispo County's beach water quality this past year, see page 30.

Monterey County. Monterey County's summer dry weather water quality grades were on par with last year with 75% A or B grades, though eight percent below the five-year county average (83% A or B grades). Beaches were not monitored frequently enough during the winter dry and wet weather periods to receive a grade for those time periods. Monterey County's Stillwater Cove joins the Beach Bummer list for the first time since 2004 at No. 5. For more information about Monterey County's beach water quality this past year, see page 31.

Santa Cruz County. Summer dry weather grades were up 8% from the previous year with 85% A grades in 2013, and bested the five-year county average by 22%. Winter dry grades were excellent with 100% of locations receiving A or B grades. Santa Cruz County's wet weather grades improved by 60%, from 25% A or B grades last year (the worst in the state) to 85% A grades this year. Wet weather grades bested the five-year county average by 37% (48% A or B grades) and the state average this year by 16% (69% A or B grades). Though Santa Cruz County's water quality grades are up from last year, two of the county's beaches still earned spots on the Beach Bummer list this year, including the No. 1 Beach Bummer: Cowell Beach at the wharf (No. 1) and Capitol Beach west of the jetty (No. 9). For more information about Santa Cruz County's beach water quality this past year, see page 32.

San Mateo County. San Mateo County's summer dry grades were good and on par with the county's five-year average of 83% A grades. Winter dry weather grades fared better than summer dry grades with 91% A or B grades. Wet weather water quality was up 20% from last year with 64% A or B grades, 10% above the county's five-year average (54%). San Mateo's Marina Lagoon (Aquatic Park and Lakeshore Park) climbed four notches from last year (No. 6 Beach Bummer) and share this year's No. 2 Beach Bummer spot. For more information about San Mateo County's beach water quality this past year, see page 34.





San Francisco County. This year San Francisco County earned very good water quality grades during summer dry weather with 86% of locations receiving A or B grades. Winter dry weather grades were fair and on par with last year with 71% of monitoring locations receiving A or B grades (3% below the county’s five-year average). Wet weather grades were up 21% from last year with 64% A or B grades and bested the county’s five year average by three percent (61% A or B grades). Windsurfer Circle at Candlestick Point earns its second consecutive year on the notorious Beach Bummers list (No. 10). For more information about San Francisco County’s beach water quality this past year, see page 36.

Contra Costa and Alameda Counties. Water quality grades for East Bay beaches were excellent during summer dry weather and on par with last year, with all locations receiving A grades. Only two Alameda County monitoring locations were sampled frequently enough to receive winter dry grades: Crown Beach Crab Cove (F grade) and Crown Beach Bird Sanctuary (D grade). Wet weather water quality this past year improved dramatically with all locations earning A grades (40% A or B grades the previous year). For more information about the East Bay’s beach water quality this past year, see page 38.

Marin County. Marin County earned excellent water quality grades this past year during summer dry weather with all but one location receiving an A grade (one B grade). Monitoring locations were not sampled through the winter. For more information about Marin County’s beach water quality this past year, see page 39.

Sonoma County. Sonoma County earned excellent water quality grades this past year during summer dry weather with all monitoring locations receiving A grades. Monitoring locations in Sonoma County were not sampled through the winter. For more information about Sonoma County’s beach water quality this past year, see page 40.

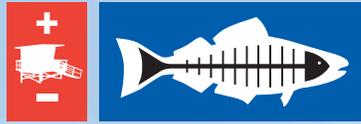
Mendocino County. Six monitoring locations in Mendocino County were sampled on a consistent weekly basis during summer dry weather this past year and all received A grades. No beaches in Mendocino County were sampled frequently enough through the winter to earn grades for any other time period in this report. For more information about Sonoma County’s beach water quality this past year, see page 40.

Humboldt County. Humboldt County’s summer dry weather water quality grades were good with 4 of 5 earning A or B grades, though below the county’s five-year average of 96% A or B grades. Humboldt’s Clam Beach County Park near Strawberry Creek scored the county’s only poor grade (D) and took the No. 6 spot on our annual Beach Bummers list. Monitoring locations were not sampled frequently enough through the winter to receive grades for any other time period in this report. For more information about Humboldt County’s beach water quality this past year, see page 41.

Del Norte County. The beach at Battery Point Lighthouse in Crescent City earned A grades for all three time periods this past year. No other locations in Del Norte County were sampled frequently enough (at least weekly) to receive grades in this report. 



Zuma Beach creek outlet



THE BEACH REPORT CARD



Storm drain runoff is the greatest source of pollution to local beaches, flowing untreated to the coast and potentially contaminated with motor oil, animal waste, pesticides, yard waste and trash.

The Beach Report Card (BRC) is based on the routine monitoring of beaches conducted by local health agencies and dischargers.

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.



San Diego County

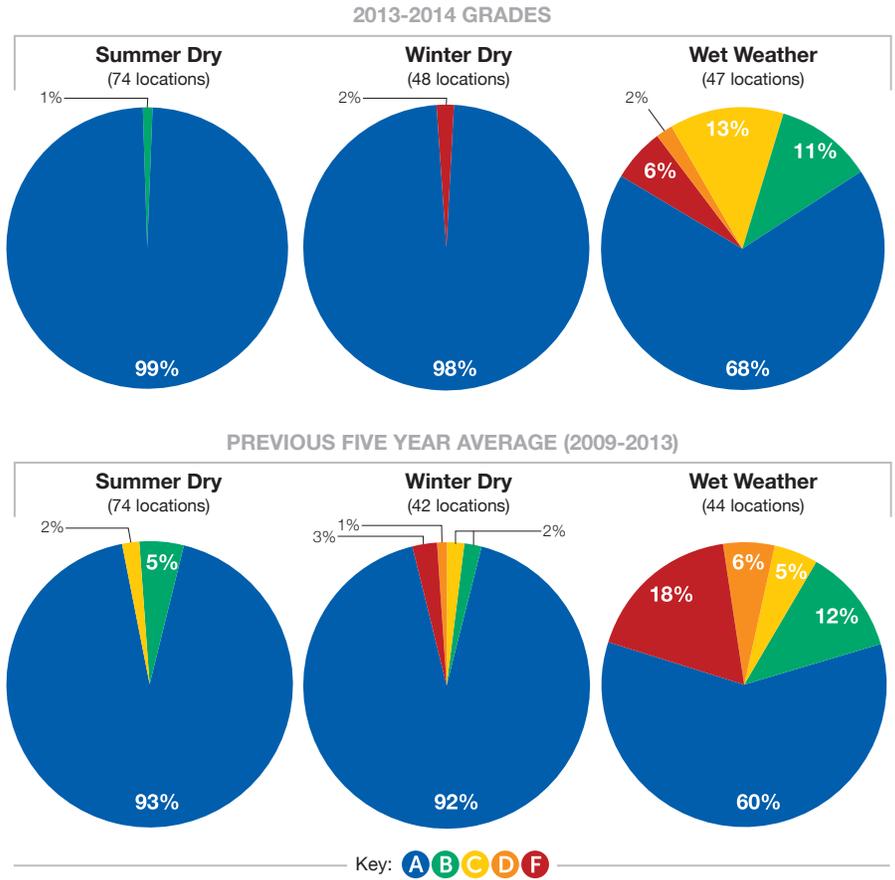
There are five agencies within San Diego County that provided monitoring information for Heal the Bay's Beach Report Card:

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

Samples were collected throughout the year along open coastal and bay beaches. Some sites are near flowing storm drains, creeks or rivers. Drainage outlet samples were generally collected at the wave wash (where runoff and ocean water mix) or 25 yards away from a flowing storm drain, creek or river.

Beach water quality during summer dry weather at the 74 monitoring locations in San Diego County was excellent. The County's water quality during winter dry weather was also excellent with 47 of 48 (98%) monitoring locations receiving A or B grades (only 65% of the summer monitoring locations were sampled consistently throughout the winter). One location in San Diego County scored below an A grade during dry weather: Tijuana Rivermouth (F grade during winter dry weather). Figure 2-1 com-

FIGURE 2-1: SAN DIEGO COUNTY BEACHES



compares San Diego County's water quality grades for this past year to the five-year average. The percentage of wet weather A or B grades (79%) was down eight percent from the previous year though still bested the county's five-year average (by 7%) and this year's statewide average (by 10%).

A complete list of grades for San Diego County's beach monitoring locations can be found in Appendix C1 on page 81.

Tijuana River Impacts

Flows from the sewage-impacted Tijuana River continue to impact San Diego beaches from the international border north to Coronado. In Mexico, the Tijuana River flows year-round with all dry weather flows (less than 30 million gallons per day) diverted to a sewage treatment plant. The Tijuana River diversion and treatment plant were part of a multifaceted water quality treaty between the United States and Mexico, which has led to significantly improved summer dry beach water quality along the south county coastline. However, the diversion cannot facilitate high volume flows (e.g. during a significant rain event) and can result in potentially hundreds of millions of gallons of sewer laden stormwater and other contaminants entering United States waters. More specifically, flows from the Tijuana River enter the Tijuana Slough National Wildlife Refuge and estuary before being discharged (approximately one mile north of the International Boarder) to the Pacific Ocean.

Under typical conditions, near-shore currents usually divert Tijuana River flows south towards Mexico, though storms and other meteorological factors can rapidly influence (and change) current directions with little or no warning. As a precautionary approach, when the Tijuana River is flowing, beach closures are issued from the international border to the south end of Seacoast Drive in Imperial Beach. When precautionary beach closures are in effect, the San Diego Department of Environmental Health (DEH) monitors flow conditions and when appropriate, will initiate beach water quality monitoring in an effort to reopen affected beaches.

Sewage Spill Summary

This past winter, sewage discharge into the Tijuana River resulted in six separate closure events from Imperial Beach to the international border. Each of the closure events ranged from three to sixteen days in duration. Two sewage spills of known volume led to other beach closures in San Diego County this past year. The first spill (approximately 100 gallons) occurred January 7, 2014 as a result of a blocked sewer lateral and closed Spanish Landing Beach for seven days. The second spill (an estimated 22,000 gallons) occurred December 1, 2013 and closed Ocean Beach and South Mission Beach for six days. 🏠

For additional water quality information:
 County of San Diego
 Department of Environmental Health
www.sdbeachinfo.com



Baticuitos Lagoon outlet



Orange County

There are three agencies within Orange County that provide monitoring information to Heal the Bay's Beach Report Card:

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

Samples were collected throughout the year along open coastal, harbor, and bay beaches, as well as near flowing storm drains, creeks or rivers. Samples were generally not collected at point zero (at the drainage outlet) but instead at a distance from the potential pollution source.

Orange County grades for summer dry weather this past year were excellent – 98 of 102 locations (96%) scored A grades – with only one location scoring below a B grade: Dana Point Harbor Baby Beach, buoy line (C grade).

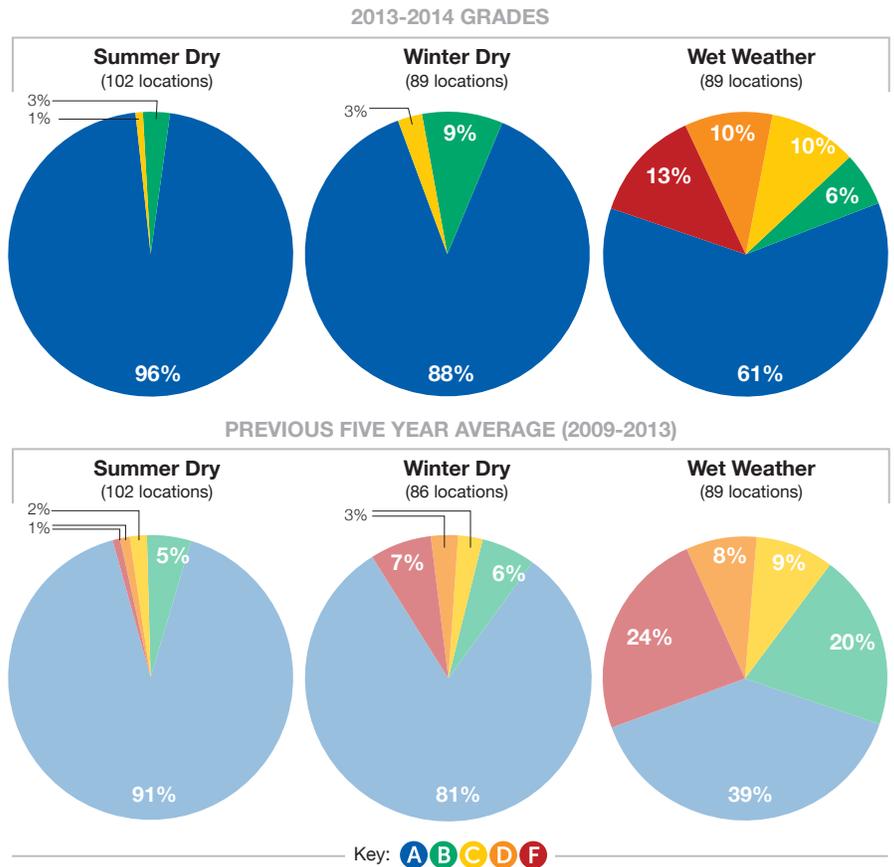
During winter dry weather, 97% of year round monitored beaches (89 locations) received A or B grades, with only three locations earning C grades: Seal Beach projection of 1st Street, Huntington State Beach projection of Brookhurst Street, and Doheny State Beach north of San Juan Creek.

Wet weather water quality this past year in Orange County dipped to 66% A or B grades (compared to 73% A or B grades in 2012-2013) though still bested the county's five-year average of 59% A or B grades for wet weather.

Figure 2-2 illustrates an assessment of this past year's grade percentages at Orange County beaches compared to the five-year average. Orange County once again displayed excellent summer dry weather water quality grades with 99% A or B grades this past year. Winter dry weather was also excellent with 97% A or B grades, 10% above the five-year average (87% A or B grades).

A complete list of grades for Orange County's beach monitoring locations can be found in Appendix C1 on page 83.

FIGURE 2-2: ORANGE COUNTY BEACHES



Model Monitoring Program

Four years ago, Orange County began to investigate integrating multiple agencies' efforts into a model monitoring program by pooling the sampling resources of wastewater facilities, stormwater programs and the Orange County Health Care Agency. This concept was then brought to the San Diego Regional Water Quality Control Board who approved a resolution supporting the regional monitoring framework, and expressed support for the development and implementation of improved monitoring and assessment programs for waters in the region (both Orange County and San Diego County). For details on this regional collaborative monitoring framework please go to www.waterboards.ca.gov/

sandiego/water_issues/programs/swamp/docs/MonitoringFrameworkForSDR-final.pdf

Heal the Bay is encouraged by this integrated approach to beach water quality monitoring and will be working at the state level to ensure that all California monitoring programs meet specific minimum monitoring criteria. See *Recommendations* on page 67 for Heal the Bay’s proposed minimum monitoring requirements.

Poche Beach News

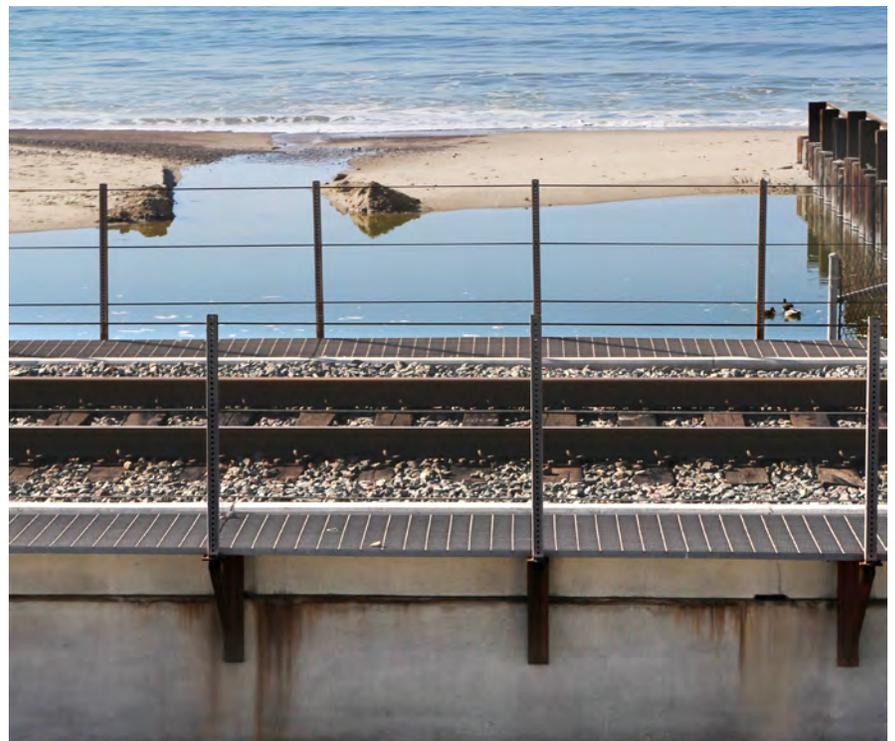
This year, Poche Beach’s historically poor water quality grades saw much improvement (No. 3 Beach Bummeur in last year’s report) and earned A or B grades for all three time periods. Poche Beach’s improved grades are perhaps due to the recent multi-agency beach water quality improvement efforts. While the beach’s urban runoff treatment facility has continued to meet effluent water quality standards, runoff from an adjacent pond (and a local bird hang-out) has been linked to elevated fecal indicator bacteria (FIB) levels in the beach water. Poche Beach’s large bird population led to the initiation of a falconry program, where falcons are brought by a falconer to a specific area to deter the general bird population from roosting and/or visiting their typical hangout spot. Orange County Waste and Recycling is currently implementing this program at the Prima Deshecha Landfill, where birds typically like to stop before making their way to Poche Beach. In addition, the City of San Clemente plans to organize a falconry program at Poche Beach this summer. Orange County Parks plans to continue their bird deterrent coyote decoy program, which has shown promising results. The decoy program, implemented last fall, places coyote decoys along the Poche Creek outlet and surfzone, deterring birds from these areas.

Doheny Beach News

Doheny Beach has been the focus of numerous water quality studies, including the 2007-2008 epidemiology study, summarized in the article “Using Rapid Indicators for Enterococcus to Assess the Risk of Illness after Exposure to Urban Runoff Contaminated Marine Water”, published in Water

Research in 2012 (www.ncbi.nlm.nih.gov/pmc/articles/PMC3354759).

The study’s main findings suggest an increased risk of swimming-associated gastrointestinal (GI) illness at Doheny Beach. The City of Dana Point is facilitating a multi-agency task force focused on improving Doheny Beach’s water quality. The agencies include: State Parks, the State Board, San Diego Regional Water Quality Control Board (RWQCB), the County of Orange, Dana Point Harbor, Orange County Health Care Agency, San Juan Capistrano, South Coast



AB411	Exceedance Days	Grade
2013	18	B
2012	60	F
2011	46	F
2010	50	F
2009	57	F
2008	50	F
2007	42	F
2006	42	F
2005	19	C
2004	44	F

Poche Beach, San Clemente



North Beach Doheny, Dana Point

Water District, Caltrans, Southern California Coastal Water Research Project (SCCWRP), OC Waste and Recycling and the City of San Clemente.

The main focus is on an area-wide sanitary survey to address all potential human sources. Current survey results have led to the following: homeless encampment management, the implementation of a new vessel ordinance regulating boat waste disposal, repaired sewer lines, and the replacement of a leaking hotel sewage pipe.

A falconry program (see Poche Beach section on page 19) has also helped manage Doheny Beach’s bird population, a source identified as contributing to increased FIB levels in the beach water.

Sewage Spill Summary

Orange County had eleven sewage spills that led to beach closures this past year. Six spills were greater than 1,000 gallons. The largest spill occurred August 31, 2013 (approximately 77,000 gallons) due to a pump station failure at the Costa Mesa Sanitary District, resulting in three days of beach closures between upper Newport Bay (the Santa Ana Delhi Channel) and Newport Beach in Newport Dunes. On January 1, 2014 a pump station failure in the City of Huntington Beach resulted in an estimated 2,000 gallons (approximately 1,200 gallons recovered) and closed Humboldt Beach, Davenport Beach, and the

Huntington Harbour Channel for three days. A line blockage occurring on February 12, 2014 led to the release of between 1,500-2,000 gallons of sewage, causing Monarch Beach and Salt Creek Beach to be closed for three days. An estimated 1,100 gallon spill occurred on March 3, 2014 caused by root blockage, closing the Blue Lagoon Beach in Laguna Beach for two days.

Other smaller spills throughout the summer closed Portofino Cove in Huntington Harbour (300 gallons/five day closure beginning April 20, 2013), Portofino Cove in Huntington Harbour (250 gallons/three day closure beginning May 4, 2013), Mariposa Beach in San Clemente (65 gallons/four day closure beginning June 25, 2013), Newport Bay beaches from Bayside Drive to Carnation Cove (500 gallons/two day closure beginning June 26, 2013), Poche Creek at Poche Beach 300 feet upcoast and downcoast (200 gallons/three day closure beginning July 4, 2013), Salt Creek in Dana Point 300 feet upcoast and downcoast (560 gallons/two day closure beginning July 23, 2013), and Cameo Shores Beach in Newport Beach (250 gallons/three day closure beginning September 20, 2013). 

For additional water quality information:
 County of Orange Environmental Health Division
www.ocbeachinfo.com



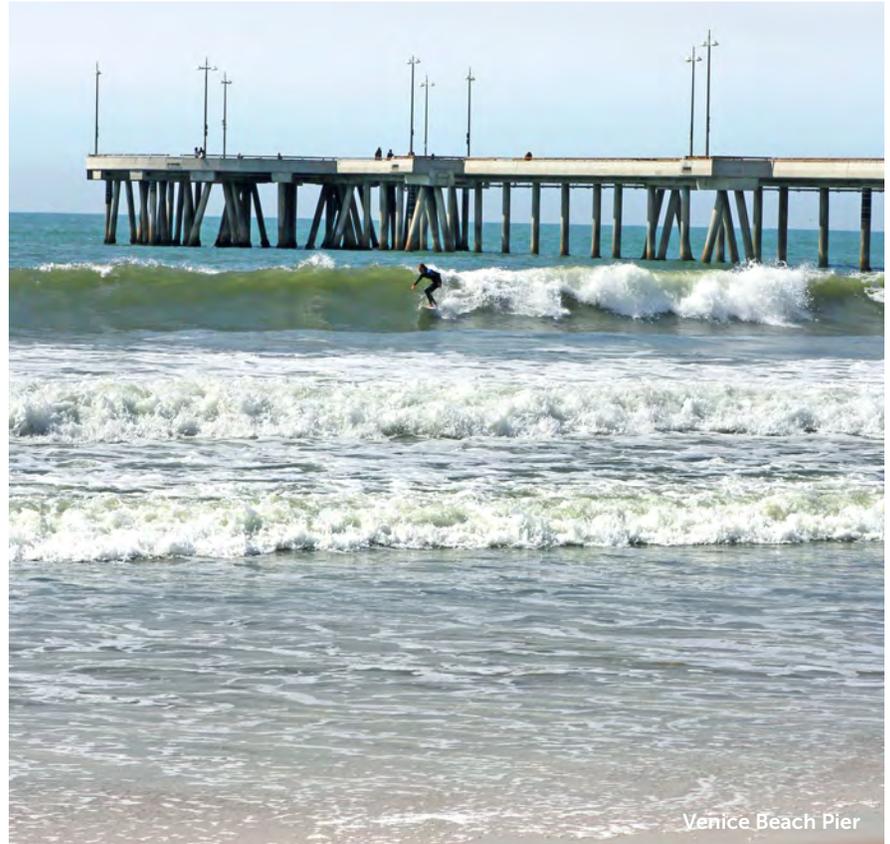
Los Angeles County

There are five agencies within the County of Los Angeles that contributed monitoring data to Heal the Bay's Beach Report Card:

- City of Los Angeles' Environmental Monitoring Division (EMD) at the Hyperion Sewage Treatment Plant provided daily or weekly beach data for 33 locations
- The Los Angeles County Department of Public Health Environmental Health program monitored 29 locations on a weekly basis
- Los Angeles County Sanitation District monitored eight locations weekly
- City of Long Beach, Environmental Health Division, monitored 15 (down from 25 historically) locations on a weekly basis.
- The City of Redondo Beach monitored seven locations in the South Bay

Los Angeles County outlet beaches (those adjacent to a storm drain or creek) are monitored directly at the outfall, where the discharge meets the ocean. Heal the Bay believes that monitoring closest to a potential pollution source or outlet (point zero) gives the most accurate picture of water quality at these types of beaches and is also the most protective of public health.

Los Angeles County's summer dry weather A and B grades were up six percent this past year to 90% and well above the county's five year average of 81% A or B grades. Every Santa Monica Bay ocean beach scored an A or B grade during summer dry weather except Santa Monica Municipal Pier (D grade). Overall, Santa Monica Bay summer dry water quality was excellent. A and B grades were up 5% from our last report with 97% of beaches from Leo Carrillo to Cabrillo oceanside earning A or B grades (up 11% from two years ago). Santa Monica Bay summer dry weather grades bested the five-year average by six percent (91% A or B grades) and the statewide average by two percent this year (95% A or B grades). This past year, winter dry weather water quality in Los Angeles County held steady at 86% A or B grades, 13% above the county's five-year



Venice Beach Pier

average (Figures 2-3).

This past year, wet weather grades in Los Angeles County slipped to 50% A or B grades (57% the previous year), though still bested the county five-year average by 13% (37% A or B grades). 34 of 84 (40%) sample sites received F grades this past year during wet weather compared to 18 of 84 (21%) in our last report. This past rainy season was one of the driest on record, though Los Angeles County still experienced a few intense rains this past winter which resulted in fair to poor water quality for half of the monitored beaches. Most notably, in Long Beach all 15 monitoring locations received F grades for wet weather (accounting for almost half of the county's F grades) compared to only three Long Beach wet weather F grades in our last report.

Though Los Angeles County grades were up across the board this past year, they still fell short (by as

FIGURE 2-3: LOS ANGELES COUNTY BEACHES

much as 20%) during wet weather compared to statewide averages for all three time periods. However, Los Angeles County’s move to sample at the mouth of flowing storm drains and creeks due to the Santa Monica Bay Beach Bacteria Total Maximum Daily Load (TMDL) has historically contributed to the county’s grades being below the state average. Still, it is important to note that the discrepancy among counties should not solely be attributed to the sampling location. For example, Mother’s Beach in Marina del Rey and Cabrillo (harborside at restrooms) had very poor water quality this past year even though storm drains are not known to be a major contributor to pollution at these locations.

Heal the Bay believes that sampling at the outfall (point zero) of drains and creeks gives a more accurate picture of water quality and is far more protective of human health. Statewide, most monitoring locations associated with storm drains or creeks are actually sampled a substantial distance from the outfall.

Malibu Pier and Redondo Pier may have missed this year’s Beach Bummer list (both on last year’s Beach Bummer list); however, it is concerning that both locations earned C grades (summer dry) during one of the driest years on record. Typically, during dry weather or periods of drought, beach water quality shows improvement as stormwater runoff volumes are reduced. While beach water quality at the Malibu Pier and Redondo Pier has been inconsistent over the past few years, this year’s mediocre dry weather grades are an indicator of pollution problems at these sites. Heal the Bay will continue to closely monitor water quality grades as well as work with local agencies to investigate potential pollution sources at these two piers.

Cabrillo Beach (harborside)

Heal the Bay remains concerned with the poor water quality still observed at Cabrillo Beach harborside, despite extensive water quality improvement projects including: replacement of beach sand, removal of a rock jetty, installation of water circulation pumps, and installation of a bird exclusion structure. After more than \$20 million invested in improving water quality at Cabrillo’s enclosed beach, it is still violating fecal bacteria TMDL limits. The Los Ange-

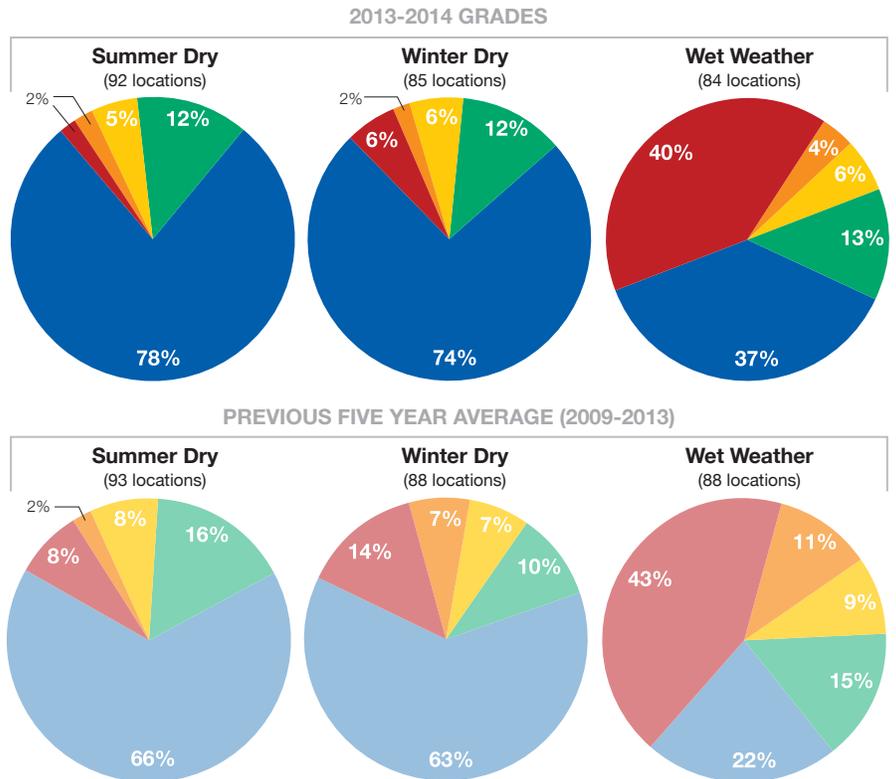
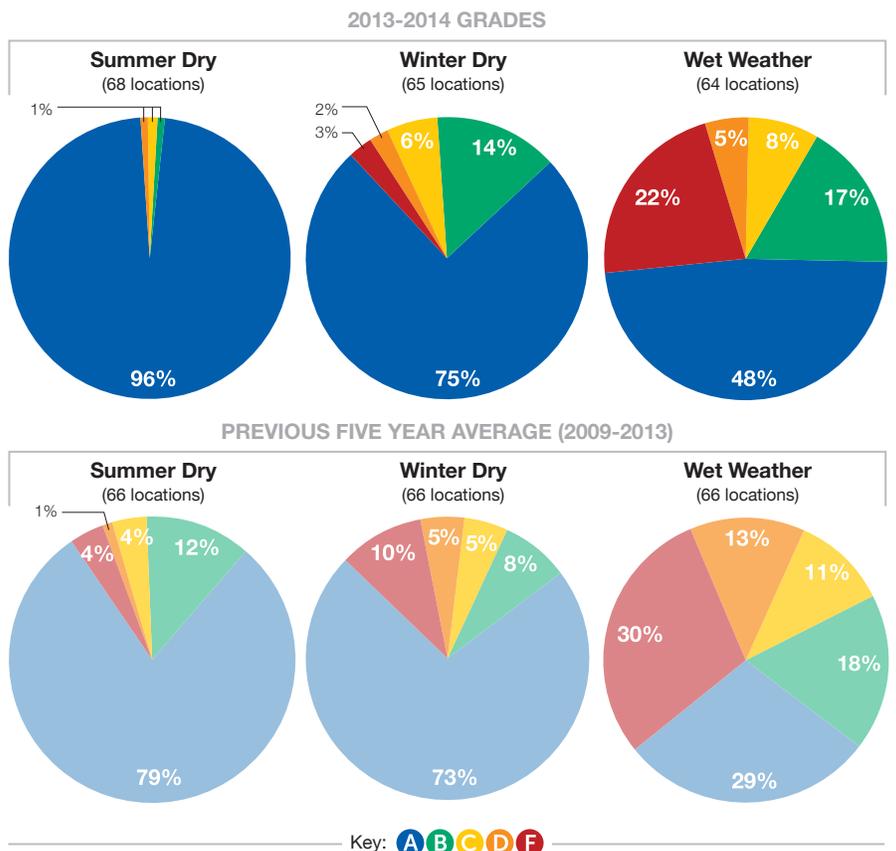


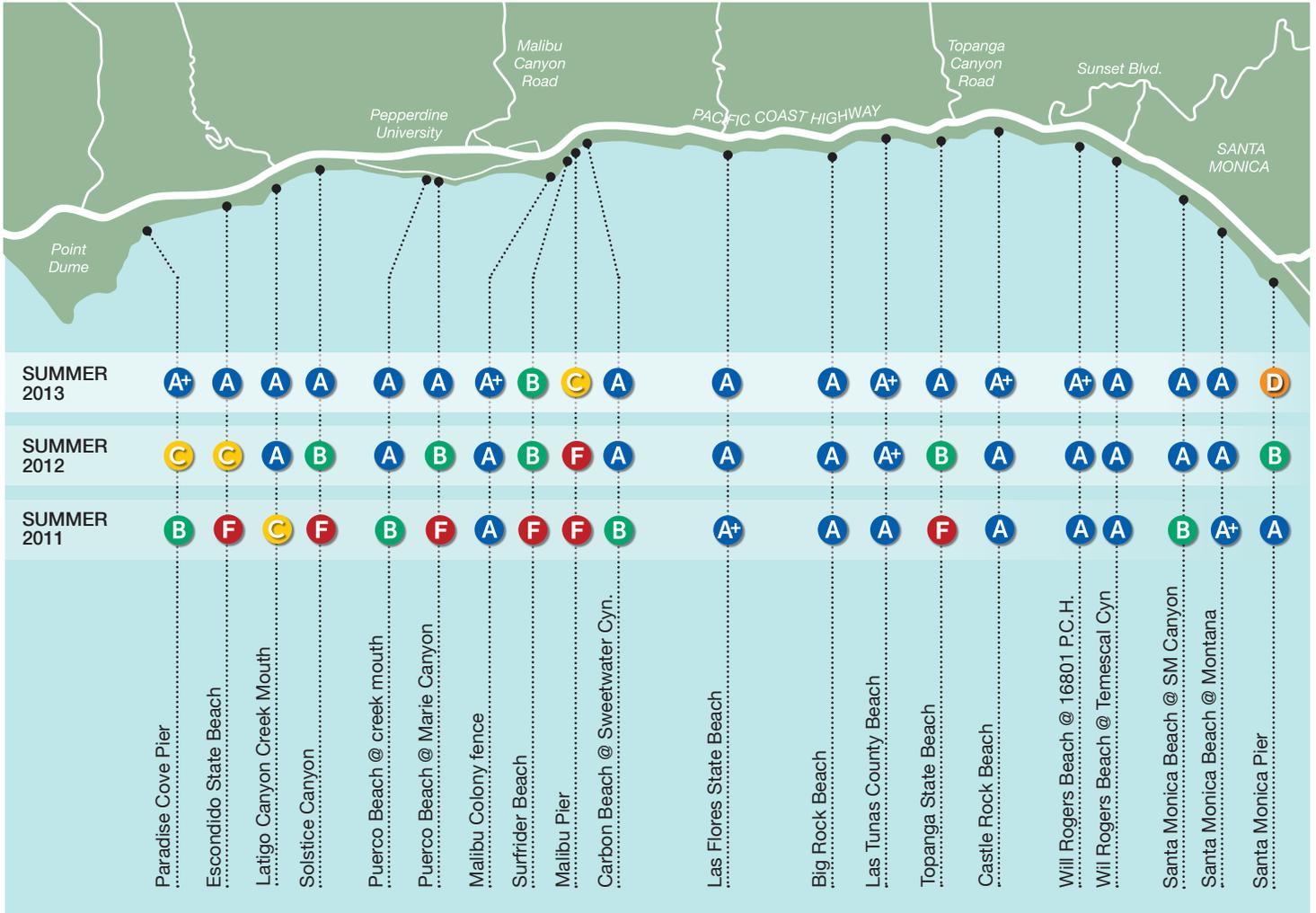
FIGURE 2-4: SANTA MONICA BAY BEACHES



Key: A B C D F

FIGURE 2-5: SUMMER GRADES, PAST THREE YEARS FROM MALIBU TO SANTA MONICA

Monitored locations during summers of 2011, 2012 and 2013



les Regional Board issued a Time Schedule Order (TSO) for inner Cabrillo Beach’s boat ramp location on February 6, 2014, for failure to meet existing bacteria TMDL standards (for details see Santa Monica Bay Bacteria TMDL Violations on page 53). The TSO requires the city to investigate and institute feasible structural and non-structural Best Management Practices (BMPs) by December 31, 2016.

The City of Los Angeles is currently working on the following projects:

- Investigation of storm drains located near the boat ramp for potential pollution sources and adverse impacts on water quality.
- Implementation of a Natural Source Exclusion (NSE) study.

NSE-based criteria can be applied to sites where source identification studies show no or minimal

human contamination. However, this approach should only be contemplated after all anthropogenic sources of bacteria have been controlled or eliminated.

Santa Monica Pier

The Santa Monica Pier has a long history of chronic beach pollution and is back on the Beach Bummer list at No. 7. Though a combination of CBI and Measure V funding (approved by Santa Monica voters in 2006) has led to a number of beach water quality improvement projects at the pier, grades have been poor again recently. Projects included the repair of a corroded and leaky storm drain, the redirection of stormwater runoff to the Santa Monica Urban Run-off Recycling Facility (SMURRF) and the installation of bird netting under the pier to prevent pigeons

and other birds from nesting and contributing fecal bacteria to the beach water. In the spring of 2010, beach water quality grades noticeably improved for approximately two years, before they started to fall during the winter of 2012-2013. Heal the Bay conducted a site visit shortly after the grades dropped and discovered large rips in the netting under the pier. It was evident that the birds were once again nesting under the pier, potentially triggering the poor water quality grades. After several unsuccessful attempts to patch the pier netting, the netting was completely replaced this past February. Heal the Bay will continue to closely monitor the Pier's water quality grades, and hopes to work directly with the City of Santa Monica if poor water quality continues to persist.

To further improve beach water quality throughout Santa Monica, the City of Santa Monica is pursuing the following projects:

- Marine Park Irrigation Retrofit project.** A pipeline will transport urban runoff being captured at Los Angeles' Penmar Park to Santa Monica's Marine Park for irrigation. This project is funded by Measure V and Prop 84.
- Los Amigos Park Retrofit project.** This project will divert runoff from an adjacent storm drain into a subterranean tank in Los Amigos Park for treatment. The treated runoff will be used for irrigation and toilet flushing. The project is funded by Measure V and the Metropolitan Water District.
- Pier Basin Infiltration.** This project will divert wet weather runoff to a subterranean tank which would overflow into an infiltration gallery. The retained water would be pumped to SMURRF for treatment. Project funding is currently being pursued.
- Ozone Park Retrofit project.** Urban storm drain runoff from Ozone Park would be diverted, treated and then used for irrigation. Project funding is currently being pursued.

Mother's Beach

Mother's Beach in Marina del Rey comes in at the No. 3 Beach Bummer spot in this year's report, making its first appearance on the List. This beach was the focus of a 2007 source identification study, where the bird population was deemed the largest FIB contributor. Mother's Beach is an enclosed beach, meaning it is protected from open ocean currents and tends to have poor beach water circulation. These findings resulted in the installation of a CBI-funded circulation device installed March 2008. However, the device has been offline most of this past year (May 2013 – February 2014) due to maintenance issues, and likely has contributed to the drop of water quality grades this year. Since the circulation device is now working, Heal the Bay hopes to see improved beach water quality at Mother's Beach this summer.

FIGURE 2-6: MOTHER'S BEACH, MARINA DEL REY – GRADES 2010-2014



FIGURE 2-7: AVALON BEACH, CATALINA ISLAND – SUMMER GRADES 2006-2013

	2006	2007	2008	2009	2010	2011	2012	2013
East of the Casino Arch at the steps	C	F	F	F	F	F	F	C
100 feet west of the Green Pleasure Pier	F	F	F	F	F	F	F	B
50 feet west of the Green Pleasure Pier	F	F	F	F	F	F	F	B
50 feet east of the Green Pleasure Pier	F	F	F	F	F	F	F	C
100 feet east of the Green Pleasure Pier	F	F	F	D	D	D	D	A



Avalon Beach, Catalina Island
 Insert: Drain construction on Crescent Avenue

Avalon Beach – update

Avalon Beach has a long history of chronically polluted beach water problems that can be traced back to 1999, when recreational beach water quality was first mandated by the state under AB 411. In 2000, Avalon Beach made its first appearance on the Beach Bummer list and has since made the list 12 of the last 14 years. Avalon Beach’s perpetually poor beach water quality made it the focus of several studies, including a Stanford University study where human-specific bacteria were identified in Avalon’s beach water. In addition there was a 2007 epidemiology study that correlated levels of beach water pollution to negative health risks including gastrointestinal illness (GI illness).

In early 2011, the Regional Board issued the City of Avalon a Notice of Violation (NOV) for numerous Sanitary Sewer Overflows (SSO) and consistent water quality violations. Then in February 2012, the Regional Board issued a Draft Cease and Desist Order (CDO) to the city for illegally discharging polluted water. Concurrently, the Board adopted a bacteria TMDL for Avalon Harbor.

Since the issuance of the Order, the City of Avalon has spent over \$5.7 million on sewer main improvements and implementation of a GIS-based inspection and tracking system as part of its sanitary sewer inspection and repair program. The City has also adopted the following regulations:

- **Private Sewer Laterals Ordinance.** Requires private laterals to be inspected and repaired routinely.
- **Water Quality Management Ordinance.** Prohibits restaurants and businesses along Avalon Bay from discharging and/or washing debris into the water. As required by the CDO, a fats, oils and grease (FOG) program was also implemented to prevent FOG from restaurants from entering and clogging the storm drain system.

Other water quality improvement efforts made by the City of Avalon (including some CDO requirements) include:

- The development of a beach water pollution and prevention education program
- Implementation of bird control measures at and around the beach

The City of Avalon recently hosted a Water Quality Symposium targeted towards agencies including the State and Regional Boards, universities, environmental organizations, and other interested parties. Participants were briefed on Avalon Beach’s water quality history, relevant water quality/health related studies, and Avalon’s completed and future water quality improvement projects.

Heal the Bay is pleased to announce that Avalon Beach is not on the Beach Bummer list this year (for only the second time in the past 14 years). Avalon Beach’s summer dry weather grades are typically poor, and though not perfect this past year, beach water quality grades were much improved (1 A, 2 Bs and 2 Cs). We are hopeful that this trend of beach water quality improvement will continue this coming summer at Avalon Beach.

For details on the recently published epidemiology study conducted at Avalon Beach see Avalon Beach’s Epidemiology Study under *Beach News* on page 61.

Long Beach

During dry weather, the City of Long Beach continues to show improved beach water quality. This past year, summer dry weather A and B grades were up 10% from last year at 87%, besting the five-year average by 16% (71% A or B grades). Winter dry weather grades continue to be much improved as well with

100% of locations earning A or B grades – 45% higher than Long Beach’s five-year average. See Figure 2-9. However, wet weather grades in Long Beach took a dive again this past year, and all locations received F grades. Unfortunately, Long Beach’s wet weather five-year average continues to be the worst in the state, with only 7% A or B grades.

The City of Long Beach has made significant efforts to identify pollution sources and improve beach water quality, despite influence from the Los Angeles River’s 100-plus square mile drainage area (the predominant source of fecal bacteria to Long Beach waters). In 2013, the City of Long Beach was awarded \$4.9 million in CBI grant funds to further improve recreational water quality through projects including: the installation of low flow diversions and vortex separation devices intended to keep trash and other contaminants from entering Long Beach waters. Project design bids are scheduled to be evaluated this summer.

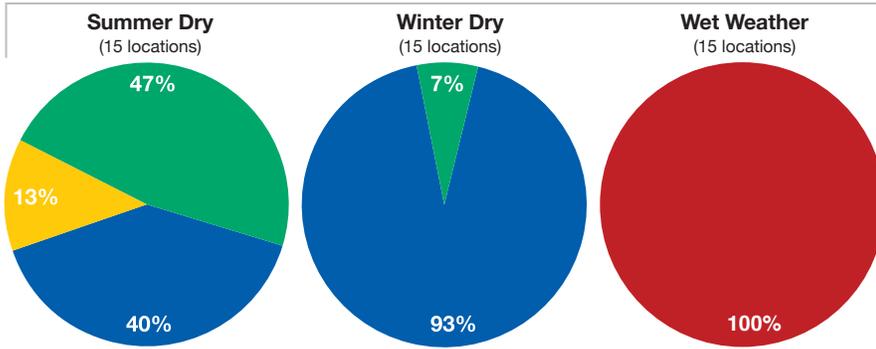
Since 2010, approximately \$8.5 million in structural and capital improvement projects have been made to the historically polluted Colorado Lagoon. These improvements include stormwater diversions, lagoon dredging, and the installation of trash traps and bio-swales around the lagoon. As a result of their efforts, the Colorado Lagoon dropped off of the Beach Bummer list in 2012. This year, both Colorado

FIGURE 2-8: COLORADO LAGOON, LONG BEACH – GRADES 2010-2014



FIGURE 2-9: LONG BEACH CITY BEACHES

2013-2014 GRADES



PREVIOUS FIVE YEAR AVERAGE (2009-2013)

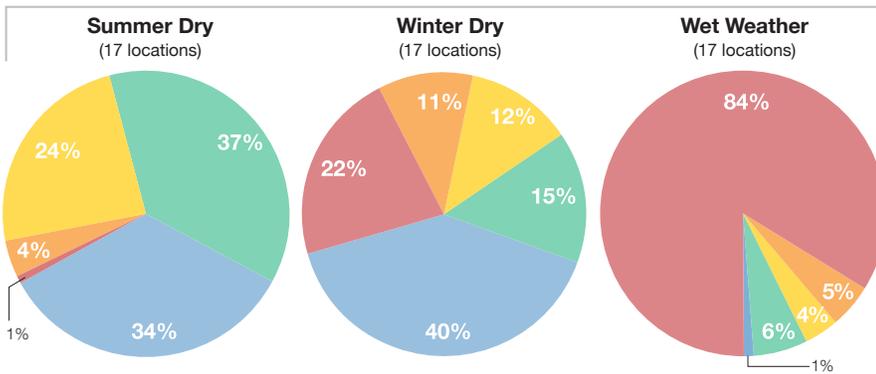
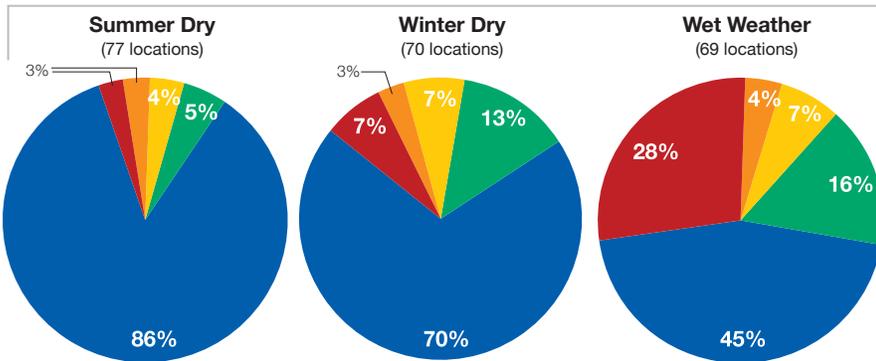
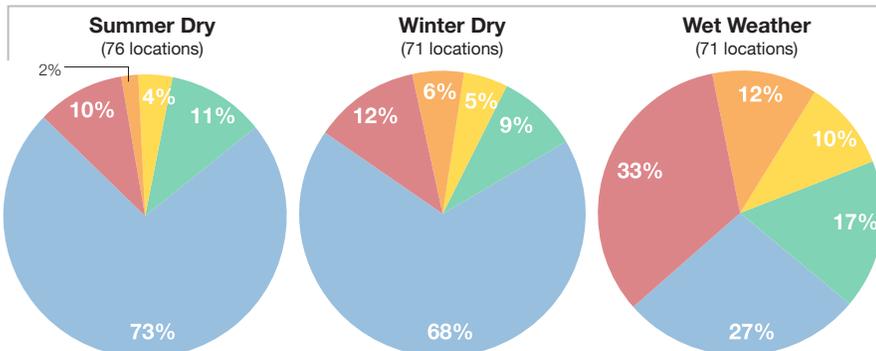


FIGURE 2-10: LOS ANGELES COUNTY (WITHOUT LONG BEACH)

2013-2014 GRADES



PREVIOUS FIVE YEAR AVERAGE (2009-2013)



Key: **A B C D F**

Lagoon monitoring locations received A grades during summer dry and winter dry weather.

Heal the Bay recognizes the city's utilization of regional partnerships, grant funding, technology and infrastructure improvements to improve beach water quality, and looks forward to the implementation of collaborative wet weather water quality improvement projects.

A complete list of grades for Los Angeles County's beach monitoring locations can be found in Appendix C1 on page 85.

Sewage Spill Summary

There were only two reported sewage spills in Los Angeles County this past year. The first spill on June 18, 2013 released approximately 100-200 gallons of raw sewage (the result of a private sewage line break) which closed a 100-yard stretch of beach for four days near Big Rock Drive in Malibu.

The second spill (due to root blockage) occurred on October 5, 2013 and released an estimated 2,000 gallons near Palos Verdes Estates. Unfortunately, the Los Angeles County Department of Public Health (DPH) closed Bluff Cove Beach instead of Malaga Cove Beach which is directly downstream of the spill location.

On August 25, 2014, a summer Sunday with temperatures above 80 degrees, an estimated 996 gallons of sewage entered the beach water just north of Will Rogers Beach. However, the Los Angeles County DPH failed to close the beach and potentially jeopardized the public health of numerous beach goers. Heal the Bay subsequently approached the Los Angeles County Department of Public Health in regards to this incident and other sewage spill notification concerns. The County is currently working on revisions to their Sewage Spill and Beach Closure Policy so they are more consistent and protective of public health. We urge the county to quickly finalize these critical protocols. 

For additional water quality information:
 County of Los Angeles Department of Public Health
 Environmental Health
<http://publichealth.lacounty.gov/eh>

City of Long Beach
www.longbeach.gov/health/eh/water/water_samples.asp



Ventura County

Ventura County Grades

		Summer Dry*		Winter Dry		Wet Weather	
		#	%	#	%	#	%
2013-2014	A	40	100%	11	92%	10	83%
	B	0	0%	1	8%	2	17%
	C	0	0%	0	0%	0	0%
	D	0	0%	0	0%	0	0%
	F	0	0%	0	0%	0	0%
Total #:		40		12		12	
5 Yr. Average	A		100%		97%		56%
	B		0%		1%		28%
	C		0%		1%		5%
	D		0%		0%		8%
	F		0%		0%		4%

= Number of Monitoring Locations
 *State AB411 monitoring April thru October
 Percentages may not add up to 100 due to rounding.



Rincon Point

For additional water quality information:

Ventura County's Environmental Health Division
www.ventura.org/rma/envhealth

The County of Ventura Environmental Health Division monitored 40 locations weekly from April through October 2013 (only 12 locations were monitored year-round, eight less than last year, due to county beach program funding cuts), year-round monitored beaches range from Rincon (south of Rincon Creek near the Santa Barbara County line) to the southern end of Ormond Beach. Samples were generally not collected at point zero (at the drainage outlet) but at a distance from the potential pollution source. Beach water quality at Ventura County beaches was excellent this past year across all three time periods (for the few beaches that were monitored year round), with 100% of the locations receiving A or B grades.

Ventura County's grades during winter dry and wet weather bested the county's five-year averages, and the county's summer dry grades tied a perfect five-year average of 100% A grades. Ventura County's only wet weather F grade in our last report (Hobie Beach) scored an A grade this past year during wet weather.

A complete list of grades for Ventura County's beach monitoring locations can be found in Appendix C1 on page 88.

Sewage Spill Summary

There were no reported sewage spills in Ventura County that led to beach closures this past year. 



Santa Barbara County

Santa Barbara County Grades

		Summer Dry*		Winter Dry		Wet Weather	
		#	%	#	%	#	%
2013-2014	A	16	100%	11	69%	9	56%
	B	0	0%	4	25%	4	25%
	C	0	0%	1	6%	1	6%
	D	0	0%	0	0%	0	0%
	F	0	0%	0	0%	2	13%
Total #:		16		16		16	
5 Yr. Average	A		80%		83%		25%
	B		17%		8%		23%
	C		2%		3%		27%
	D		0%		4%		11%
	F		1%		3%		15%

= Number of Monitoring Locations
 *State AB411 monitoring April thru October
 Percentages may not add up to 100 due to rounding.



Arroyo Burro Beach

For additional water quality information:

Santa Barbara County's Environmental Health Agency
www.sbcphd.org

The County of Santa Barbara Environmental Health Agency monitored 16 locations on a weekly basis year-round, from as far upcoast as Guadalupe Dunes to the downcoast location at Carpinteria State Beach. Samples were generally not collected at point zero (at the drainage outlet) but at a distance from the potential pollution source.

Summer dry weather water quality in Santa Barbara was excellent with all 16 monitoring locations receiving A grades, besting the five-year county average for A grades by 20%. Winter dry weather grades were also excellent with 94% A or B grades, three percent above the five-year county average. Arroyo Burro Beach was the only beach to receive a grade below an A or B during dry weather, earning a C grade for the winter dry time period.

Santa Barbara's wet weather A and B grades slipped 13% this past year to 81%, though still bested the county's five-year average by 33% and state average by 12% this year. Three locations scored lower than a B grade during the wet weather time period: Hope Ranch Beach (F grade), Arroyo Burro (C grade) and East Beach at Mission Creek (F grade).

Improved beach water quality throughout Santa Barbara has followed from numerous water quality improvement and research projects. Recent projects include the Laguna Channel Watershed Study, Water Quality Feasibility Analysis, and Source Tracking Program which have led to the identification and repair of leaking sewer lines in the Arroyo Burro and Mission Creek watersheds, as well as lagoon habitat restoration at Arroyo Burro Beach. Restoration efforts are in development for Mission Lagoon. In addition, record-low rainfall in Southern California also likely played a part in the county's near-perfect grades. A complete list of grades for the county can be found in Appendix C1 on page 89.

Sewage Spill Summary

There were no reported sewage spills in Santa Barbara County that led to beach closures this past year. 



San Luis Obispo County

San Luis Obispo County Grades

		Summer Dry*		Winter Dry		Wet Weather	
		#	%	#	%	#	%
2013-2014	A	17	89%	17	94%	16	84%
	B	0	0%	1	6%	2	11%
	C	2	11%	0	0%	1	5%
	D	0	0%	0	0%	0	0%
	F	0	0%	0	0%	0	0%
Total #:		19		18		19	
5 Yr. Average	A		92%		89%		67%
	B		5%		6%		15%
	C		1%		3%		8%
	D		1%		1%		5%
	F		1%		1%		4%

= Number of Monitoring Locations
 *State AB411 monitoring April thru October
 Percentages may not add up to 100 due to rounding.



For additional water quality information:

San Luis Obispo County
 Environmental Health Department
www.slocounty.ca.gov/health/publichealth/ehs/beach.htm

The County of San Luis Obispo Environmental Health Services monitored 19 locations this year from Pico Avenue in San Simeon downcoast to Pismo State Beach (at the end of Strand Way). Samples were generally not collected at point zero (at the drainage outlet) but at a distance from potential pollution sources.

San Luis Obispo's summer dry weather grades were very good (89% A and B grades) but slightly lower than last year (95% A or B grades, a one beach difference) and below the five-year county average (97% A or B grades) and state average (95% A or B grades) this year. Olde Port/Harford Beach (C grade) and Pismo Beach Pier (C grade) were the two locations to earn below an A grade during summer dry weather. Winter dry grades were excellent this past year with 100% A or B grades and bested the five-year county average by five percent and the state average by eight percent.

The number of A and B grades during wet weather was up 11% from our last report to 95% this past year, but bested the county's five-year average (82% A or B grades) by 13% and the state average this year by 26% (69% A or B grades). Pismo State Beach, projection of Pier Avenue (C grade) earned the county's lowest wet weather grade this past year.

A complete list of grades for San Luis Obispo County's beach monitoring locations can be found in Appendix C1 on page 89.

Sewage Spill Summary

There were no reported sewage spills in San Luis Obispo County that led to beach closures this past year. 



Monterey County

Monterey County Grades

		Summer Dry*		Winter Dry		Wet Weather	
		#	%	#	%	#	%
2013-2014	A	5	63%				
	B	1	13%				
	C	1	13%				
	D	1	13%				
	F	0	0%				
Total #:		8					

5 Yr. Average	A	73%		
	B	10%		
	C	13%		
	D	5%		
	F	0%		

= Number of Monitoring Locations
 *State AB411 monitoring April thru October
 Percentages may not add up to 100 due to rounding.



Stillwater Cove

The County of Monterey Environmental Health Bureau monitored eight locations on a weekly basis from April through October 2013, from as far upcoast as the Monterey Beach Hotel at Roberts Lake in Seaside to a downcoast location of Carmel City Beach. Samples were generally not collected at point zero (at the drainage outlet) but at a distance from the potential pollution source.

Monterey County's summer dry weather grades were on par with last year with 75% A or B grades, and eight percent below the five-year county average (83% A or B grades). Monterey beaches were not monitored frequently enough throughout the winter to receive grades in this report for the winter dry and wet weather time periods.

Lover's Point Park (C grade) and Stillwater Cove (D grade) continue to earn the county's poorest water quality grades. Stillwater Cove's water quality dipped to such a degree this past year that it earned the No. 5 spot on this year's Beach Bummer list, its second appearance since 2004. Urban runoff to the beach area from an adjacent golf course may be contributing to Stillwater Cove's poor water quality grades, potentially making this beach an ideal candidate for a stormwater diversion and/or mitigation project.

Lovers Point Park Beach has been the focus of water quality related studies for nearly a decade. During the summer of 2013, Stanford University conducted a microbial source tracking (MST) study at Lovers Point Beach, where preliminary results revealed the presence of human markers in approximately 20% of the beach water samples. Results conclude that the storm drain system in Lovers Point is contaminated with human sewage. As a result of these findings, on April 24, 2014 the City of Pacific Grove submitted a detailed CBI grant application requesting to increase the grant amount from \$2,500,000 to roughly \$3,290,000, in order to implement extensive repairs to damaged storm drain and sewer pipes. The State Board plans to issue the City a preliminary funding commitment for the project soon.

A complete list of grades for Monterey County's beach monitoring locations can be found in Appendix C1 on page 90.

Sewage Spill Summary

There was one sewage spill of approximately 900 gallons that resulted in a beach closure at Lover's Point in Pacific Grove on February 10, 2014. Subsequent water quality samples met state standards 10 days later on February 20, 2014. 



Santa Cruz County

Santa Cruz County Grades

		Summer Dry*		Winter Dry		Wet Weather	
		#	%	#	%	#	%
2013-2014	A	11	85%	11	92%	11	85%
	B	0	0%	1	8%	0	0%
	C	1	8%	0	0%	1	8%
	D	0	0%	0	0%	0	0%
	F	1	8%	0	0%	1	8%
Total #:		13		12		13	
5 Yr. Average	A		70%		78%		17%
	B		6%		12%		32%
	C		6%		3%		28%
	D		1%		3%		12%
	F		16%		3%		12%

= Number of Monitoring Locations
 *State AB411 monitoring April thru October
 Percentages may not add up to 100 due to rounding.



For additional water quality information:

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

The County of Santa Cruz Environmental Health Services monitored 13 shoreline locations frequently enough (at least weekly) to be included in this report, spanning the area from Natural Bridges State Beach downcoast to Rio del Mar Beach.

Santa Cruz County beaches earned good summer dry weather grades this past year, with 85% A or B grades, 9% above the five-year county average. Fair to poor summer dry weather grades continue to persist at Cowell Beach wharf (F grade) and Capitola Beach west of the jetty (C grade): these were the only two locations in the county to earn lower than an A grade for summer dry weather.

Winter dry weather grades were excellent with 100% of weekly monitored beaches earning A grades, which is 10% above the five-year county average. Wet weather grades were also good with 85% A grades (37% above the five-year county average). Only a single location scored below a C grade during wet weather: Capitola Beach west of the jetty (F grade). This beach is also the No. 9 Beach Bummer in this year's report. Capitola Beach has a history of chronically polluted beach water and this year's inclusion marks its third appearance on the Beach Bummer List in the past six years.

Cowell Beach

This is Cowell Beach's fifth consecutive year on the Beach Bummer list, and this year it earns the title of California's No. 1 most polluted beach. Cowell Beach's chronic and persistent poor water quality has been the focus of several research projects, including a Stanford University-led Source Identification Protocol Project (SIPP) that included source tracking efforts. The study revealed persistent low levels of human-associated fecal bacteria which led researchers to a buried pipe in the sand. Shortly after this discovery, the City of Santa Cruz traced the pipe to a toilet in a nearby apartment building, which was flushing directly into the stormdrain. The City quickly addressed the problem

and completed all necessary repairs by March 2013.

The State Board recently issued a draft preliminary CBI funding commitment for the City of Santa Cruz to inspect, isolate, and clean the nearby storm drain system infrastructure that drains Neary Lagoon, determined to be a significant pollution source and likely contributing to both Cowell and Main Beach’s water quality. The upgraded stormdrain pipes should eliminate any additional illicit sewage discharges.

The State Board also recently issued a second draft preliminary CBI funding commitment to the Santa Cruz County Sanitation District in order to repair approximately 1,530 feet of corroded sewage pipe less than a quarter of a mile from Cowell Beach.

A complete list of grades for Santa Cruz County’s beach monitoring locations can be found in Appendix C1 on page 90.

Sewage Spill Summary

There were no reported sewage spills in Santa Cruz County that led to beach closures this past year. 

FIGURE 2-11: COWELL BEACH GRADES 2009-2014





San Mateo County

San Mateo County Grades

		Summer Dry*		Winter Dry		Wet Weather	
		#	%	#	%	#	%
2013-2014	A	19	83%	17	77%	12	55%
	B	0	0%	3	14%	2	9%
	C	2	9%	0	0%	0	0%
	D	0	0%	0	0%	5	23%
	F	2	9%	2	9%	3	14%
Total #:		23		22		22	
5 Yr. Average	A		83%		81%		38%
	B		8%		8%		15%
	C		3%		3%		10%
	D		3%		0%		13%
	F		3%		8%		23%

= Number of Monitoring Locations
 *State AB411 monitoring April thru October
 Percentages may not add up to 100 due to rounding.



The County of San Mateo Environmental Health Department monitored 23 ocean and bayside locations on a weekly basis during the summer months, from as far upcoast as Sharp Park Beach to a downcoast location at Gazos Creek. Twenty-two of these locations were monitored year-round and earned grades for all three time periods in this report. (See Figure 2-13 on page 35 for combined grades of the Bay Area).

Summer dry weather grades in San Mateo County were good this past year earning 83% A grades, on par with the county's five-year average. Winter dry weather grades were very good with 91% A or B grades, edging out the five-year county average (89% A or B grades). San Mateo's wet weather A or B grades were up 20% from last year's report to 64%, and 10% above the county's five-year average (54% A or B grades).

San Mateo County was host to two Beach Bummers slots this year. Aquatic Park and Lakeshore Park in Marina Lagoon climbed four notches to the No. 2 Beach Bummer spot, where poor water quality results from an overall lack of circulation in the lagoon. Pillar Point Harbor at the end of Westpoint Avenue took the No. 8 spot on the list.

In January 2014, the final report for Pillar Point Harbor's bacterial source identification study was released. The San Mateo County Resource Conservation District implemented the CBI grant funded project in order to identify the primary sources associated with Pillar Point Harbor's chronically poor beach water quality. The project failed to find a definitive pollution source, though it determined that high FIB levels were likely flowing into the harbor from storm drains and creeks. Next steps include implementing BMPs designed to mitigate and/or filter stormwater flows, and fix leaking sewer systems.

A complete list of grades for San Mateo County's beach monitoring locations can be found in Appendix C1 on page 90.

Sewage Spill Summary

There were no reported sewage spills in San Mateo County that led to beach closures this past year.

FIGURE 2-12: COMPARISON OF OCEAN AND BAY SIDE WATER QUALITY

*Bay Area includes San Francisco, Contra Costa, Alameda, Marin and San Mateo counties

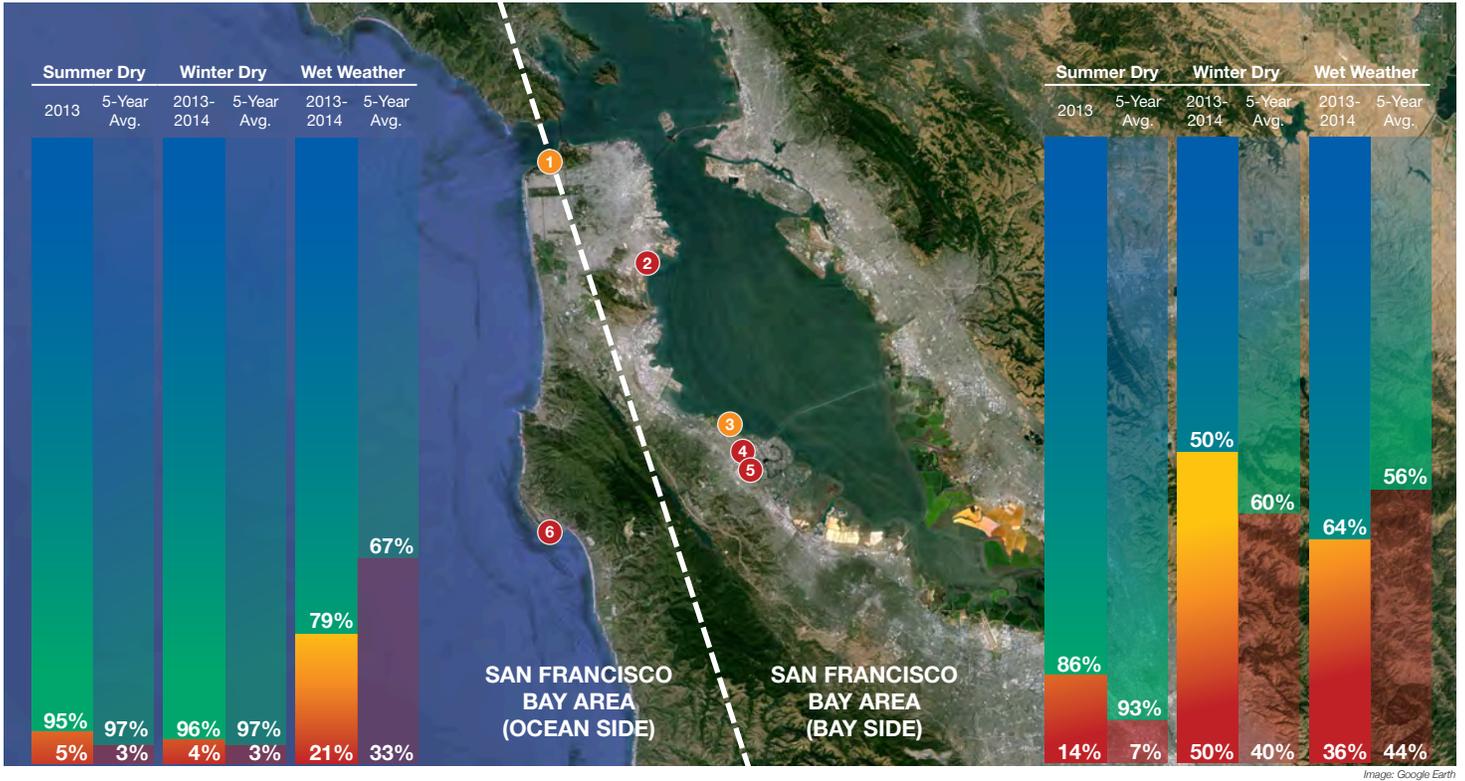


Image: Google Earth

■ A+B GRADES
■ C+D+F GRADES

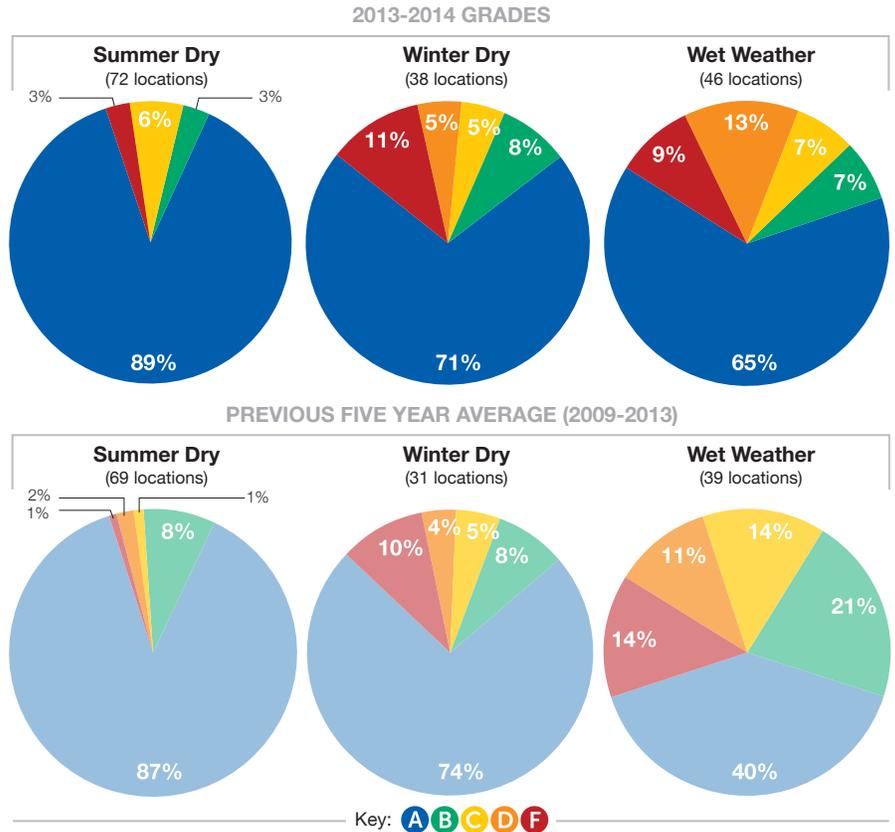
BEACH BUMMERS

- 1 Baker Beach @ Lobos Creek
San Francisco County
- 2 Windsurfer Circle
San Francisco County
- 3 Kiteboard Beach
San Mateo County
- 4 Lakeshore Park
San Mateo County
- 5 Aquatic Park
San Mateo County
- 6 Pillar Point Harbor
San Mateo County

Note: Red denotes California Top Ten Beach Bummers.
Orange denotes county bummers.

FIGURE 2-13: SAN FRANCISCO BAY AREA* BEACHES

*Includes San Francisco, Contra Costa, Alameda, Marin and San Mateo counties





San Francisco County

San Francisco County Grades

		Summer Dry*		Winter Dry		Wet Weather	
		#	%	#	%	#	%
2013-2014	A	11	79%	10	71%	8	57%
	B	1	7%	0	0%	1	7%
	C	2	14%	2	14%	3	21%
	D	0	0%	1	7%	1	7%
	F	0	0%	1	7%	1	7%
Total #:		14		14		14	
5 Yr. Average	A		81%		67%		39%
	B		9%		7%		23%
	C		3%		6%		24%
	D		4%		9%		11%
	F		3%		11%		13%

= Number of Monitoring Locations
 *State AB411 monitoring April thru October
 Percentages may not add up to 100 due to rounding.



Baker Beach

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

The County of San Francisco, in partnership with the San Francisco Public Utilities Commission, maintained its weekly monitoring program for ocean and bay shoreline locations this past year. Fourteen locations were monitored on a weekly basis year-round. San Francisco County's summer dry weather grades were good and on par with last year with 86% A or B grades, though slightly below the five-year county average (90% A or B grades). For the second year in a row, the two locations that scored below a B grade during summer dry weather were Baker Beach Lobos Creek (C grade) and Candlestick Point Windsurfer Circle (C grade) -- the latter earning a spot on this year's California Beach Bummer list at No. 10. The location's adjacent storm drain serves the Monster Stadium area and may be contributing to the beach's poor water quality, though no definitive sources have been identified at this location.

Winter dry weather water quality in the county was fair and similar to last year's grades with 71% A grades. Fair to poor winter dry weather grades in San Francisco County were seen at: Aquatic Park Beach 211 Station (C grade), Crissy Field Beach East (D grade), Baker Beach at Lobos Creek (C grade), and Candlestick Point Windsurfer Circle (F grade). Wet weather grades in San Francisco were up 21% from the year to 64% A or B grades, and slightly above the county's five-year average (61% A or B grades).

A complete list of grades for San Francisco County's beach monitoring locations can be found in Appendix C1 on page 91.

Background Information from the San Francisco Public Utilities Commission

The City and County of San Francisco have a unique stormwater infrastructure that occurs in no other California coastal county – a combined sewer and storm drain system (CSS). This system provides graduated levels of treatment to San Francisco's

stormwater flows. All street runoff during dry weather receives full secondary treatment. All storm flow receives at least the wet weather equivalent of primary treatment and most flow receives full secondary treatment before being discharged through a designated outfall.

During heavy rain events, the CSS can occasionally discharge combined treated urban runoff and sewage wastewater, typically comprised of 94% treated stormwater and 6% primary treated sanitary flow. In an effort to reduce the number of combined sewer discharges (CSDs), San Francisco built a system of underground storage, transport and treatment boxes to handle major rain events. CSDs are legally, quantitatively and qualitatively distinct from raw sewage spills that occur in communities with separate sewers.

Because of the CSS, San Francisco’s ocean shoreline has no flowing storm drains in dry weather throughout the year, and therefore is not subject to AB 411 monitoring requirements. However, the city does have a year-round program that monitors beaches each week. Although most of San Francisco is served by the CSS, there are some areas of federally owned land and areas operated by the Port of San Francisco that have separate storm drains.

Combined Sewer Discharge Summary

This past year, San Francisco had three CSDs all occurring during heavy rainfall: November 20, 2013 at Ocean Beach (including Fort Funston); February 26, 2014 at Fort Funston; and February 9, 2014 at Ocean Beach (including Fort Funston) and Baker Beach. Collectively, these events led to a total of nine beach closures. 

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

FIGURE 2-14: SAN FRANCISCO’S CANDLESTICK POINT GRADES 2013-2014



Image: Google Earth



East Bay: Contra Costa & Alameda Counties

East Bay: Contra Costa & Alameda County Grades

		Summer Dry*		Winter Dry		Wet Weather	
		#	%	#	%	#	%
2013-2014	A	10	100%	0	0%	10	100%
	B	0	0%	0	0%	0	0%
	C	0	0%	0	0%	0	0%
	D	0	0%	1	50%	0	0%
	F	0	0%	1	50%	0	0%
Total #:		10		2		10	
5 Yr. Average	A		80%		75%		45%
	B		20%		8%		28%
	C		0%		8%		19%
	D		0%		0%		6%
	F		0%		8%		2%

= Number of Monitoring Locations
 *State AB411 monitoring April thru October
 Percentages may not add up to 100 due to rounding.



Crown Beach

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

The East Bay Regional Park District consistently monitored 10 shoreline locations again this year, including two in Contra Costa County and eight in Alameda County. Samples were collected weekly during the summer dry weather time period and about twice a month throughout the winter – not frequently enough for most locations to receive a winter dry weather grade in this report.

This past year, East Bay beaches earned excellent summer dry and wet weather grades with all 10 locations receiving A grades. Only two monitoring locations, both at Crown Beach were sampled frequently enough this past winter (due to resamples) to earn grades for the winter dry time period: Crab Cove (F grade) and Bird Sanctuary (D grade).

A complete list of grades for Contra Costa and Alameda Counties beach monitoring locations can be found in Appendix C1 on page 91-92.

Sewage Spill Summary

On March 29, 2014, a pump station failure resulted in approximately 3,300 gallons of untreated sewage to discharge at Keller Beach, which led to a beach closure for five days.



Marin County

Marin County Grades

		Summer Dry*		Winter Dry		Wet Weather	
		#	%	#	%	#	%
2013-2014	A	24	96%				
	B	1	4%				
	C	0	0%				
	D	0	0%				
	F	0	0%				
Total #:		25					
5 Yr. Average	A		98%				
	B		2%				
	C		0%				
	D		0%				
	F		0%				

= Number of Monitoring Locations
 *State AB411 monitoring April thru October



Stinson Beach

For additional water quality information:

Marin County's Department of Environmental Health
www.marincounty.org/ehs

Marin County's water quality monitoring program gathered data during the summer from 25 bayside and oceanside monitoring locations. Ocean locations included Dillon Beach, Bolinas Beach (Wharf Road), Stinson Beach, Muir Beach, Rodeo Beach and Baker Beach. These locations were monitored on a weekly basis from April through October 2013. There was little or no monitoring during the winter months. Water quality grades were excellent in Marin County this year with all A grades except for McNears Beach, which earned a B grade.

(See Figure 2-13 on page 35 for combined grades of the Bay Area).

A complete list of grades for Marin County's beach monitoring locations can be found in Appendix C1 on page 92

Sewage Spill Summary

There were no reported sewage spills in Marin County that led to beach closures this past year. 



Sonoma County

Sonoma County Grades

		Summer Dry*		Winter Dry		Wet Weather	
		#	%	#	%	#	%
2013-2014	A	7	100%				
	B	0	0%				
	C	0	0%				
	D	0	0%				
	F	0	0%				
Total #:		7					

5 Yr. Average	A	97%				
	B	0%				
	C	3%				
	D	0%				
	F	0%				

= Number of Monitoring Locations
 *State AB411 monitoring April thru October

Sonoma County once again earned excellent summer dry weather water quality grades this year with all A grades, and bested the five-year county average (97% A or B grades). Monitoring locations were not sampled frequently enough during winter dry or wet weather to earn grades for those time periods.

A complete list of grades for Sonoma County's beach monitoring locations can be found in Appendix C1 on page 92.

Sewage Spill Summary

There were no reported sewage spills in Sonoma County that led to beach closures this past year. 

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



Mendocino County

Mendocino County Grades

		Summer Dry*		Winter Dry		Wet Weather	
		#	%	#	%	#	%
2013-2014	A	6	100%				
	B	0	0%				
	C	0	0%				
	D	0	0%				
	F	0	0%				
Total #:		6					

5 Yr. Average	A	95%				
	B	0%				
	C	0%				
	D	0%				
	F	5%				

= Number of Monitoring Locations
 *State AB411 monitoring April thru October

All six consistently monitored beaches in Mendocino County received A grades during summer dry weather this past year. Monitoring locations were not sampled frequently enough during winter dry or wet weather to earn grades for those time periods.

A complete list of grades for Mendocino County's beach monitoring locations can be found in Appendix C1 on page 93.

Sewage Spill Summary

There were no reported sewage spills in Mendocino County that led to beach closures this past year. 

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



Humboldt County

Humboldt County Grades

		Summer Dry*		Winter Dry		Wet Weather	
		#	%	#	%	#	%
2013-2014	A	3	60%				
	B	1	20%				
	C	0	0%				
	D	1	20%				
	F	0	0%				
Total #:		5					

5 Yr. Average	A	85%				
	B	12%				
	C	4%				
	D	0%				
	F	0%				

= Number of Monitoring Locations
 *State AB411 monitoring April thru October
 Percentages may not add up to 100 due to rounding.

Humboldt County earned good water quality grades this past year, though slipped from last year's report to 80% A or B grades. Monitoring locations were not sampled frequently enough during winter dry or wet weather to receive grades for those time periods. The county's only poor water quality grade was at Clam Beach County Park near Strawberry Creek (D grade), which earned the No. 6 Beach Bummer spot in this year's report. This is Clam Beach's second appearance on the Beach Bummer list. Potential bacteria sources include onsite sewage treatment systems, wildlife, domestic animals, and vegetation.

A complete list of grades for Humboldt County's beach monitoring locations can be found in Appendix C1 on page 93.

Sewage Spill Summary

There were no reported sewage spills in Humboldt County that led to beach closures this past year. 

For additional water quality information:
 Humboldt County's Department of Health & Human Services
www.co.humboldt.ca.us/health/envhealth/beachinfo



Del Norte County

Del Norte County Grades

		Summer Dry*		Winter Dry		Wet Weather	
		#	%	#	%	#	%
2013-2014	A	1	100%	1	100%	1	100%
	B	0	0%	0	0%	0	0%
	C	0	0%	0	0%	0	0%
	D	0	0%	0	0%	0	0%
	F	0	0%	0	0%	0	0%
Total #:		1		1		1	

5 Yr. Average	A	-		-		-	
	B	-		-		-	
	C	-		-		-	
	D	-		-		-	
	F	-		-		-	

NO DATA AVAILABLE

= Number of Monitoring Locations
 *State AB411 monitoring April thru October

A single monitoring location (Battery Point Lighthouse) in Del Norte County earned A grades for all three time periods this past year. No other locations in Del Norte County were sampled frequently enough (at least weekly) to receive grades in this report. 

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



2013-2014 Beach Report Card: Oregon

OREGON (STATE) GRADES

		Summer Dry		Wet Weather		Summer Dry		Wet	
		#	%	#	%	%	%		
2013-2014	A	10	91%	8	73%	3 Yr. Average	A	100%	87%
	B	1	9%	0	0%		B	0%	9%
	C	0	0%	0	0%		C	0%	2%
	D	0	0%	2	18%		D	0%	2%
	F	0	0%	1	9%		F	0%	0%
Total #:		11		11					

Clatsop County Grades

		Summer Dry		Wet Weather		Summer Dry		Wet	
		#	%	#	%	%	%		
2013-2014	A	8	100%	5	63%	3 Yr. Average	A	100%	81%
	B	0	0%	0	0%		B	0%	13%
	C	0	0%	0	0%		C	0%	3%
	D	0	0%	2	25%		D	0%	3%
	F	0	0%	1	13%		F	0%	0%
Total #:		8		8					

Tillamook County Grades

		Summer Dry		Wet Weather		Summer Dry		Wet	
		#	%	#	%	%	%		
2013-2014	A	2	67%	3	100%	3 Yr. Average	A	100%	100%
	B	1	33%	0	0%		B	0%	0%
	C	0	0%	0	0%		C	0%	0%
	D	0	0%	0	0%		D	0%	0%
	F	0	0%	0	0%		F	0%	0%
Total #:		3		3					

= Number of Monitoring Locations
Percentages may not add up to 100 due to rounding.

Oregon's consistently monitored beach locations earned excellent dry weather grades this past year with all earning A grades except for Short Sand Beach at Short Sand Creek (Oswald State Park) which earned a B grade.

Oregon's Department of Human Services and Department of Environmental Quality collectively monitored 42 locations throughout the state; however, only 11 ocean water sampling sites were sampled frequently enough (at least weekly) to receive a grade in this report. Oregon monitors water quality using Enterococcus bacteria, which differs from California's three indicator bacteria monitoring protocol. Oregon's sampling methodology can be found in Appendix C3.

Wet weather water quality grades slipped to 73% A grades (from 91% A grades in last year's report). Poor wet weather grades were found at the following locations: Cannon Beach at Ecola Creek mouth (2nd Ave.) (D grade), Cannon Beach projection of Gower Ave. storm outflow (F grade), and Seaside Beach at 12th Ave. (D grade).

Heal the Bay looks forward to working with Oregon agencies to increase beach monitoring frequency, as well as the number of sampling locations covered by the Beach Report Card.

Without federal Beaches Environmental Assessment and Coastal Health Act (BEACH Act) funding, Oregon's beach program is in jeopardy, as the Oregon Health Authority may not fund the program with state resources. Unlike some other states, Oregon's beach program relies entirely on federal grants. Without federal funds, Oregon may no longer have a beach program beyond the 2014 sampling season. See Federal BEACH Act Funding Cuts under *Beach News* on page 57.

Sewage Spills

There were no reported sewage spills in Oregon that led to beach closures this past year.

For additional water quality information:

Oregon Health Authority

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



2013-2014 Beach Report Card: Washington State

WASHINGTON (STATE) GRADES

		Summer Dry		Winter Dry		Wet Weather	
		#	%	#	%	#	%
2013-2014	A	147	85%	14	93%	127	74%
	B	6	3%	0	0%	8	5%
	C	7	4%	0	0%	11	6%
	D	4	2%	0	0%	10	6%
	F	8	5%	1	7%	16	9%
Total #:		172		15		172	
3 Yr. Average	A		91%		100%		82%
	B		4%		0%		5%
	C		1%		0%		2%
	D		2%		0%		6%
	F		3%		0%		5%

Clallam County Grades

		Summer Dry		Winter Dry		Wet Weather	
		#	%	#	%	#	%
2013-2014	A	24	100%	14	93%	21	88%
	B	0	0%	0	0%	1	4%
	C	0	0%	0	0%	1	4%
	D	0	0%	0	0%	0	0%
	F	0	0%	1	7%	1	4%
Total #:		24		15		24	
3 Yr. Average	A		95%		100%		92%
	B		5%		0%		6%
	C		0%		0%		0%
	D		0%		0%		2%
	F		0%		0%		0%

= Number of Monitoring Locations
Percentages may not add up to 100 due to rounding.



Picnic Point-North, Snohomish County

Washington's BEACH program is a state-administered and locally implemented program. Approximately 80% of the program is funded under the federal BEACH Act, with the remaining 20% funded by the United States Environmental Protection Agency's (USEPA) National Estuary Program's Pathogen Prevention, Reduction and Control Grant. The program is designed to monitor Washington's popular marine swimming locations for fecal contamination, as well as inform the public when an increased risk of illness is identified. The Makah Tribe also contributes beach monitoring to the state program through separate BEACH Program Tribal funding. Based on the number of sample sites per mile of beach, Washington State has one of the most robust beach monitoring programs in the country. Washington monitors only *Enterococcus* bacteria, which differs from California's three indicator bacteria monitoring protocol. Washington's grading methodology can be found in Appendix A2 on page 94.

The State of Washington exhibited very good dry weather grades with 89% A or B grades, though scored slightly lower than the previous summer (95% A or B grades). Last summer, Washington monitored a total of 58 beaches with 172 monitoring locations (typically each beach has three monitoring locations). The Makah Tribe is credited with monitoring the state's only year-round monitoring locations; 15 of which were monitoring frequently enough throughout the winter to be included in this report. Nineteen of the 172 monitoring locations (11%) received fair to poor water quality grades during summer dry weather throughout the state (seven C grades, four D grades and eight F grades). This was more than twice as many fair-to-poor grades this past summer compared to both the previous summer and the state's three year average. The poorest dry weather grades in Washington State last summer were found at: Island County's Freeland County Park in Holmes Harbor (two D grades and one F grade), Pomoroy Park's Manchester Beach in Kitsap County (two D grades and one F

Grays Harbor County Grades

		Summer Dry		Wet Weather		Summer Dry		Wet	
		#	%	#	%	#	%	#	%
2013-2014	A	9	100%	9	100%	3 Yr. Average	A	100%	96%
	B	0	0%	0	0%		B	0%	4%
	C	0	0%	0	0%		C	0%	0%
	D	0	0%	0	0%		D	0%	0%
	F	0	0%	0	0%		F	0%	0%
Total #:		9		9					

Island County Grades

		Summer Dry		Wet Weather		Summer Dry		Wet	
		#	%	#	%	#	%	#	%
2013-2014	A	5	56%	7	78%	3 Yr. Average	A	56%	28%
	B	0	0%	1	11%		B	7%	0%
	C	1	11%	0	0%		C	4%	0%
	D	2	22%	0	0%		D	15%	17%
	F	1	11%	1	11%		F	19%	56%
Total #:		9		9					

Jefferson County Grades

		Summer Dry		Wet Weather		Summer Dry		Wet	
		#	%	#	%	#	%	#	%
2013-2014	A	3	100%	3	100%	3 Yr. Average	A	89%	100%
	B	0	0%	0	0%		B	6%	0%
	C	0	0%	0	0%		C	3%	0%
	D	0	0%	0	0%		D	3%	0%
	F	0	0%	0	0%		F	0%	0%
Total #:		3		3					

King County Grades

		Summer Dry		Wet Weather		Summer Dry		Wet	
		#	%	#	%	#	%	#	%
2013-2014	A	19	90%	10	48%	3 Yr. Average	A	97%	93%
	B	1	5%	2	10%		B	1%	1%
	C	1	5%	0	0%		C	1%	3%
	D	0	0%	6	29%		D	0%	3%
	F	0	0%	3	14%		F	0%	0%
Total #:		21		21					

Kitsap County Grades

		Summer Dry		Wet Weather		Summer Dry		Wet	
		#	%	#	%	#	%	#	%
2013-2014	A	32	89%	30	83%	3 Yr. Average	A	97%	83%
	B	0	0%	2	6%		B	1%	6%
	C	1	3%	3	8%		C	1%	8%
	D	2	6%	0	0%		D	0%	3%
	F	1	3%	1	3%		F	0%	0%
Total #:		36		36					

= Number of Monitoring Locations
Percentages may not add up to 100 due to rounding.



Westhaven State Park, Grays Harbor

grade), Allyn Waterfront Park (two F grades) and Potlatch State Park (one F grade) in Mason County, and Whatcom County's Little Squalicum Park (3 F grades).

Overall, wet weather water quality at Washington State beach monitoring locations was good with 78% A or B grades, though slightly below last year (83% A or B grades). Of the 15 locations monitored during winter dry weather, all locations received A grades except for Dakwas Park Beach Neah Bay (middle of three sampling locations), which earned an F grade.

A complete list of grades for Washington State's beach monitoring locations can be found in Appendix C2 on page 94.

Sewage Spill Summary

This past year, Washington experienced nine sewage spills that resulted in beach closures. A known combined volume totaling more than 200,000 gallons was spilled. Those spills were responsible for closures at eight beaches typically lasting one week or less. The largest sewage spill (an estimated 200,000 gallons) occurred on January 22, 2014 as a result of a UV system error at a wastewater treatment facility which led to a three day beach closure at Chambers Creek Regional Park in Pierce County. In the past year, the Washington BEACH Program has posted 20 beaches with almost 30 advisories or closures due to sewage and combined sewer overflows.

Combined Sewer Overflows

Combined sewer and stormwater (CSS) systems are located in older communities throughout the Puget Sound. CSSs carry both wastewater and stormwater to a treatment plant, and when heavy rains fill the pipes, excess stormwater and sewage flow directly into local waterbodies. These Combined Sewer Overflows (CSOs) are a concern for beach managers because untreated wastewater and stormwater may discharge near swimming beaches and pose risks to public health. In particular, CSO discharges in King County and in Clallam County outlet near BEACH Program-monitored swimming beaches.

Mason County Grades

		Summer Dry		Wet Weather				Summer Dry		Wet	
		#	%	#	%			%	%		
2013-2014	A	7	58%	6	50%	3 Yr. Average	A	90%	96%		
	B	2	17%	0	0%		B	0%	0%		
	C	0	0%	2	17%		C	3%	0%		
	D	0	0%	0	0%		D	3%	0%		
	F	3	25%	4	33%		F	3%	4%		
Total #:		12		12							

Pierce County Grades

		Summer Dry		Wet Weather				Summer Dry		Wet	
		#	%	#	%			%	%		
2013-2014	A	24	89%	20	74%	3 Yr. Average	A	99%	72%		
	B	1	4%	0	0%		B	1%	12%		
	C	2	7%	3	11%		C	0%	3%		
	D	0	0%	1	4%		D	0%	12%		
	F	0	0%	3	11%		F	0%	1%		
Total #:		27		27							

Snohomish County Grades

		Summer Dry		Wet Weather				Summer Dry		Wet	
		#	%	#	%			%	%		
2013-2014	A	16	89%	18	100%	3 Yr. Average	A	84%	82%		
	B	1	6%	0	0%		B	12%	0%		
	C	1	6%	0	0%		C	0%	0%		
	D	0	0%	0	0%		D	0%	10%		
	F	0	0%	0	0%		F	4%	8%		
Total #:		18		18							

Thurston County Grades

		Summer Dry		Wet Weather				Summer Dry		Wet	
		#	%	#	%			%	%		
2013-2014	A	2	67%	2	67%	3 Yr. Average	A	100%	100%		
	B	1	33%	1	33%		B	0%	0%		
	C	0	0%	0	0%		C	0%	0%		
	D	0	0%	0	0%		D	0%	0%		
	F	0	0%	0	0%		F	0%	0%		
Total #:		3		3							

Whatcom County Grades

		Summer Dry		Wet Weather				Summer Dry		Wet	
		#	%	#	%			%	%		
2013-2014	A	6	60%	1	10%	3 Yr. Average	A	67%	40%		
	B	0	0%	1	10%		B	11%	17%		
	C	1	10%	2	20%		C	3%	0%		
	D	0	0%	3	30%		D	6%	17%		
	F	3	30%	3	30%		F	14%	27%		
Total #:		10		10							



Purdy Sandpit State Park, Pierce County

King County provides a real-time map notifying the public about CSO discharges at www.kingcounty.gov/environment/wastewater/CSOstatus/Overview.aspx.

In Clallam County, Port Angeles Harbor is lined with CSSs managed by the city and regulated by the Department of Ecology. Sail and Paddle Park Beach and Hollywood Beach are located in Port Angeles Harbor. Over the past few years, steps have been taken to reduce the volume of CSOs discharged to the Harbor.

In 2013, there were five CSOs in Washington State due to large storm events between July and October 2013. The largest CSO occurred on June 26, 2013 and discharged 12,969 gallons into Port Washington Narrows and Sinclair Inlet, resulting in six beaches being closed for seven days in Kitsap County and Pierce County. 

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

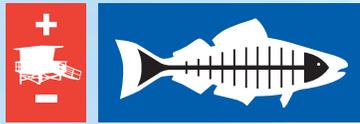
For additional water quality information:
State of Washington's Department of Ecology
www.ecy.wa.gov/programs/eap/beach/index.html

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

= Number of Monitoring Locations
Percentages may not add up to 100 due to rounding.



Manhattan Beach Pier



2013-2014 IMPACTS & NEWS

Storm drain runoff is the greatest source of pollution to local beaches, flowing untreated to the coast and potentially contaminated with motor oil, animal waste, pesticides, yard waste and trash.

Health officials recommend that beach users never swim in any coastal waters within 100 yards on either side of a flowing storm drain or creek for at least three days following a significant rain event. Preliminary evidence from a recent study* conducted by Heal the Bay and UCLA, suggests avoiding beach water contact for at least five days after a rainfall may be more protective of public health. Based on these results, Heal the Bay encourages the California Department of Public Health (CDPH) to validate these findings by conducting a broader statewide assessment.

*Please see "Re-evaluating California's Three Day Rule" under Beach News for a summary of the study and link to the paper.



California Beach Types & Water Quality

California’s beach grades were analyzed to determine differences in water quality based on beach type. Beaches were divided into three categories: open ocean beaches, beaches adjacent to a creek, river, or storm drain (natural or concrete) and beaches located within enclosed water bodies.

The grades were analyzed for all three time periods: summer dry season (April through October), winter dry weather (November through March) and year-round wet weather conditions. Figure 3-1 illustrate the grades by percent during each time period.

Open Ocean Beaches

In general, open ocean beaches with no known pollution sources exhibit excellent summer dry weather beach water grades. This past year was no exception, as all open ocean beaches earned A grades for the summer dry weather time period and bested the five-year average (99% A grades). Winter dry weather grades at open ocean beaches were also excellent with 97% A or B grades, two percent above the five-year average (95% A or B grades). Wet weather grades slipped 13% from last year’s report to 77% A or B grades, though still bested the five-year average by one percent (76% A or B grades).

Storm Drain Impacted Beaches

Storm drain impacted beaches earned excellent summer dry weather grades this year with 97% A or B grades, and bested the five-year average by four percent. Winter dry weather grades at storm drain beaches were up four percent from last year’s report to 94% A or B grades, and bested the five-year average by 13%. Wet weather grades at storm drain beaches slipped slightly from last year’s report to 69% A or B grades (71% last year).

Los Angeles County remains one of the only counties in the state (along with Humboldt County, San Francisco County and portions of San Diego and Santa Cruz counties) to modify its monitoring program to collect samples directly in front of flowing storm drains and creeks. This change in Los Angeles County was a result of the Santa Monica Bay Beach Bacteria TMDL requirements and associated implementation plans designed to restore water quality and protect public health and aquatic life. Heal the Bay will continue to advocate that all beach monitoring locations in California associated with flowing storm drains or creeks be sampled directly at the outfall or where urban runoff meets the ocean (point zero). We hope to make point zero monitoring a prerequisite of eligibility for state water quality funding.



TABLE 3-1: GRADES FOR POPULAR ENCLOSED BEACHES 2013-2014

	Summer Dry	Winter Dry	Wet Weather
Baby Beach, Dana Point			
West end	A	n/a	n/a
Buoy line	C	n/a	n/a
Swim area	B	n/a	n/a
East end	A	n/a	n/a
Mother’s Beach, Marina del Rey			
Playground area	A	F	F
Lifeguard tower	B	F	F
Between tower/boat dock	F	F	F
Inner Cabrillo Beach, San Pedro			
Harborside at restrooms	F	D	F
Harborside at boat launch	D	C	F

FIGURE 3-1: GOOD / POOR GRADES BY TIME PERIOD & BEACH TYPE

Enclosed Beaches

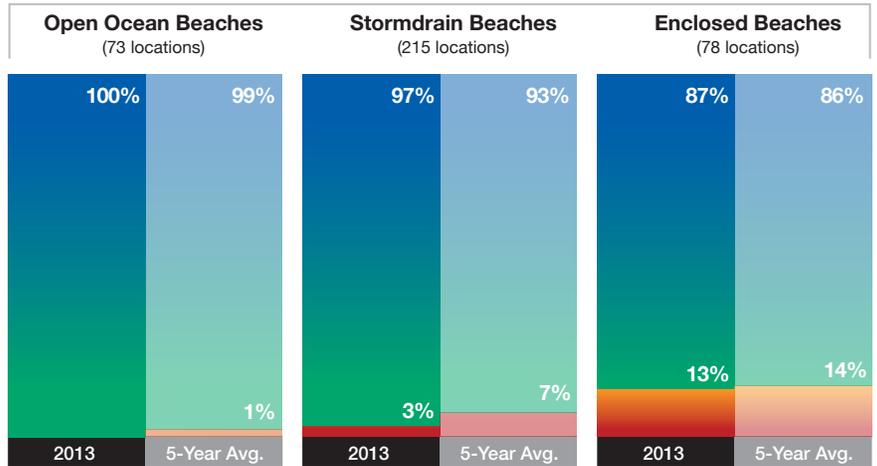
Water quality continues to be problematic at enclosed beaches, primarily due to poor beach water circulation. Summer dry weather grades at enclosed beaches remain on par with last year's report at 87% A or B grades

Winter dry weather grades at enclosed beaches were up eight percent from last year's report with 84% A or B grades this past year. Wet weather grades continue to be extremely poor at enclosed beaches this past year, with only 35% A or B grades, 34% below the statewide average. Note: half of this year's Top Ten Beach Bummers are enclosed beaches.

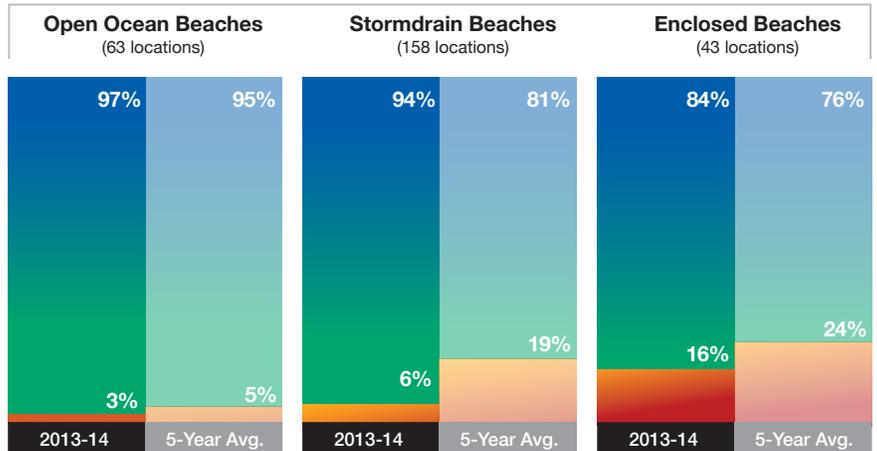
This comparison clearly demonstrates that water quality at open ocean beaches is superior to water quality at enclosed and storm drain impacted beaches. In essence, a swimmer has a nearly 100% chance of finding excellent water quality at an open ocean beach with no known pollution source during dry weather.

The results also demonstrate that most of California's open ocean beaches are very clean during dry weather. 

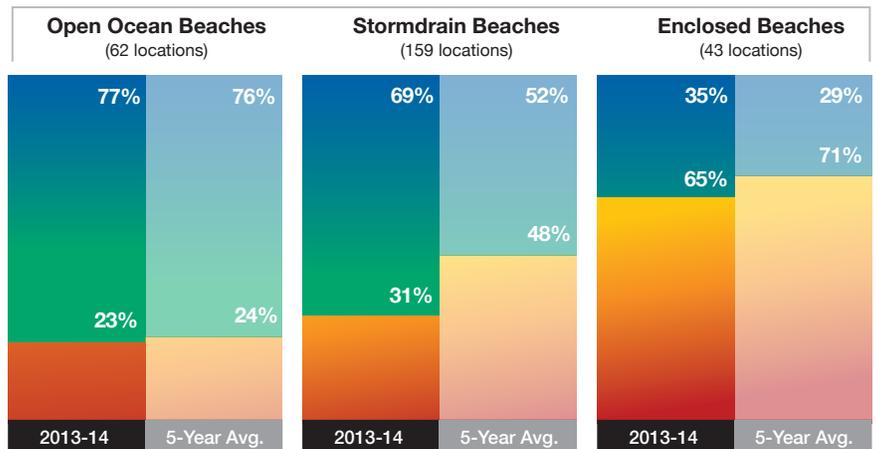
SUMMER DRY (APRIL - OCTOBER)



WINTER DRY (NOVEMBER - MARCH)



WET WEATHER



 : A+B GRADES  : C+D+F GRADES



The Clean Beach Initiative

In 2000, then Governor Gray Davis and Assemblywoman Fran Pavley proposed allocating \$34 million from the state budget towards protecting and restoring the health of California's beaches. This funding became known as the Clean Beach Initiative (CBI). To date, more than \$100 million has been allocated to projects to clean up California's most polluted beaches and to fund research on rapid pathogen indicators and pathogen source identification efforts.

Since the implementation of this funding, dozens of projects have been completed or are nearing completion. Many completed CBI projects have already made a big difference towards improving water quality at chronically polluted beaches.

CBI UPDATE: Santa Monica Bay Beaches

Last year, the City of Los Angeles completed the last phase of the \$40+ million year-round dry weather runoff diversion projects (funded by Prop. O, CBI and American Recovery and Reinvestment Act [ARRA] funds). The project diverts runoff from eight storm drains into the Coastal Interceptor Sewer that flows to the Hyperion Treatment Plant. This is the first large scale, highly engineered year-round runoff diversion project completed in California. All eight low flow diversion (LFD) beaches received A or B grades for the third year in a row during both summer and winter dry weather, which is a great accomplishment. We hope this serves as a model for water quality improvement projects at other beaches that are highly impacted by urban runoff.

A Prop. O-funded inflatable rubber dam and the construction of its companion concrete pipe at Santa Monica Canyon will increase the system's capacity in order to accommodate runoff year-round. Unfortunately, due to unforeseen permit delays, the project's original completion date of December 2013 was pushed back to the end of 2014.

Source Identification Protocol Project (SIPP)

California's current recreational water quality testing methods fail to differentiate between fecal bacteria sources e.g. bird, dog, or human, making it more difficult for beach managers to mitigate beach water pollution sources and to issue appropriate health risk warnings. In 2010, as a resource geared to guide beach managers in identifying and mitigating bacteria sources at problematic beaches, the State Board approved funding for an approximately \$4 million Source Identification Protocol Project (SIPP). Project researchers hailed from Stanford University, UC Santa Barbara, UC Los Angeles, the United States Environmental Protection Agency (USEPA) Office of Research and Development and the Southern California Coastal Water Research Project (SCCWRP). The project's end goal was to develop a statewide source identification protocol manual to assist beach managers in identifying sources of FIB at chronically polluted beaches through a step-by-step protocol. This tool has been sorely needed for more than a decade. Assembly Bill 538 (AB 538) that became law in 1999 requires source identification and abatement efforts to proceed at chronically polluted beaches but in general, these requirements have been ignored.

The protocol starts with identifying more obvious potential sources (e.g. large bird population due to uncovered trash bins), as it guides the user through more complex source tracking techniques, including the inves-

TABLE 3-2: MAJOR CBI PROJECTS

County	Beach location(s)	Project type
Mendocino County	Putding Creek Beach	Sewer
San Francisco County	Aquatic Park Beach	Diversion
	San Francisco Bay Beaches	Sewer upgrades
San Mateo County	Montara State Beach	Sewer
	Pacifica State Beach	Diversion
	Fitzgerald Marine Reserve	Sewer
Santa Cruz County	Main, Cowell and Seabright Beaches	Diversion
	Main Beach	Diversion
	Aptos Beach	Sewer
	New Brighton and Seacliff Beaches	Sewer
	Capitola Beach	Sewer
Monterey County	Monterey State Beach	Diversion
	Monterey Bay Beach	Diversion
	Lovers Point Beach	Diversion
San Luis Obispo	Pismo State Beach	Sewer upgrades
Santa Barbara County	Arroyo Burro and East Beaches	Diversion
	East Beach and Mission Creek	Treatment Facility
	South Coast Beach Communities	Sewer upgrades
Ventura County	Kiddie and Hobie Beach	Diversion/circulation
	Promenade Park Beach	Diversion
Los Angeles County	Will Rogers State Beach	Diversion
	Santa Monica Bay Beaches	Diversions
	Santa Monica Pier	Pier improvements
	Avalon Bay Beaches	Sewer upgrades
	Venice Beach	Diversion
	Hermosa Beach	Diversion
	Paradise Cove	Treatment Facility
	Surfrider Beach/Malibu Lagoon	Diversion
	Surfrider Beach/Malibu Lagoon	Treatment Facility
	Mother's Beach	Circulation
	Dockweiler Beach	Diversion
	Manhattan Beach	Diversion
	Redondo Beach	Pier Improvements
	Redondo Beach	Diversion
	Inner Cabrillo Beach	Circulation
Orange County	Laguna Beach and Laguna Main Beach	Diversion
	Capistrano County Beach	Sewer upgrades
	Baby Beach	Source Abatement
	Salt Creek and Monarch Beaches	Treatment Facility
San Diego	Imperial Beach	Diversion
	Mission Bay	Source Abatement
	Buccaneer Beach and Loma Alta Creek Lagoon	Treatment Plant
	Moonlight Beach	Treatment Facility
	Coronado Beach	Diversion
Statewide	Source Identification Protocol Project (SIPP)	

tigation of potential sewer/septic leaks using genetic markers. This new source identification manual will not only provide consistency for all future source identification studies, but will allow the State Board and other agencies to make more informed decisions when it comes to funding future water quality improvement projects. The full manual can be found at: www.swrcb.ca.gov/water_issues/programs/beaches/cbi_projects/docs/sipp_manual.pdf

Major CBI Projects

At left is a table listing the major CBI project types and locations that have been funded and implemented in order to achieve state-wide beach water quality improvement:

Currently, approximately \$31 million in CBI funds is available for additional beach water quality improvement projects, with up to \$5 million of that amount available for research projects, and the remainder for implementation projects. Two implementation projects and two research projects have recently executed grant agreements and are currently underway. Additionally, six projects recommended by the Clean Beach Task Force (both implementation and research) are under development and waiting final State Board approval to receive Preliminary Funding Commitments (PFCs) followed by official grant agreements. The CBI Solicitation was opened in early April and will be closed to new project proposals on June 12, 2014. Additional projects will continue to be supported until CBI funds are exhausted. For details on the status of CBI project go to: www.waterboards.ca.gov/water_issues/programs/beaches/cbi_projects/index.shtml

Predictive Beach Modeling

Predictive models can provide early public notification of poor water quality much faster than the current methods, which can take 18-24 to process results. The existing system leads to beach advisories and closures being issued too late to protect public health, due to the one-day delay between sample collection and obtaining results. Even the use of more rapid detection methods have a 4-6 hour lag-time before beachgoers can be notified of current beach water conditions.

In January 2012, Heal the Bay and Stanford University were awarded CBI funds for a predictive beach water quality modeling study, a project Heal the Bay had been anticipating for over four years. Results from the two-year long project look promising. The two-year study (scheduled for release this summer) will recommend predictive models, many more accurate than our current methods, for 25 beaches from San Diego to San Francisco.

Implementation of successful predictive models by beach managers would lead to near-real time water quality information being available as a protective public health tool for California beachgoers.





Dockweiler Beach, El Segundo



Total Maximum Daily Loads (TMDLs)

A Total Maximum Daily Load or TMDL is the maximum amount of pollution that a waterbody can receive and still meet water quality standards. TMDLs provide a framework for addressing water quality problems and restoring a waterbody’s beneficial use. Though TMDLs can be developed to address a wide range of pollutants including metals, nutrients and trash, there are numerous TMDLs in California that focus on bacteria.

**TABLE: 3-3:
LOS ANGELES COUNTY BEACHES WITH MORE THAN
TEN EXCEEDANCE DAYS 2013-2014**

	Violations	Location
Summer Dry AB411	104	Santa Monica Municipal Pier
	95	Cabrillo Beach - harborside at restrooms
	89	Cabrillo Beach - harborside at boat launch
	49	Marina del Rey, Mother’s Beach - lifeguard tower
	39	Dockweiler State Beach at Ballona Creek mouth
	33	Surfrider Beach
	32	Marina del Rey, Mother’s Beach - btwn. tower and boat dock
	31	Marina del Rey, Mother’s Beach - Playground area
	19	Malibu Pier- 50 yards east
	16	Redondo Municipal Pier - south side
15	Santa Monica Beach at Pico/Kenter storm drain	
Winter Dry Weather	108	Marina del Rey, Mother’s Beach - lifeguard tower
	101	Marina del Rey, Mother’s Beach - Playground area
	91	Santa Monica Municipal Pier
	53	Surfrider Beach
	49	Cabrillo Beach - harborside at boat launch
	44	Cabrillo Beach - harborside at restrooms
	32	Marina del Rey, Mother’s Beach - btwn. tower and boat dock
	28	Will Rogers State Beach at Santa Monica Canyon drain
	26	Heronido Street storm drain
	19	Topanga State Beach at creek mouth
	15	Paradise Cove Pier at Ramirez Canyon Creek mouth
	15	Santa Monica Beach at Pico/Kenter storm drain
	14	Manhattan Beach at 28th St. drain
	13	Dockweiler State Beach at Ballona Creek mouth
	13	Redondo Municipal Pier 100 yards south
	10	Malibu Pier- 50 yards east
10	Santa Monica Beach at Wilshire Blvd. drain	
Winter Wet Weather	16	Marina del Rey, Mother’s Beach - lifeguard tower
	15	Marina del Rey, Mother’s Beach - Playground area
	10	Surfrider Beach

Santa Monica Bay TMDLs

Every beach from the Ventura County line south to Palos Verdes was mandated to meet state beach bacteria health standards 100% of the time during the AB 411 time period (from April 1 to October 31) by July 15, 2006 and only three allowable violations during the winter dry period (from November 1 to March 31) by July 15, 2009 or face penalties. In addition, the first winter wet weather compliance point passed in 2009; specifically the TMDL requires a 10% cumulative percentage reduction from the total exceedance day reductions required for each jurisdictional group if an integrated water resources approach is implemented with a 25% reduction required by 2013.

Marina del Rey’s Mother’s Beach and Back Basins had a compliance deadline for summer and winter dry weather of March 18, 2007 and Los Angeles Harbor (Cabrillo Beach harborside and Main Ship Channel) passed the compliance deadline for both the AB 411 time period and winter dry and winter wet weather on March 10, 2010. The 100% compliance requirement for the AB 411 time period means that all of these beaches must be safe for swimming every day for the seven months from April through October. In the winter dry and winter wet time periods, beaches are allowed a specified number of exceedances in order to account for reference conditions. Final wet weather exceedance requirements under the fecal bacteria TMDLs for Santa Monica Bay, Mother’s Beach and Los Angeles Harbor must be met by July 15, 2021. Heal the Bay’s analysis of summer dry weather and winter dry weather data indicates thousands of exceedances of bacterial standards. Our review of wet weather data also indicates non-compliance with interim TMDL requirements. See Table 3-3 for a summary of this past year’s bacteria TMDLs for Santa Monica Bay, Mother’s Beach and Los Angeles Harbor. 



Topanga Canyon Beach outlet



Major Beach News

- Drought and Climate Change and Beach Water Quality
- The United States Environmental Protection Agency (EPA) Releases Beach Guidance and Performance Criteria
- Federal BEACH Act Funding
- California's Beach Program Funding
- Los Angeles Regional Measure
- Municipal Stormwater Permits (Municipal Separate Storm Sewer System (MS4) permits)
- The EPA Abandons Stormwater Rulemaking
- Investigating the Efficacy of Best Management Practices (BMPs) in Los Angeles
- Rapid Testing Methods
- Re-examining California's 3-Day Rule
- Avalon Beach's Epidemiology Study
- Malibu Civic Center-update
- Statewide Septic Systems Regulations
- Surfer Health Effects Study

Drought and Climate Change and Beach Water Quality

Over the past few years, rainfall levels in California (and especially in Southern California) were well below average. In fact precipitation levels this past winter were 44% and 57% of the previous 10 winter averages for Los Angeles and San Francisco rain stations, respectively (Figure 3-3). On January 17, 2014, with California facing water shortfalls in the driest year in recorded state history, Governor Brown proclaimed a State of Emergency and directed state officials to take all necessary actions to prepare for these drought conditions. On April 25, 2014 the Governor issued an Executive Order calling for additional water-saving measures, as the snowpack data showed that the state was only at 16% of average.

During drier weather conditions there is less overall runoff, which typically carries pollutants such as bacteria to the beach water. Beach water quality grades may be higher in a given year due to less runoff, the resulting improved water quality may be providing a false sense of long-term beach water quality improvement. See Figure 3-4 for an example of Long Beach's grades and rainfall between 2007-2014.

Californians live in a constant cycle of long dry periods followed by shorter periods of wet weather. In March, the National Oceanic and Atmospheric Administration's Climate Prediction Center released an "El Niño Watch" for California for later this year. This climate phenomenon could lead to increased precipitation across the state.

Further, climate change is predicted to change natural climate patterns. Recent models developed by researchers at UCLA suggest increased precipitation in the winter months (Neelin, J. David, Baird Langenb-runner, Joyce E. Meyerson, Alex Hall, Neil Berg, 2013: California Winter Precipitation Change under Global



FIGURE 3-3: SOUTHERN CALIFORNIA WINTER RAINFALL (2003-2014)

November-March rainfall totals for monitoring stations in Santa Barbara, Ventura, Los Angeles, Orange and San Diego Counties
 Source: Accuweather

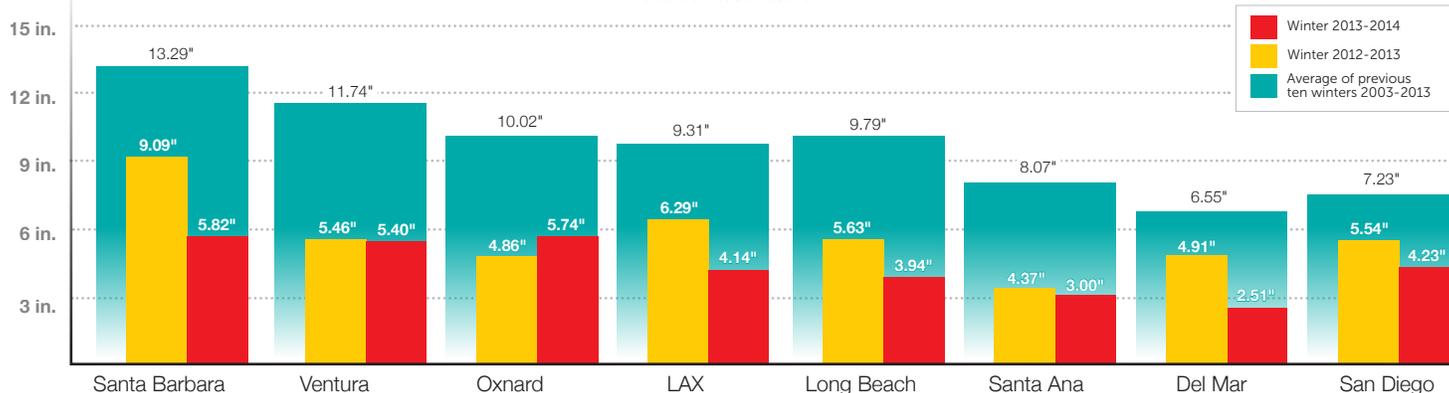
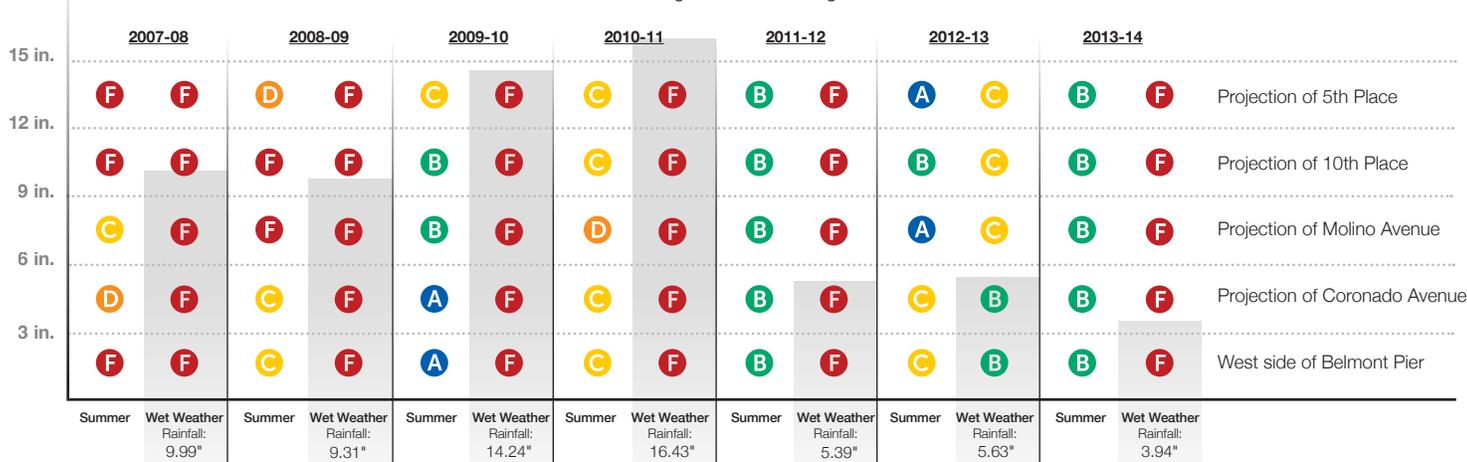


FIGURE 3-4: LONG BEACH GRADES AND RAINFALL COMPARISON

2007-2014 Summer and Wet Weather Grades at Long Beach monitoring locations between 5th Street and Belmont Pier



Warming in the Coupled Model Intercomparison Project Phase 5 Ensemble. *J. Climate*, 26, 6238–6256). In addition, according to the study by the year 2050 the Los Angeles mountain areas are projected to have 30-40% less snowfall. This could lead to increased flooding and heavy runoff to the ocean, potentially flushing more polluted water down to the beach. Implementing green infrastructure can help to improve water quality at our beaches, decrease neighborhood flooding, and maximize local water supplies by infiltrating water into the ground when it falls. For more information see Create Low Impact Development (LID) Ordinances on page 68 under *Recommendations for the Coming Year*.

The United States Environmental Protection Agency (EPA) Releases Beach Guidance and Performance Criteria

In November 2012, the United States Environmental Protection Agency (EPA) released its National Recreational Beach Water Quality Criteria, which unfortunately were a huge disappointment to Heal the Bay and other environmental groups. Some of our major concerns with the criteria include:

- Two sets of standards (based on two different estimated illness rates), which allows states to determine their own "acceptable illness rates" leaving major inconsistencies in public health protection.
- A missed opportunity to incentivize the use of rapid methods. According to the criteria, rapid methods cannot be used as a stand-alone method, leaving little incentive for states to move forward with their use.

- Alternative criteria, such as Quantitative Microbial Risk Assessment (QMRA) allows agencies to assess potential health risks based strictly on the presence of fecal sources. Much more research needs to be conducted on illness rates and risks associated with specific sources, making QMRA too premature to implement (or recommend) at beaches.
- Beach Action Values (BAVs) are not included in the formal recommended criteria, so they may or may not be implemented by states. BAVs are optional criteria thresholds for states to use for public notification purposes and described by the EPA as “conservative and precautionary”. The optional use of BAVs may be one of Heal the Bay’s biggest concerns, as it is irresponsible for the EPA to give states an option when it comes to protecting public health.

In April 2014, the EPA released its draft National Beach Guidance and Required Performance Criteria for Grants for public comment. The final beach guidance document will replace the 2002 beach guidance document. It has been updated to reflect current policies, relevant technical information, and key aspects of the 2012 Recreational Water Quality Criteria. A key change from the 2002 guidance document requires that states use BAVs to trigger beach notifications in order to be eligible for federal BEACH Act funding. Heal the Bay believes that this is a step in the right direction. While the BAVs are still optional according to the criteria, linking their use to federal funding will hopefully be a major incentive for their use, and should lead to greater public health protection.

Federal BEACH Act Funding

In March 2014, the EPA’s BEACH Act grant program, a key initiative for protecting public health at our nation’s beaches was excluded from the President’s proposed budget. The roughly \$10 million of annual federal funding allows states to develop and implement water quality monitoring and notification programs. The EPA stated that after 10 years of funding, many non-federal agencies now have the ability to run their beach programs without federal support.

This is extremely concerning for two reasons: many state beach programs are run completely on federal funds (such as Oregon) and states are only legally required to implement beach programs when federal funding is provided. Routine beach water monitoring is essential for identifying polluted waters and notifying the more than 90 million beachgoers who visit our nation’s beaches annually.

While the latest round of funding cuts are a major setback for coastal public health protection, they don’t come as a complete surprise. Funding for the federal BEACH program has been slated for elimination and then reinstated from federal budget proposals since 2012. In 2012, 2013, and 2014 environmental groups including Heal the Bay, have facilitated Senate and House sign-on letters urging the Senate’s Appropriations Committee to fund the BEACH Act grant program. Fortunately, support from within the Senate has narrowly allowed this program to survive the last few years.

EPA recently released a draft version of its National Beach Guidance and Required Performance Criteria for Grants. These guidelines include a more comprehensive approach to beach monitoring and public notification, as well as new technical information. We are pleased to see a proposed requirement for states to use more protective notification criteria (Beach Action Values) in order to be eligible for grant funds. With these significant guideline changes, it is all the more important that Congress permanently restore federal funding in order to protect the public from getting sick after a trip to the beach and support our valuable coastal economies.

California’s Beach Program Funding

On October 8, 2011 Senate Bill 482 (SB 482) was signed into law. This law, which became effective on January 1, 2012, allows all administrative rights and responsibilities for California’s Beach Program to be transferred from the State Department of Public Health to the State Water Resources Control Board (State Board). New responsibilities given to the State Board include adopting, amending, and enforcing the regulations, in consultation with the Department of Public Health.



SB 482 also allows the State Board to direct discharger permit fees (up to \$1.8 million annually) towards California’s Beach Program. This is a key element in ensuring that beach monitoring continues in California. Last summer, the California State Legislature and Governor agreed to increase the state Beach Program funding for the 2013-2014 fiscal year (FY) from \$1 million (amount approved for FY 2012-2013) to the full \$1.8 million, the true funding amount needed to sustain a model monitoring program in California. The full \$1.8 million funding for California’s Beach Program will need to be approved on an annual basis, therefore, it is not guaranteed in perpetuity. Less than full funding puts strain on California’s entire beach program and places public health at risk.

The State Board has collected detailed information from municipalities and county health agencies about their annual beach monitoring program costs, current monitoring locations, and monitoring frequencies to more efficiently and effectively streamline the Beach Program. Since 2012, Heal the Bay has encouraged the State Board to develop protective beach monitoring and public notification criteria for beach program funding eligibility. We are disappointed that nothing has been finalized to date and strongly encourage the State Board to adopt this approach.

Heal the Bay’s recommended criteria for funding eligibility include:

- Beach water samples should be taken directly from areas of highest expected bacteria levels (outfalls of stormdrains, creeks, and rivers - “point zero”) and highest recreational use.
- Monitoring agencies must continue to monitor at least 80% of the locations monitored prior to the 2008 state budget cuts.
- Sampling frequency should increase with beach use and/or public health risk.
- Public notification of water quality should occur immediately after sampling results are available.
- Monitoring agencies and dischargers should be required to work together to streamline and enhance coastal monitoring for year-round public health protection.

Los Angeles Regional Measure

In 2013, the County of Los Angeles proposed the Clean Water Clean Beaches Measure. The proposed measure would have provided \$270 million annually for innovative stormwater projects throughout Los Angeles

County, including stormwater reuse projects that have the ability to turn rainwater into an asset. Heal the Bay, other non-government organizations (NGOs) and several cities were very supportive of this measure. Unfortunately, the Board of Supervisors tabled the proposal before allowing it to go to the voters for approval.

There are still efforts underway to pick-up where the County left off with the Measure. An active group of stakeholders, the Coalition for Our Water Future, is working on solutions to overcome some of the hurdles encountered with the previously conceived measure, such as partnering with school districts and developing lists of example projects to be funded. A group of city managers and elected officials from around the county are also working on an effort to educate all the cities about the urgent need for funding of water quality improvement projects and potential steps forward. Their report is expected to be released in the coming weeks.

Municipal Separate Storm Sewer System (MS4) permits

Los Angeles County MS4 Implementation

Implementation planning for the Los Angeles County MS4 is well underway. The cities have formed 18 watershed groups to develop watershed management plans (WMPs) or enhanced watershed management plans (EWMPs). 13 cities have decided to develop their own plan or meet receiving water limits directly. A Technical Advisory Group comprised of various stakeholders was formed to help address various technical issues with plan development. WMPs are due to the Los Angeles Regional Water Quality control Board (Regional Board) in June 2014. For those developing EWMPs, work plans are due in June 2014 and final plans are due in June 2015. These plans will set the stage for water quality improvement projects for many years to come, and it is critical that the plans are technically robust.

The MS4 allows for TMDL responsible parties to submit requests for Time Schedule Orders (TSOs) (within 45 days of MS4 Order adoption) if additional time is needed to comply with final effluent and/or receiving water limitations. The Regional Board considered a TSO for Inner Cabrillo Beach’s (ICB) boat launch ramp monitoring location earlier this year. Heal the Bay submitted written comments stating our concerns. In general, Heal the Bay does not support the issuance of TSOs for past-due TMDLs, especially in situations where Permittees have been out of compliance for a lengthy period of time (in this case, nearly four years). Moreover, implementing a TSO at a chronically polluted location long out of compliance sets a negative precedent and disincentive for stormwater dischargers to take the measures needed to meet state bacteria standards



Cabrillo Beach boat dock

and protect public health. While Heal the Bay recognizes the efforts put forth by the City of Los Angeles to mitigate FIB levels at ICB, adopting a TSO for a chronically polluted location without a clear mitigation plan, sets a bad precedent for dischargers unable to meet TMDL standards. Despite our concerns, on February 6, 2014, the Regional Board approved the TSO at ICB. Heal the Bay will strongly oppose any other proposed TSOs for past-due TMDLs.

On a related note, on May 5, 2014 the United States Supreme Court declined Los Angeles County and the County Flood Control District's request to review a Ninth Circuit Court of Appeals ruling finding Los Angeles County liable for untreated stormwater pollution such as bacteria pollution. The decision stems from a lawsuit initiated by the Natural Resources Defense Council and Los Angeles Waterkeeper in 2008. This action marks a big step in water quality protection.

Long Beach MS4

Long Beach's MS4 permit was adopted by the Regional Board at its February 2014 hearing. The permit is nearly identical to the Los Angeles MS4. It includes all TMDLs in effect (eight TMDLs), including the Long Beach beaches bacteria TMDL. The Regional Board's implementation process for the Los Angeles MS4 anticipated Long Beach joining efforts with the other cities in the county, so Long Beach has been actively participating in the watershed management groups formed after the Los Angeles MS4 was adopted.

The EPA Abandons Stormwater Rulemaking

In 2009 the EPA issued a Federal Register notice soliciting feedback on an effort to shape a program to reduce stormwater impacts nationwide. The proposal included expanding the geographic area subject to federal stormwater regulations, retrofitting existing development with improved stormwater control measures and establishing nationwide Low Impact Development (LID) requirements for new and redevelopment. Heal the Bay attended stakeholder workshops and submitted comments in support of these concepts. Unfortunately after five years of work, the EPA announced in March 2014 that it is abandoning this effort and deferring action on nationwide LID requirements. This decision marks a huge missed opportunity for the EPA to make significant strides in reducing urban runoff, thereby improving beach water quality.

Investigating the Efficacy of Best Management Practices (BMPs) in Los Angeles

The City of Los Angeles Bureau of Sanitation was recently approved by the Los Angeles Regional Board to fund a year-long supplemental environmental project (SEP) in lieu of paying a portion of fines associated with a sewage spill. Heal the Bay is leading this study as a subcontractor for the City. The SEP will analyze beach water quality at 15 monitoring locations in Los Angeles County, to determine which BMPs have been most effective (based on statistical analyses) at reducing bacteria levels in the beach water. Results from the study may influence future BMP implementation. For example, if data indicate significant beach water improvement with one BMP type (e.g. low flow diversion, circulation device) over another, it could direct agencies to invest in the most efficient and effective BMP projects. Final study results are expected to be released in early 2015, and could potentially set the stage for a much larger statewide BMP efficacy analysis.

Rapid Testing Methods

Current water quality testing methods take between 18-24 hours to process, meaning that the public is getting yesterday's water quality information by the time the lab's work is complete. During the summer of 2010, in an effort to provide same-day beach water notification, Orange County piloted a rapid methods project at nine locations from the following three beaches: Huntington State Beach, Newport Beach and Doheny State Beach. The success of the initial demonstration project, which showed that the use of rapid methods is feasible and samples can be collected in the early morning with results posted before noon, prompted a cooperative effort between the City of Los Angeles, Los Angeles County and SCCWRP to undertake a similar

project at various Los Angeles County beaches. Between six and eight monitoring locations were investigated during the summers of 2011 and 2012, with some results showing a positive correlation between rapid methods and current culture-based methods.

In the spring of 2013, San Diego County Department of Environmental Health launched a year-long rapid methods pilot project at a number of coastal beaches throughout the county. The study focused on the feasibility of utilizing rapid methods for routine beach water monitoring and the logistics of implementation. A final report summarizing the study's finding is expected to be released in June 2014.

It may be some time before rapid methods go mainstream, as the EPA's current Recreational Water Quality Criteria do not recognize rapid methods as a stand-alone method. This means that agencies wanting to implement rapid methods are still responsible for also processing the slower, culture based methods. This is a huge set-back in providing "real-time" public health protection, seeing that many agencies are financially struggling to simply maintain their current beach monitoring program. Heal the Bay will continue to advocate for the use of rapid methods, especially at high-use beach locations, in hopes that California and the federal government will prioritize funding for this important methodology in the future.

Re-examining California's 3-Day Rule

Heal the Bay recently worked with a group of UCLA undergraduate environmental science majors to investigate public health risks associated with elevated bacteria levels in beach water after significant rainfall. Rainfall often correlates with increased FIB levels in beach water, thus posing a greater public health risk. California's Department of Public Health (CDPH) currently recommends avoiding beach water contact for at least 72 hours, or three days after a significant rainfall over 0.1 inches. The "3-Day Rule" extends to all beaches in a particular county regardless of rainfall magnitude severity and/or beach type (e.g. enclosed, open, storm drain impacted). The students evaluated thirty-two beaches throughout Los Angeles County and Orange County, using Heal the Bay's historical FIB database, in order to determine if three day rainfall advisories were adequate for protecting public health.

Study results showed that the current 3-Day Rule may not be appropriate/adequate for all beaches, specifically enclosed and storm drain impacted locations. In these cases, elevated bacteria levels continued to persist for five days after a rainfall and up to ten days at enclosed beaches. Based on these results, Heal the Bay encourages CDPH to evaluate the duration of significant rainfall impacts on water quality statewide.

However, prior to evaluating these data statewide, minimum monitoring criteria must be implemented or results will be inconsistent (from county to county), and may lead to variable and inadequate public health recommendations.

Avalon Beach's Epidemiology Study

During the summers of 2007-2008, a cohort epidemiology study, funded by the State Board and the EPA, was conducted at the chronically polluted Avalon Beach. The three main study goals were to determine:

- 1) If swimmers (exposed to beach water) had a higher health risk than non-swimmers;
- 2) If FIB in the beach water correlated with swimmer illness; and



Avalon Beach, Catalina Island

- 3) If the associations between FIB and swimmer health (if any) were affected by groundwater discharge or solar radiation levels.

Over the course of the study, more than 7,300 individuals participated and 703 water quality samples were collected, in order to successfully measure health risks associated with FIB levels at Avalon Harbor Beach.

Results revealed cases of GI illness were higher among swimmers versus non-swimmers. However, FIB levels only correlated with GI illness rates when submarine groundwater discharge (SGD) was high. The study found that in Avalon, raw sewage contaminates the groundwater and percolates to the beach when groundwater levels are high, increasing illness rates. Illness risks also increased relative to extent of beach water exposure e.g. partial immersion, full immersion, or swallowed beach water. Other sources of FIB at Avalon Beach include bird feces, sand, and urban runoff.

It's been nearly seven years since the epidemiology study commenced at Avalon Beach. Since this time the City of Avalon has made notable efforts towards improving beach water quality at Avalon Harbor Beach. For more information on Avalon Beach's latest water quality improvements, see Avalon Beach – Update on page 25. The complete study can be found at www.healthebay.org/sites/default/files/pdf/beachreportcard/Yau-2014-water-research-Avalon.pdf.



Malibu Civic Center – update

In July 2011, the Regional Board entered into a Memorandum of Understanding (MOU) with the City of Malibu to implement the previously adopted septic prohibition in the Malibu Civic Center area. The Regional Board had previously found that wastewater from commercial and residential septic systems in the Civic Center area leaches into Malibu Creek and Lagoon and then flows into the ocean, placing public health at risk. To fulfill MOU requirements, the City of Malibu has begun planning the construction of a centralized wastewater treatment facility capable of treating approximately 500,000 gallons per day of sewage from the Civic Center area. The City is currently working diligently with local stakeholders, the Regional Board, the California Department of Public Health, and wastewater engineers to move forward with the project. While the City has initiated steps outlined in the MOU, the project is currently nine months behind schedule due to unforeseen delays in design, engineering and environmental studies, permitting, and funding. Heal the Bay will continue to track this process closely and advocate for Malibu maintaining its schedule in the MOU.

Statewide Septic Systems Regulations

Assembly Bill 885 (AB 885), signed into law in 2000, required the State Board to set final regulations for siting, monitoring and water treatment performance for California's on-site waste water treatment systems (OWTSs) by January 2004. Due to the lack of progress over the years, Heal the Ocean, Heal the Bay and Coast Law Group sued the State Board to force them to finalize the regulations. After much delay on June 19, 2012, the SWRCB adopted Resolution No. 2012-0032, adopting the Water Quality Control Policy for siting, design, operation, and maintenance of OWTSs (OWTS Policy). This policy establishes a statewide,

risk-based, tiered approach for the regulation and management of OWTS installations and replacements and sets the level of performance and protection expected from OWTS. The OWTS Policy took effect on May 13, 2013.

Regional boards are now in the process of incorporating the policy into regional basin plans. The OWTS Policy facilitates direct local regulation to be implemented through Local Area Management Programs (LAMPs) approved by the regional boards, which would provide a similar level of water quality protection as the Policy criteria while addressing unique geologic conditions or management approaches. Many agencies around the state are currently undertaking the development of draft LAMPs.

Surfer Health Effects Study

Throughout California, state and other local agencies have made great efforts to improve beach water quality and protect public health specifically during the peak summer dry weather months (April through October), when the majority of beachgoers enter the beach water. However due to California’s recently passed stormwater regulations and looming wet weather bacteria TMDL compliance deadlines some agencies have expanded beach water quality improvement efforts. This shift has generated questions regarding health risks associated with beach water exposure during wet weather and/or winter runoff such as whether or not beach water poses a greater health risk for ocean-users during the winter-wet season (November through March). California’s most recent health effects studies conducted at: Doheny Beach (2007-2008), Avalon Beach (2007-2008) and Surfrider Beach (2008-2009) only investigated health risks associated with beach water exposure during summer dry weather, prompting researchers to initiate a pilot winter wet weather epidemiology study.

This past winter, the Southern California Coastal Water Research Project (SCCWRP) and the University of California Berkeley (UCB) in partnership with the Surfrider Foundation and the City of San Diego, piloted a “Surfer Health Effects” study at two San Diego County beaches (Ocean Beach and Tourmaline Beach). The study, funded by the City and County of San Diego, will be the first to measure health risks associated with surfing on the California coast during wet weather. Researchers began enrolling surfers in the study this past January, where participants were asked to complete weekly surveys (through April) noting beach water exposure and illness symptoms. Study results will determine the feasibility and practicality of a larger-scaled study in the future.



Doheny Beach, Dana Point



Santa Monica Beach



Recommendations for the Coming Year

1. Sustainable funding source for water quality improvement projects
2. Proposition 218 reform and AB 2403
3. Advocate full funding for California’s Beach Program
4. Advocate federal funding for Beaches Program
5. Minimum statewide monitoring requirements
6. Incorporate TMDL’s into all Stormwater Permits
7. Ensure implementation of MS4 permits/TMDLs
8. Develop and enforce sanitary survey protocol requirements
9. Create Low Impact Development (LID) Ordinances

Sustainable funding source for water quality improvement projects

Heal the Bay is advocating for sustainable funding for water quality improvement projects. This will come from multiple sources such as the Los Angeles Regional Funding Measure, the City of Los Angeles’s Save our Streets Ballot Measure and the Statewide Water Bond.

Urban runoff carries billions of gallons of polluted water into creeks, rivers, lakes and ultimately coastal waters. Contaminated water containing bacteria puts public health at risk. Municipalities are subject to fines if they continue to pollute our local waterbodies and do not meet water quality regulations such as MS4 permits and TMDLs (see page 59).

Many municipalities in California lack dedicated funding for water quality improvement projects. Over the years, some communities have gone to the voters to obtain additional funding sources. Proposition O in the City of Los Angeles and Measure V in Santa Monica are examples of successful efforts to levy funds. Others, such as a 2012 effort in Contra Costa County, were not successful. There are a variety of statewide and local efforts underway to help fund these projects. A sustainable funding source for water quality improvement projects will improve water quality, increase public health projection, create jobs and increase local water supplies. Funding will most likely need to come from multiple sources. Potential funding sources are described in more detail below.

Los Angeles Regional Funding Measure

In 2013, the County of Los Angeles proposed the Clean Water Clean Beaches Measure (see Measure details under *Major Beach News* page 58). Unfortunately, the County Board of Supervisors tabled the proposal before allowing it to go to the voters for approval.

There are still efforts underway to pick-up where the County left off with the Measure. It is critical that our local decision-makers revive this effort, work out remaining concerns such as rebates for those currently implementing stormwater projects, and champion its passage.

City of Los Angeles’s Save our Streets Ballot Measure

The City of Los Angeles is considering a ballot measure for November 2014 to fund repairs to the city’s streets and sidewalks. Heal the Bay has joined a broad coalition of environmental and community

organizations to advocate for dedicated funds from the measure to be spent on implementing green streets elements in road projects throughout the city. Designing a street to better manage runoff at its source can help improve water quality, augment local water supplies and reduce flooding and safety concerns. Initial modeling shows that implementing green streets throughout the city will be a large component of meeting Clean Water Act requirements. We urge Los Angeles City leaders to include green streets into the Measure. We are specifically recommending that a minimum of 10% of revenues from the Measure be directed for implementing green streets.

Statewide Water Bond

An \$11 billion statewide Water Bond, which was slated to go to the ballot in November 2010 but was delayed, is scheduled to go on the November 2014 ballot. The proposed bond has some money dedicated to water quality improvement projects. There are current efforts in the state legislature to develop a new bond to replace the existing bond. There are a number of proposals in play, including SB 848 (Wolk) and AB 1331 (Rendon). Both have money for water quality improvement projects, among many other water-related projects and programs. Heal the Bay has advocated for any bond measure to provide significant funds to increase regional self-reliance for water supply using Integrated Regional Water Management to improve water quality and to restore the health of California’s watersheds. The legislature must approve an alternative bond in June, in order for it to take the place of the current bond on the November ballot. We urge our state leaders to pass a bond that focuses on regional self-reliance for water supply.

Proposition 218 reform and AB 2403

Heal the Bay is advocating Prop 218 and supporting AB 2403 to ensure local governments can levy fees necessary to implement water quality improvement projects.

Proposition 218 was approved by California voters in 1996 and requires a majority of property owners or a two-thirds vote of residents in a specific area to raise property-related fees. Fees for water, sewer and garbage collection were specifically exempted from these requirements.

Since Prop. 218 passed, the agencies implementing the federal Clean Water Act requirements have placed more responsibility on local governments to monitor and treat stormwater and urban runoff. Prop. 218 requirements make it extremely difficult for a municipality to get voter approval of funding for critical water quality improvement projects.

For many years, Heal the Bay has advocated for Prop. 218 reform to ease the path to stormwater funding. We support including an additional exemption in Prop. 218 for “stormwater and urban runoff management”, similar to the exemption for garbage and water.

In addition, we are supporting AB 2403 (Rendon) which simply clarifies that stormwater and recycled water intended for water service are included in the definition of “water” in the language of Proposition 218 Omnibus Implementation Act. The proposed legislation also codifies case law. In Griffith v. Pajaro Valley Water Management Agency, the court allowed the water agency to use the less-onerous protest process for approval of a groundwater supply management fee that included costs of stormwater management.

Prop. 218 reform is critical for funding stormwater and urban runoff management projects and programs and cleaning California’s polluted beaches and waterbodies. Heal the Bay will continue to lead efforts to address this issue.

Advocate full funding for California’s Beach Program

Senate Bill 482 (Kehoe), signed into law October 8, 2011, transfers the responsibility for funding the Beach Monitoring Program from the State Department of Public Health to the State Water Resources Control Board (State Board), and directs up to \$1.8 million in permit fees towards California’s Beach Program – a key element

in ensuring that beach monitoring continues in California. The full \$1.8 million is the true funding amount needed to sustain a model monitoring program in California.

While the full \$1.8 million was approved for FY 2013-2014, this funding is not guaranteed each year and needs to be approved annually. If full funding is not approved in a given year, it would seriously affect the number and frequency of beaches monitored, especially throughout the winter months. Monitoring reduction not only produces inconsistencies in beach data but most importantly, has the potential to increase public health risks for the millions of year-round beachgoers in California.

Heal the Bay and other local agencies will continue to advocate for the full Beach Program funding amount, while encouraging the State Board to prioritize the development of a year-round model monitoring program and grant eligibility criteria (see below).

Advocate federal funding for Beaches Program

In March 2014, the President’s budget proposed to eliminate funding (approximately \$10 million/annually) for EPA’s BEACH Act grant program (after providing states with funding for more than 10 years). This program is crucial in protecting the public health of beachgoers across all coastal and Great Lakes bordering states. Many state beach programs run solely on federal funds, with states mandated to implement beach monitoring programs only when federal funding is provided. With more than 90 million annual beachgoers nationwide, the loss of this funding results directly in public health protection being seriously jeopardized. The federal Beach Program provides approximately \$500,000/annually to California, which is critical in maintaining the state’s current level of coastal monitoring. This year (FY 2013-2014), California’s beach monitoring program (funded under SB 482, see details above) was approved for the full \$1.8 million. This funding is not guaranteed and subject to change based on an annual approval process, making federal funding vital in maintaining the state’s current monitoring program and crucial in upholding the existing levels of public health protection. Heal the Bay will continue to advocate for this fundamental federal funding, so the health of millions of beachgoers can continue to be protected throughout the country.

Minimum statewide monitoring requirements

Numerous inconsistencies among beach programs within California continue to send misleading messages to the public. Inconsistencies including monitoring locations (at point zero vs. 25 yards or more from an outfall), monitoring frequency, and public notification requirements that do not uniformly protect beachgoers. Now that SB 482 places control over beach funds to the State Board, there is a unique opportunity for improving beach monitoring and notification throughout the entire state. Heal the Bay is recommending that the State Board should require municipalities to meet specific monitoring and notification program criteria before being eligible for State Beach Program funding. A few of Heal the Bay’s proposed funding eligibility requirements include:

- Beach water samples should be taken in areas of highest expected bacteria levels (point-zero) and highest recreational use.
- High risk beaches (high beach use and close proximity to a potential pollution source) should be sampled three to five times per week.
- Public notification of water quality should occur immediately after sampling results are available.
- Chronically polluted or high-risk beaches with continuous bacteria exceedances should be permanently posted.
- Monitoring agencies and dischargers should be required to work together to streamline and enhance coastal monitoring for year-round public health protection. Year-round monitoring at highly populated beaches should be a priority.

Heal the Bay will continue to work with the State Board in order to produce minimum statewide monitor-

ing requirements, so California's Beach Program can achieve consistent levels of public health protection for beachgoers statewide.

Incorporate TMDL's into all Stormwater Permits

Incorporating numeric TMDL waste load allocations (WLAs) and associated compliance milestones and deadlines into all stormwater permits (i.e. municipal, industrial, construction, general) is essential to ensure that TMDLs are easily enforceable. In November 2012, the Los Angeles Regional Board voted to include all Los Angeles County issued TMDLs into the Municipal Separate Storm Sewer System (MS4) permit. Dischargers are now on the hook for immediately complying with dry weather TMDL compliance deadlines, since many dry weather deadlines have already past.

The statewide stormwater permits adopted during the last cycle of renewals primarily defer on incorporating TMDL WLAs. The stated reason for the delay is primarily lack of staff resources to translate the WLAs into permits. The State Board recently released a proposal on incorporation of TMDLs in the Caltrans permit, and Heal the Bay has expressed significant concerns with their proposed approach as it is not consistent with adopted TMDLs. Heal the Bay will continue to advocate for TMDL WLAs and compliance deadlines to be met and enforced in all stormwater permits.

Ensure implementation of MS4 permits/TMDLs

Implementation planning for the L.A. MS4 is well underway. The cities have formed 18 watershed groups to develop watershed management plans (WMPs) or enhanced watershed management plans (EWMPs). 13 cities have decided to develop their own plan or meet receiving water limits directly. WMPs are due to the Regional Board in June 2014. For those developing EWMPs, workplans are due in June and final plans are due in June 2015. These plans will set the stage for water quality improvement projects for many years to come, and it is critical that the plans are technically robust. Regional boards thought the state are assessing similar efforts and must critically review all plans submitted to ensure that they are all robust and that they make conservative assumptions in the quantitative analysis. In addition, the regional boards must ensure that the implementation schedules are expeditious, in order to ensure water quality standards are met in our waterbodies as soon as possible.

Develop and enforce sanitary survey protocol requirements

Sanitary surveys are a tool used to investigate sources of fecal contamination to a waterbody. Though typically used in drinking water programs, they provide a useful way of identifying sources of beach pollution, particularly at beaches that exceed standards with no known pollution source. Beach sanitary surveys involve collecting beach and watershed data such as the number/location of birds, bathroom location, residential septic tank information, location of stormwater outfalls, kelp and/or algae amounts, and beach water quality.

In April 2013, EPA released new marine beach sanitary survey tools, so beach managers have a technically sound and consistent approach towards investigating and identifying fecal contamination at chronically polluted beaches. Unfortunately, sanitary surveys are very costly and funding is not always readily available to implement a sanitary survey. Currently, California has no required sanitary survey protocols. However, with the EPA's new sanitary survey tools available, Heal the Bay will encourage the State Board to require sanitary surveys at chronically polluted beaches, at a minimum. This should include a thorough analysis of historical water quality data before funding these surveys.

Create Low Impact Development (LID) Ordinances

Disparity between dry and wet weather water quality in California continues to persist, demonstrating that more stormwater mitigation work needs to be completed. An important tool that will help improve beach

water quality in California is the implementation of Low Impact Development (LID) ordinances and permit requirements. LID requires builders of new developments and certain retrofits to use design techniques to retain stormwater and prevent runoff flows that often transport pollution to our beaches. Some typical LID measures include use of rain barrels, permeable pavement, cisterns, and rain gardens. Widespread use of LID also has the benefit of increasing local freshwater supplies by infiltrating stormwater to help replenish local aquifers.

Heal the Bay will continue to advocate for the statewide development of LID ordinances, to concurrently retain local freshwater supplies and mitigate the impacts of urban runoff especially during wet weather. Given the pace of new and re-development projects is somewhat slow, we urge municipalities to implement retrofit projects that incorporate LID features. Under the recently adopted Los Angeles MS4, permittees are in the process of developing LID ordinances with minimum requirements. Of note, EPA has decided to abandon a four plus year process to develop a Stormwater Rulemaking that would have likely included minimum LID requirements for all cities (see *Beach News* on page 59). We urge the EPA to revisit this decision, as requirements are prudent to ensure the widespread implementation of LID. 



Frequently Asked Questions (FAQs)

Heal the Bay is a nonprofit environmental organization 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 recreate in coastal waters. Heal the Bay's Beach Report Card (BRC) is a vital public health protection tool based on the monitoring of beaches conducted by local health agencies and dischargers.

Since the BRC was first published more than 20 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 for summer dry weather and over 300 locations year-round 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 surf zone. 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, a great deal of work has been completed 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:

- 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 bight-wide shoreline bacteria and laboratory inter-calibration studies were completed.



WEEKLY BEACH REPORT CARD APP

Beachgoers can view Heal the Bay's Beach Report Card from any Internet-enabled device at beachreportcard.org and/or download the Beach Report Card mobile app for iPhone or Android.

The new, free Beach Report Card app provides access anytime and anywhere to a comprehensive, weekly analysis of West Coast water quality.

www.beachreportcard.org
www.healthebay.org



- 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) that have been signed into law.
- 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.
- 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.

All the while, Heal the Bay’s Beach Report Card expanded its coverage from Los Angeles County to the entire western United States coastline.

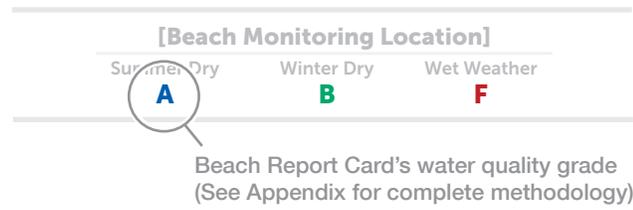
What do the grades mean to the beach user?

Recreating in waters with increased 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 rainstorm, 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 X

*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 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. Faster methods are currently being developed but presently remain too costly to implement. 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?

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 indicator bacteria present in runoff, and consequently in the surf-zone, 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.

Why is storm drain pollution so significant?

Health officials and Heal the Bay recommend that beach users never swim within 100 yards on either side of a flowing storm drain, in any coastal waters during a rainstorm, and for at least three days after a storm has ended. 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. For details see "Re-evaluating California's 3-Day Rule" on page 61 under *Beach News*.

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 is one recommendation among several that Heal the Bay has made to state officials to improve water quality monitoring and better protect public health. In fact, point zero monitoring should be a criterion for receiving state beach water quality monitoring funds. For more information see "Minimum State-wide Monitoring Requirements" on page 67 under *Recommendations for the Coming Year*.

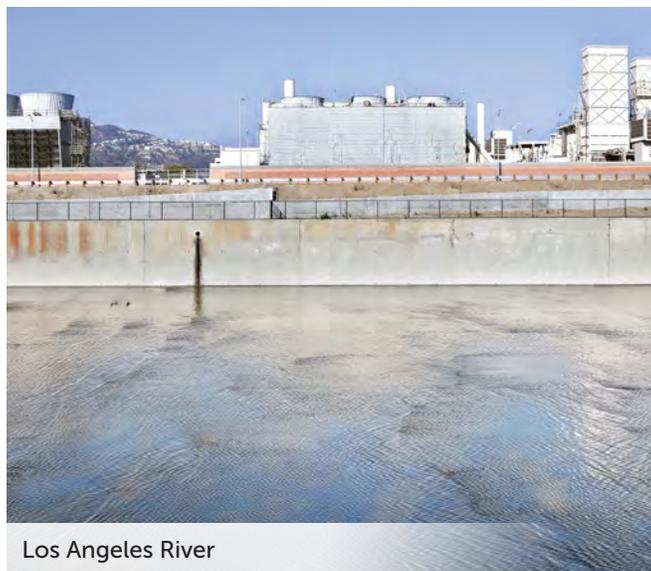
For more on storm drain beaches, see "Beach Types" on page 48.

ABOUT INDICATOR BACTERIA

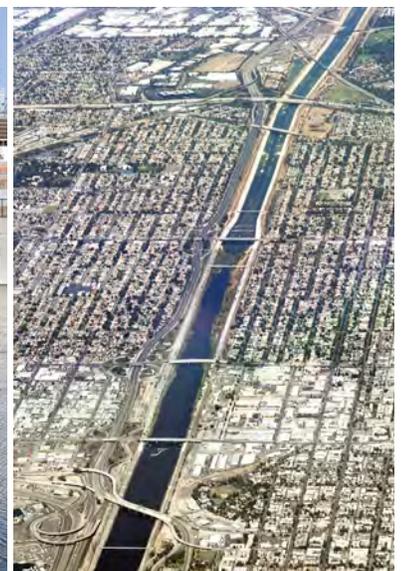
The most common types of indicator bacteria include:

- **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.



Los Angeles River



Are beaches monitored year-round?

This is the Beach Report Card's third year of grading water quality along the entire U.S. Pacific Coastline. A total of 637 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 runoff, (or in case of the Pacific Northwest beaches: 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. However, Obama's proposed budget for FY 2014 slashed funding for 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.

In California, water quality samples are collected by the appropriate 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.

The majority of Oregon and Washington water quality monitoring occurs during the summer swimming season (Memorial Day through Labor Day). This past year 15 locations in Washington State were monitored throughout the winter months.

Why not test for viruses?

A common question asked by beachgoers is: "Because viruses are thought to 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 the currently 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 currently these techniques are still relatively expensive, highly technical and not very quantitative. In addition, since human viruses are not found in high densities in ocean water and their densities are highly variable, setting standards for viruses is not currently feasible. Interference from other pollutants in runoff can make virus quantification very difficult. Also, interpretation of virus monitoring data is difficult because, unlike bacterial indicators, there are currently no data available that link health risks associated with swimming in beach water to virus densities.

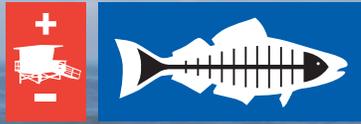
Local epidemiology studies, which include a component to identify and quantify viral pathogens, began five and a half years ago. These large scale epidemiology studies (using over 30 microbial indicators) were led by SCCWRP, UC Berkeley, Orange County Sanitation Districts, the USEPA, and Heal the Bay. The studies took place at Doheny State Beach, Avalon Beach and Surfrider Beach in Malibu.

In January 2012, the article "Using Rapid Indicators for Enterococcus to Assess the Risk of Illness after Exposure to Urban Runoff Contaminated Marine Water" (www.ncbi.nlm.nih.gov/pmc/articles/PMC3354759) to assess the risk of illness after exposure to urban runoff contaminated marine water was published in *Water Research*, based on the epidemiology study performed at Doheny State Beach between 2007-2008. In March 2014, an article summarizing Avalon's epidemiological was published in *Water Research*. See Avalon Beach's Epidemiology Study on page 61. 



Water quality typically drops dramatically during and immediately after a rainstorm, but often rebounds to its previous level within a few days.

Malibu, near Temescal Canyon



APPENDICES

APPENDIX A1-A2

Methodology

California 76

Washington and Oregon 78

APPENDIX B

2013-2014 Honor Roll

California 80

APPENDIX C1-C3

Grades by County

California 81

Washington 94

Oregon 97

APPENDIX D

Indices

Index 98

Significant Bills and Acts 99

Glossary 99

Acknowledgments and Credits 100

2013-2014 Beach Report Card

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 Figure 4-1 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 4-1.

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).

FIGURE 4-1: GRADING SYSTEM

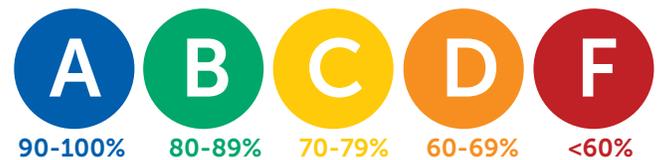


TABLE 4-1: TOTAL POINTS AVAILABLE BY COMPONENT

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

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 4-2).

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 4-3).

'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 4-4.

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.

TABLE 4-2: 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 Available Points
Enterococcus	35	80%	50
Fecal Coliform	200	40%	
Total Coliform	1000	20%	

* Colony forming units per 100 milliliters of ocean water

TABLE 4-3: 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

SD = Standard Deviation

Bold = California State Health Department standards for a single sample

N/A = Not applicable

TABLE 4-4: 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%	

Determining a Grade

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

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. 

2013-2014 Beach Report Card

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).

FIGURE 4-2: GRADING SYSTEM

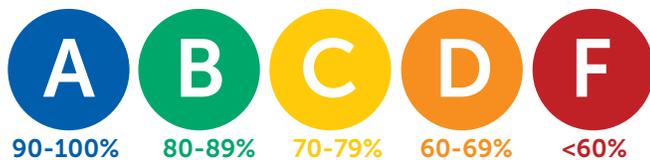


TABLE 4-5:
TOTAL POINTS AVAILABLE BY COMPONENT

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

TABLE 4-6:
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 4-7:
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

Total Points Available

As seen in Figure 4-2, 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 8-5. 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 compo-

ment 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 4-6.

'Percentage of points lost' is allocated depending upon the threshold exceeded. The penalties for threshold exceedances are presented in Table 4-7. 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. 

2013-2014 Honor Roll for California

California's year-round monitored beaches with excellent water quality all year.

San Mateo County

Sharp Park Beach, projection of San Jose Avenue
Sharp Park Beach, projection of Birch Lane
Montara State Beach, at Martini Creek
Francis Beach at the foot of the steps
Bean Hollow State Beach*

San Luis Obispo County

Morro Strand State Beach,
projection of Beachcomber Drive

Los Angeles County

Pena Creek at Las Tunas County Beach
Will Rogers State Beach at Pulga Canyon storm drain*
Venice City Beach at Windward Avenue drain
Malaga Cove, Palos Verdes Estates*
Abalone Cove Shoreline Park
Portuguese Bend Cove, Rancho Palos Verdes*
Cabrillo Beach, ocean side

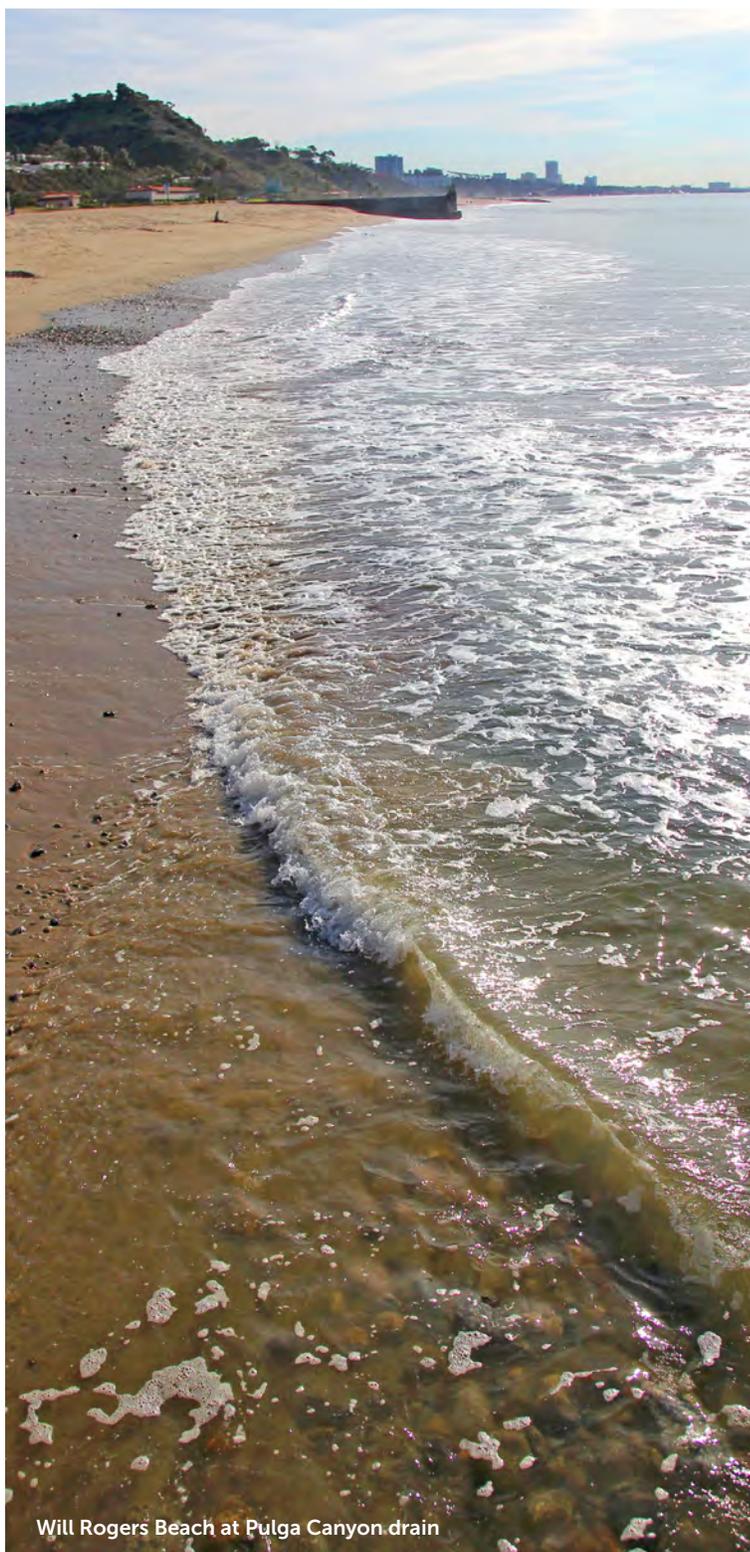
Orange County

Sunset Beach, projection of Broadway
Bolsa Chica Beach across from Reserve Flood Gates
Balboa Beach, The Wedge
Newport Bay, Park Avenue Beach*
Newport Bay, Rocky Point Beach*
Emerald Bay*
Laguna Main Beach*
Table Rock*
Laguna Lido Apartments
9th Street 1000 Steps Beach
San Clemente, Trafalgar Street Beach
San Clemente, Avenida Calafia*

San Diego County

Oceanside, Saint Malo Beach
Carlsbad, projection of Cerezo Drive
Carlsbad, Encina Creek outlet
Carlsbad, projection of Ponto Drive
Carlsbad, projection of Poinsettia Lane
Windansea Beach, projection of Playa del Norte
Point Loma, Lighthouse

*First time on Honor Roll



Will Rogers Beach at Pulga Canyon drain

2013-2014

Grades by County for California

		County "Beach Bummer" names appear in bold .		
		Summer Dry (April-Oct)	Winter Dry (Nov-Mar)	Wet Weather Year-Round
 San Diego County	Oceanside	San Luis Rey River outlet	A+	
		projection of Tyson Street	A+	A+
		projection of Forster Street	A+	A+
		500' north of Loma Alta Creek outlet	A+	A+
		Buccaneer Beach at Loma Alta Creek	A+	
		projection of Cassidy Street	A+	A
		Saint Malo Beach, downcoast from Saint Malo Road	A+	A+
	Carlsbad	projection of Tamarack Avenue	A+	A
	warm water jetty	A+		
	projection of Cerezo Drive	A+	A+	
	projection of Palomar Airport Road	A+	A	
	Encina Creek outlet	A+	A+	
	projection of Ponto Drive	A+	A+	
	projection of Poinsettia Lane	A+	A+	
	Batiquitos Lagoon outlet	A+	A	
Encinitas	Moonlight Beach, Cottonwood Creek outlet	A+	A	
	Swami's Beach, Seacliff Park	A+	A	
	San Elijo State Park, Pipes surf break	A+		
	San Elijo State Park, north end of State Park stairs	A+	A	
	San Elijo State Park, projection Liverpool Drive	A+	A	
Cardiff State Beach	San Elijo Lagoon outlet	A+	A	
	Charthouse parking, south of Kilkeny	A+	A	
	Las Olas, 100 yds. south of Charthouse	A+	A	
	Seaside State Park	A+	A	
Solana Beach	Tide Beach Park, projection Solana Vista Drive	A+	A	
	Fletcher Cove, projection Lomas Santa Fe Drive	A	A	
	Seascape Surf Beach Park	A+		
Del Mar	San Dieguito River Beach	A	A	
	projection of 15th Street	A+	A	
Torrey Pines	Los Penasquitos Lagoon outlet	A	A	
La Jolla Shores	projection of Ave De La Playa	A	A	
La Jolla	La Jolla Cove	A	A+	
	South Casa Beach	A		
	Ravina, south of Nicholson Point	A+		
Windansea Beach	projection of Playa Del Norte	A+	A+	

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



Orange County

		County "Beach Bummer" names appear in bold .		
		Summer Dry (April-Oct)	Winter Dry (Nov-Mar)	Wet Weather Year-Round
Seal Beach	projection of 1st Street	A	C	F
	projection of 8th Street	A	B	F
	Seal Beach Pier, 100 yards south of pier	A	A	F
	projection of 14th Street	A	A+	F
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+
Bolsa Chica Reserve	downcoast end of the State Beach	A	A+	F
Huntington Beach	Bluffs	A	A	F
	projection of 17th Street	A	A	F
	Jack's Snack Bar	A+	A	F
	projection of Beach Boulevard	A	A	F
	projection of Newland Street, SCE Plant	A	A	D
	projection of Magnolia Street	A	A	D
	projection of Brookhurst Street	A	C	C
Santa Ana River Mouth	A	A	A	
Newport Beach	projection of Orange Street	A+	A	A+
	projection of 52nd/53rd Street	A+	A	A+
	projection of 38th Street	A+	A	A+
Balboa Beach	projection of 15th/16th Street	A+	A	A+
	Balboa Beach Pier	A+	A	A+
	The Wedge	A+	A+	A+
Huntington Harbor	Mother's Beach	A		
	Trinidad Lane Beach	A		
	Sea Gate	A		
	Humboldt Beach	A		
	Davenport Beach	A		
	Coral Cay Beach	A+		
	11th Street Beach	A		
Newport Bay	Newport Dunes, North	A+	A+	C
	Newport Dunes, East	A	A	D
	Newport Dunes, Middle	A+	A	D
	Newport Dunes, West	A	A	D
	Bayshore Beach	A+	A+	C
	Via Genoa Beach	A+	A+	A
	Lido Yacht Club Beach	A	A	A+
	Garnet Avenue Beach	A	A	A
	Sapphire Avenue Beach	A	A+	A+
	Abalone Avenue Beach	A	A+	A+
Park Avenue Beach	A+	A+	A+	

		County "Beach Bummer" names appear in bold .			
		Summer Dry (April-Oct)	Winter Dry (Nov-Mar)	Wet Weather Year-Round	
ORANGE COUNTY					
Newport Bay (cont'd)	Onyx Avenue Beach	A	A	A+	
	Ruby Avenue Beach	A	A	C	
	Grand Canal	A	A	D	
	43rd Street Beach	A	A+	F	
	38th Street Beach	A	A	D	
	19th Street Beach	A+	A+	A	
	15th Street Beach	A+	A+	A	
	10th Street Beach	A+	A	A	
	Alvarado/ Bay Isle Beach	A	B	B	
	N Street Beach	A+	A	A+	
	Harbor Patrol Beach	A	A	C	
	Rocky Point Beach	A+	A+	A+	
Corona del Mar	Corona Del Mar, CSDOC	A+	A	A+	
	Little Corona Beach	B	B	A+	
Pelican Point		A+	A	A+	
Crystal Cove State Park	Crystal Cove, CSDOC	A	A+	A+	
	Crystal Cove (weekly)	A+	B	A+	
	Muddy Creek	A	A	A+	
	El Morro Beach	A+	A	A+	
Laguna Beach	Emerald Bay	A+	A+	A+	
	Crescent Bay Beach	A+	A	A+	
	Laguna Main Beach	A+	A+	A+	
	Laguna Hotel	A	A	B	
	Projection of Bluebird Canyon	A+	A	A	
	Victoria Beach	A+	A	A+	
	Blue Lagoon	A+	A	A+	
	Treasure Island Pier, AWMA	A+	A	A+	
	Treasure Island Sign	A	A+	C	
	Aliso Creek, 1000' north	A+	A+	D	
	Aliso Creek, outlet	A	A	F	
	Aliso Creek, 1000' south	A	A	B	
	Camel Point	A+	A+	A	
	Table Rock	A+	A+	A+	
	Laguna Lido Apartments	A+	A+	A+	
	9th Street, 1000 Steps Beach	A+	A+	A+	
	Three Arch Bay	A+	A	A+	
	Dana Point	Monarch Beach, north	A+	B	A+
		Salt Creek Beach	A	A	C
		Dana Strand Beach, AWMA	A+	A	B
Ocean Institute Beach (SERRA)		A+	A	A+	
Doheny Beach, North Beach		A	A	F	

		County "Beach Bummer" names appear in bold .		
		Summer Dry (April-Oct)	Winter Dry (Nov-Mar)	Wet Weather Year-Round
ORANGE COUNTY				
Dana Point (cont'd)	Doheny Beach, north of San Juan Creek	A	C	C
	Doheny Beach at San Juan Creek/ocean Interface	A	A	D
	1000' south of SERRA Outfall	A	A	C
	2000' south of SERRA Outfall	A	B	A
	Doheny Beach at pedestrian bridge	A	B	A+
	Doheny Beach, end of park	A	A	A
	Capistrano County Beach	A	A	A+
	North Capistrano Bay Community Beach	A	A	A
	South Capistrano Bay Community Beach	A	A	A+
San Clemente	Poche Beach	B	A	B
	projection of Avenida Pico	A	B	A+
	Lifeguard Building, north of San Clemente Pier	A	A	A+
	Trafalgar Street Beach	A+	A+	A+
	Avenida Calafia	A+	A+	A+
	Avenida Las Palmeras	A+	A	A+
Dana Point Harbor	Baby Beach, west end	A		
	Baby Beach, buoy line	C		
	Baby Beach, swim area	B		
	Baby Beach, east end	A		
	Guest dock, end, west basin	A+		
	Youth dock	A+		



Los Angeles County

Malibu	Leo Carrillo Beach at Arroyo Sequit Creek	A+	A	A+
	Nicholas Beach at San Nicholas Canyon Creek	A+	A	A+
	Encinal Canyon at El Matador State Beach	A	A+	A+
	Broad Beach at Trancas Creek mouth	A	B	A
	Zuma Beach at Zuma Creek mouth	A	A	A
	Walnut Creek, projection of Wildlife Road, private	A+	A	A+
	Unnamed Creek, projection of Zumirez Drive, Little Dume	A+	A	B
	Paradise Cove Pier at Ramirez Canyon Creek	A+	D	F
	Escondido Creek, just east of Escondido State Beach	A	A	B
	Latigo Canyon Creek mouth	A	B	B
	Solstice Canyon at Dan Blocker County Beach	A	A	B
	Unnamed Creek, adj. to public stairway at 24822 Malibu Rd	A	A	A+
	Puerco State Beach at creek mouth	A	A	A+
	Marie Canyon storm drain at Puerco Beach	A	B	C
	Malibu Point	A+	A+	A
Surfrider Beach, breach point	B	F	F	

		County "Beach Bummer" names appear in bold .		
		Summer Dry (April-Oct)	Winter Dry (Nov-Mar)	Wet Weather Year-Round
LOS ANGELES COUNTY				
Malibu (cont'd)	Malibu Pier, 50 yards east	C	C	B
	Carbon Beach at Sweetwater Canyon	A	A	A+
	Las Flores State Beach at Las Flores Creek	A	A	F
	Big Rock Beach at stairs, 19948 Pacific Coast Highway	A	C	F
	Pena Creek at Las Tunas County Beach	A+	A+	A+
	Tuna Canyon	A		
Topanga State Beach	Topanga Canyon Creek mouth	A	B	C
Castle Rock Beach	Castlerock Storm Drain	A+		
Will Rogers State Beach	Santa Ynez drain at Sunset Boulevard	A+	A	
	17200 Pacific Coast Highway, 1/4 mile east of Sunset drain	A	A+	B
	Bel Air Bay Club drain near fence	A+	A+	B
	Pulga Canyon storm drain	A+	A+	A+
	Temescal Canyon drain	A	A+	C
	Santa Monica Canyon drain	A	B	F
Santa Monica Beach	Montana Avenue drain	A	A	D
	Wilshire Boulevard drain	A	C	F
	Santa Monica Municipal Pier	D	F	F
	Pico/Kenter storm drain	A	A	F
	Strand Street, in front of the restrooms	A+	B	B
	Ocean Park Beach at Ashland Avenue drain	A	A	D
Venice City Beach	Rose Avenue storm drain	A+	A	A
	Brooks Avenue drain	A	A	F
	Windward Avenue drain	A+	A+	A+
	Venice Fishing Pier, 50 yards south	A	A	A+
	Topsail Street	A	A	C
Marina del Rey	Mother's Beach, playground area	A	F	F
	Mother's Beach, lifeguard tower	B	F	F
	Mother's Beach, between Tower and Boat dock	F	F	F
Dockweiler State Beach	Ballona Creek mouth	A	A	F
	Culver Boulevard drain	A	A	F
	North Westchester storm drain	A	A	A+
	World Way, south of D&W jetty	A+	A+	B
	Imperial Highway drain	A	B	F
	Hyperion Treatment Plant, One Mile Outfall	A+	A	A
	Grand Avenue drain	A	A	A
Manhattan Beach	40th Street	A	A+	D
	28th Street drain	A	A	F
	Manhattan Beach Pier drain	A	A	B
Hermosa Beach	26th Street	A	A+	A+
	Hermosa Beach Pier, 50 yards south	A	A	A+
	Herondo Street storm drain, in front of drain	A	B	F

		County "Beach Bummer" names appear in bold .		
		Summer Dry (April-Oct)	Winter Dry (Nov-Mar)	Wet Weather Year-Round
LOS ANGELES COUNTY				
Redondo Beach	Redondo Municipal Pier, 100 yards south	A	C	C
	Sapphire Street	A	A	A+
	Topaz Street, north of jetty	A	B	A+
Torrance Beach	Avenue I drain	A	A+	A+
Palos Verdes Peninsula	Malaga Cove, Palos Verdes Estates	A+	A+	A+
	Malaga Cove, Palos Verdes Estates (weekly)	A+	A+	A+
	Palos Verdes, Bluff Cove, Palos Verdes Estates	A	A+	A+
	Long Point, Rancho Palos Verdes	A+	A	B
	Abalone Cove Shoreline Park	A+	A+	A+
	Portuguese Bend Cove, Rancho Palos Verdes	A+	A+	A+
San Pedro	Royal Palms State Beach	A	A	A
	Wilder Annex, San Pedro	A+	A	A+
Cabrillo Beach	ocean side	A+	A+	A+
	harborside at restrooms	F	D	F
	harborside at boat launch	D	C	F
Long Beach	projection of 5th Place	B	B	F
	projection of 10th Place	B	A	F
	projection of Molino Avenue	B	A	F
	projection of Coronado Avenue	B	A	F
	Belmont Pier, west side	B	A	F
	projection of Prospect Avenue	B	A	F
	projection of Granada Avenue	C	A	F
Alamitos Bay	2nd Street bridge & Bayshore	A	A	F
	shore float	A	A	F
	Mother's Beach, north end	A	A	F
	56th Place on bay side	A	A	F
Long Beach	projection of 55th Place	C	A	F
	projection of 72nd Place	B	A	F
	Colorado Lagoon-north	A	A+	F
	Colorado Lagoon-south	A	A	F
Avalon Beach	east of the Casino Arch at the steps	C		
	100 feet west of the Green Pleasure Pier	B		
	50 feet west of the Green Pleasure Pier	B		
	50 feet east of the Green Pleasure Pier	C		
	100 feet east of the Green Pleasure Pier	A		



Ventura County

		County "Beach Bummer" names appear in bold .		
		Summer Dry (April-Oct)	Winter Dry (Nov-Mar)	Wet Weather Year-Round
Rincon Beach	25 yds. south of the creek mouth	A+	A	B
	100 yds. south of the creek mouth	A+		
Mussel Shoals Beach	south of pier	A+		
Oil Piers Beach	south of drain, bottom of the wood staircase	A+	A	A+
Hobson County Park	base of stairs to the beach	A+		
Faria County Park	south of drain at north end of park	A	A	A+
Mandos Cove	south of drain	A+		
Solimar Beach	south end of east gate access road	A+	A	A+
Emma Wood State Beach	50 yards south of first drain	A+	A	A+
Surfer's Point at Seaside	end of access path via wooden gate	A+	A	B
Promenade Park	Figuroa Street	A+	A+	A
	Redwood Apartments	A+		
	Holiday Inn, south of drain at California Street	A		
San Buenaventura Beach	south of drain at Kalorama Street	A		
	south of drain at San Jon Road	A+	A	A+
	south of drain at Dover Lane	A+		
	south of drain at Weymouth Lane	A+		
Ventura Harbor outlet	Marina Park, beach at north end of playground	A+		
	Peninsula Beach, beach area north of South Jetty	A+		
	Surfer's Knoll, beach adjacent to parking lot	A	A+	A+
Oxnard Beach	5th Street, south of drain	A+		
	Outrigger Way, south of drain	A+		
	Oxnard Beach Park at Falkirk Avenue, south of drain	A+		
	Oxnard Beach Park at Starfish Drive, south of drain	A+		
Hollywood Beach	La Crescenta Street, south of drain	A+		
	Los Robles Street, south of drain	A+		
Channel Islands Harbor	Hobie Beach Lakshore Drive	A	A	A
	Beach Park at south end of Victoria Avenue	A	B	A
Silverstrand	San Nicholas Avenue, south of jetty	A+		
	Santa Paula Drive, south of drain	A+		
	Sawtelle Avenue, south of drain	A+		
Port Hueneme Beach Park	50 yds. north of the Pier	A		
Ormond Beach	J Street drain, 50 yds. south of drain	A	A	A+
	Oxnard Industrial drain, 50 yds. north of drain	A+		
	Arnold Road	A+		
Point Mugu Beach	adjacent to parking lot entry	A+		
	Thornhill Broome Beach, adjacent to parking lot entry	A+		
Sycamore Cove Beach	50 yds. south of the creek mouth	A+		
County Line Beach	50 yds. south of the creek mouth	A+		
Staircase Beach	bottom of staircase	A+		



Santa Barbara County

		County "Beach Bummer" names appear in bold .		
		Summer Dry (April-Oct)	Winter Dry (Nov-Mar)	Wet Weather Year-Round
Guadalupe Dunes		A	A+	A+
Jalama Beach		A	A+	A+
Gaviota State Beach		A	A	A+
Refugio State Beach		A+	A	B
El Capitan State Beach		A	A	A+
Sands	Coal Oil Point	A	A	B
Goleta Beach		A	B	B
Hope Ranch Beach		A	A	F
Arroyo Burro Beach		A	C	C
Leadbetter Beach		A	B	A+
East Beach	Mission Creek	A	B	F
	Sycamore Creek	A	A	A
Butterfly Beach		A	A	A+
Hammond's Beach		A+	A	A
Summerland Beach		A	A	A+
Carpinteria State Beach		A	B	B



San Luis Obispo County

San Simeon	Pico Avenue	A	A	A+
Cayucos State Beach	halfway between Cayucos Creek and the Pier	A	A+	A+
	downcoast of the pier	A	A+	A+
	Studio Drive parking lot near Old Creek	A	A	A+
Morro Strand State Beach	projection of Beachcomber Drive	A+	A+	A+
Morro Bay City Beach	projection of Atascadero	A+	A	A+
	Morro Creek, south side	A+		A+
	75 feet north of main parking lot	A	A	A+
Montana De Oro State Park	Hazard Canyon	A	A	A+
Olde Port Beach	Harford Beach, north	C	B	B
Avila Beach	projection of San Juan Street	A	A	B
	projection of San Luis Street	A	A	A
Pismo Beach	Sewers at Silver Shoals Drive	A	A+	A+
	projection of Wadsworth Street	A	A+	A+
	50 feet south of pier	C	A	A+
	projection of Ocean View	A	A+	A+
	330 yards north of Pier Avenue	A	A+	A+
	projection of Pier Avenue	A	A+	C
	571 yards south of Pier Avenue, end of Strand Way	A	A+	A+

		County "Beach Bummer" names appear in bold .		
		Summer Dry (April-Oct)	Winter Dry (Nov-Mar)	Wet Weather Year-Round
	Monterey County			
Monterey Bay	Monterey Beach Hotel, downcoast of Robert's Lake outlet	A		
	Monterey Municipal Beach at the commercial wharf	B		
	San Carlos Beach at San Carlos Beach Park	A		
	Lover's Point Park, projection of 16th Street	C		
	Asilomar State Beach, projection of Arena Avenue	A		
	Spanish Bay, Moss Beach, end of 17 Mile Drive	A		
	Stillwater Cove at Beach & Tennis Club	D		
Carmel	City Beach, projection of Ocean Avenue, west end	A		
	Santa Cruz County			
Santa Cruz	Natural Bridges State Beach	A	A	A+
	Cowell Beach at the Stairs	A	A	A+
	Cowell Beach Lifeguard Tower 1	A	A+	C
	Cowell Beach at wharf	F		A+
	Santa Cruz Main Beach at the Boardwalk	A	B	A
	Santa Cruz Main Beach at the San Lorenzo River	A	A	A+
	Seabright Beach	A+	A	A
	Twin Lakes Beach	A+	A	A+
Capitola	Capitola Beach	C	A	F
	at Jetty	A	A+	A+
	New Brighton Beach	A+	A+	A
Aptos	Seacliff State Beach	A	A+	A+
	Rio Del Mar Beach	A	A	A
	San Mateo County			
Pacifica	Sharp Park Beach, projection of San Jose Avenue	A+	A+	A+
	Sharp Park Beach, projection of Birch Lane	A+	A+	A+
	Rockaway Beach at Calera Creek	A+	A	A+
	Linda Mar Beach at San Pedro Creek	A	A+	D
Montara State Beach	Martini Creek	A+	A+	A+
Fitzgerald Marine Reserve	San Vicente Creek	A	A	B
Pillar Point	#8 Mavericks Beach, Westpoint Avenue	A	A	D
	Harbor, end of Westpoint Avenue #7	C	B	D
Half Moon Bay	Surfer's Beach, south end of riprap	A	A+	B
	Roosevelt Beach, south end of parking lot	A+	A	A
	Dunes Beach	A+	A	A+
	Venice Beach at Frenchman's Creek	A	B	A
	Francis Beach at the foot of the steps	A+	A+	A+

		County "Beach Bummer" names appear in bold .		
		Summer Dry (April-Oct)	Winter Dry (Nov-Mar)	Wet Weather Year-Round
SAN MATEO COUNTY				
San Gregorio State Beach	San Gregorio Creek	A+		
Pomponio State Beach	Pomponio Creek	A+	A	A
Pescadero State Beach	Pescadero Creek	A+	A+	A
South Coast	Bean Hollow State Beach	A+	A+	A+
	Gazos Beach at Gazos Creek	A	A+	A+
Bayside	Oyster Point	A	A	D
	Coyote Point	A	B	F
	Marina Lagoon, Aquatic Park	F	F	F
	Marina Lagoon, Lakeshore Park behind Rec Center	F	F	F
	Kiteboard Beach	C	A	D



Alameda County

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



San Francisco County

Aquatic Park Beach	Hyde Street Pier, projection of Larkin Street	A	A	A+
	211 Station	A	C	A
Crissy Field Beach	East, 202.4 Station	A	D	A
	West 202.5 station	A	A	A
Baker Beach	East, Ocean #15	A	A	A
	Lobos Creek	C	C	B
	West, Ocean #16	A	A	A
China Beach	end of Sea Cliff Avenue	A	A+	A+
Ocean Beach	projection of Balboa Avenue	A+	A+	A
	projection of Lincoln Way	A+	A+	D
	projection of Sloat Boulevard	A+	A+	C
Candlestick Point	Jackrabbit Beach	A+	A	C
	Windsurfer Circle	C	F	F
	Sunnydale Cove	B	A	C

		County "Beach Bummer" names appear in bold .		
		Summer Dry (April-Oct)	Winter Dry (Nov-Mar)	Wet Weather Year-Round
	Contra Costa County			
Keller Beach	North Beach	A		A+
	South Beach	A		A
	Marin County			
Tomales Bay	Dillon Beach	A+		
	Lawson's Landing	A		
	Miller Park	A		
	Heart's Desire	A		
	Shell Beach	A		
	Chicken Ranch Beach at Creek	A		
	Millerton Point	A		
Drake's Bay	Drake's Beach	A+		
	Limantour Beach	A		
Bolinas Bay	Bolinas Beach, Wharf Road	A		
	Stinson Beach, North	A+		
	Stinson Beach, Central	A+		
	Stinson Beach, South	A		
Muir Beach	North	A		
	Central	A+		
	South	A+		
Rodeo Beach	North	A		
	Central	A+		
	South	A+		
Baker Beach	Horseshoe Cove SW	A+		
	Horseshoe Cove NW	A		
	Horseshoe Cove NE	A		
Schoonmaker Beach		A		
China Camp		A		
McNears Beach		B		
	Sonoma County			
Gualala Regional Park Beach		A+		
Black Point Beach		A+		
Stillwater Cove Regional Park Beach		A		
Goat Rock State Park Beach		A+		
Salmon Creek State Park Beach		A+		
Campbell Cove State Park Beach		A		
Doran Regional Park Beach		A		

		County "Beach Bummer" names appear in bold .		
		Summer Dry (April-Oct)	Winter Dry (Nov-Mar)	Wet Weather Year-Round
	Mendocino County			
MacKerricher State Park	Virgin Creek	A+		
Pudding Creek Ocean Outlet		A+		
Hare Creek		A+		
Caspar Beach	Caspar Creek	A		
Big River	near PCH	A+		
Van Damme State Park	Little River	A		
	Humboldt County			
Trinidad State Beach	near Mill Creek	A		
Luffenholtz Beach	near Luffenholtz Creek	A		
Moonstone County Park	Little River State Beach	B		
Clam Beach County Park	near Strawberry Creek	D		
Mad River Mouth	north	A+		
	Del Norte County			
Crescent City	Battery Point Lighthouse	A+	A+	A



2013-2014

Grades by County for Washington

Whatcom County		Summer Dry	Wet Weather
Bellingham Marine Park	outer	A	A+
Birch Bay County Park	mid	A+	D
	north	A	F
	south	A+	C
Larrabee State Park	mid	A	F
Wildcat Cove	south	A	B
	west	C	D
Little Squalicum Park	east	F	C
	mid	F	D
	west	F	F

Snohomish County

Edmonds	mid	A	A+
Underwater Park	north	A+	A+
	south	A+	A+
Howarth Park	mid	A+	A+
	north	A+	A+
	south	A	A+
Kayak Point County Park	mid	A	A+
	north	A	A+
	south	A+	A+
Marina Beach Edmonds (No Dogs)	mid	A	A+
	north	A	A+
	south	B	A+
Mukilteo Lighthouse Park	mid	A	A+
	north	C	A
	south	A	A+
Picnic Point County Park	mid	A+	A+
	north	A+	A+
	south	A+	A+

Thurston County		Summer Dry	Wet Weather
Burfoot County Park	mid	A	A+
	north	B	A+
	south	A	B

Pierce County

Browns Point	Park	A+	A+
Lighthouse Park	east	A	A+
	south	A	A+
Chambers Creek	0.3 miles north	A+	C
	1 mile north	A+	A+
	1.5 miles north	A+	A+
Dash Point County Park	east	A	A+
	east of pier	C	A+
	west of pier	B	A+
Kopachuck State Park	mid	A+	A+
	north	A+	A+
	south	A	A+
Owens Beach	mid	A+	A+
Point Defiance Park	north	A+	A+
	south	A+	A+
Purdy Sandspit County Park	east	A+	F
	mid	A+	F
	west	A+	A
Sunnyside Beach Park	mid	A+	A+
	north	A+	A+
	south	A+	A+
Titlow Park	mid	A+	F
	north	A	A+
	south	A+	C
Waterfront Dock	mid	A+	D
Ruston Way	north	C	C
	south	A	A+

Washington cont.'d

Mason County		Summer Dry	Wet Weather
Allyn Waterfront Park	mid	F	F
	north	F	F
	south	B	F
Potlatch State Park	mid	A+	C
	north	F	C
	south	A	F
Twanoh State Park	point	A+	A+
	west of dock	B	A+
	west of point	A	A+
Walker County Park	east	A+	A
	mid	A+	A+
	west	A	A+
Kitsap County			
Arness County Park	mid	A+	A+
	north	C	A+
	south	A	A+
Eagle Harbor Waterfront Park	east	A+	B
	mid	A	C
Evergreen Park	west	A+	C
	mid	A	A+
	north	A+	A+
Fay Bainbridge State Park	south	A+	A+
	mid	A+	A+
	north	A+	A+
Illahee State Park	south	A+	A+
	mid	A+	A+
	north	A+	A+
Indianola Dock	east	A	A+
	mid	A+	A+
	west	A	A+
Lions Field	mid	A	A
	north	A	A+
	south	A	A+

KITSAP COUNTY		Summer Dry	Wet Weather
Point No Point Lighthouse Park	mid	A+	A+
	north	A+	A+
	south	A+	A+
Pomeroy Park Manchester Beach	mid	D	A
	north	F	F
	south	D	A
Scenic Beach State Park	east	A+	A+
	mid	A+	A+
	west	A	A+
Seabeck Conference Center Beach	east	A+	A+
	mid	A+	A+
	west	A+	A+
Silverdale County Park	east	A	B
	mid	A	C
	west	A	A

King County

Alki Beach Park	mid	A+	A+
	north	A+	B
	south	A+	A+
Carkeek Park	mid	A+	A+
	north	A+	A+
	south	A+	F
Golden Gardens	mid	A+	D
	north	A+	B
	south	C	A+
Lincoln Park	mid	A+	A+
	north	A+	A+
	south	A	D
Redondo County Park	mid	A+	F
	north	B	D
	south	A+	F
Saltwater State Park	mid	A	A+
	north	A+	D
	south	A	D
Seahurst County Park	mid	A+	A+
	north	A+	D
	south	A+	A+

Washington cont.'d

Jefferson County		Summer Dry	Wet Weather
Fort Worden State Park	mid	A+	A
	north	A+	A+
	south	A+	A+
Island County			
Freeland County Park Holmes Harbor	east	F	A+
	mid	D	A+
	west	D	A+
Oak Harbor City Beach Park	east	A	A+
	mid	A	F
	west	C	B
Oak Harbor Lagoon	mid	A	A+
	north west	A+	A+
	south east	A+	A+
Grays Harbor County			
Westhaven State Park Half Moon Bay	mid	A+	A+
	north	A+	A+
	south	A+	A+
Westhaven State Park South Jetty	mid	A+	A+
	north	A+	A+
	south	A+	A+
Westport - The Groynes	east	A+	A+
	mid	A+	A+
	west	A+	A+

Clallam County		Summer Dry	Winter Dry	Wet Weather
Cline Spit County Park	mid	A		A+
	north	A		A+
	south	A+		A+
Dakwas Park Beach Neah Bay	east	A+	A	A+
	mid	A	F	A
	west	A+	A	C
Front Street Beach East	mid	A+	A+	A+
	Kal Chate St.	A+	A+	A+
	Pine Street	A+	A+	A
Hobuck Beach	mid south	A+	A+	A+
	north	A	A+	A+
	south	A	A+	A+
Hollywood Beach	east	A+		A+
	mid	A		A+
	west	A		A+
Salt Creek Recreation Area	mid	A		B
	north	A		F
	south	A		A+
Sooes Beach	mid	A+	A+	A+
	north	A+	A+	A+
	south	A+	A+	A+
Third Beach Neah Bay	east	A+	A+	A+
	mid	A+	A+	A+
	west	A+	A+	A+
				

2013-2014

Grades by County for Oregon

Clatsop County		Summer Dry	Wet Weather
Cannon Beach	@ Ecola Creek mouth (2nd Avenue)	A	D
	proj. of Gower Avenue storm outflow	A	F
Seaside Beach	at 12th Avenue	A	D
	at Broadway turn around	A+	A+
	at U Avenue	A+	A+
Tolovana State Park Beach	@ Chisana Creek	A+	A+
	50m north of Chisana Creek	A	A+
	50m south of Chisana Creek	A+	A+
Tillamook County			
Short Sand Beach (Oswald State Park)	@ Short Sand Creek	B	A+
	middle	A+	A+
	north end	A	A+
			



Indices

1-10

3-Day Rule 9, 55, 61, 72

A

AB538 50, 71, 101

AB2403 65, 66

Abalone Cove 80, 87

Alameda County 13, 35, 38, 91

Aptos Beach 51

Aquatic Park 10, 12, 34, 35, 36, 51, 91

Arroyo Burro Beach 11, 29, 51, 89

Avalon, Catalina 4, 11, 25, 26, 51, 55, 61, 62, 63, 73, 87

B

Baby Beach, Dana Point 18, 48, 51, 85

Baker Beach 11, 35, 36, 37, 39, 91, 92

Balboa Beach 80, 83, 91, 98

Ballona Creek 53, 86

Batiquitos Lagoon 17, 81

Battery Point Lighthouse 13, 41, 93

BEACH Act (federal) 42, 43, 55, 57, 67, 73, 101

Beach Program (California) 57, 58

Beach BUMMER 9, 10, 11, 12, 13, 19, 22, 23, 24, 25, 26, 31, 32, 34, 35, 36, 41, 49, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93

Bean Hollow State Beach 80, 91

Bird Sanctuary 13, 38, 91

Blue Lagoon Beach 20

Bluff Cove, Palos Verdes 27

Bolinas Beach 39, 92

Bolsa Chica 80, 83

C

Cabrillo Beach 8, 10, 11, 12, 22, 23, 48, 51, 53, 59, 70, 80, 87

Cameo Shores Beach 20

Candlestick Point 13, 36, 91

Cannon Beach 42, 97

Capistrano County Beach 51, 85

Capitola Beach 11, 32, 51, 90

Carlsbad 80, 81

Carmel 31, 90

Carpinteria 29, 89

Catalina Island 4, 11, 25, 61

Chambers Creek Regional Park 44

Clallam County 43, 44, 45, 96

Clam Beach County Park 11, 13, 41, 93

Clatsop County 42, 97

Clean Beach Initiative (CBI) 5, 10, 23, 24, 26, 31, 33, 34, 50, 51, 71, 101

Clean Water Act 66, 101

Clean Water Clean Beaches Measure 58, 65, 98

climate change 55

Colorado Lagoon 11, 26, 87

Contra Costa County 13, 35, 38, 65, 92

Coronado 17, 51, 56, 82, 87

Cowell Beach 9, 11, 12, 13, 32, 33, 90

Crab Cove 13, 38, 91

Crissy Field Beach 36, 91

Crown Beach 13, 38, 91

D

Dakwas Park Beach 44

Dana Point 11, 18, 19, 20, 48, 63, 84, 85

Davenport Beach 20, 83

Del Mar 56, 81, 84, 90

Del Norte County 13, 41, 93

Dillon Beach 39, 92

Dockweiler Beach 51, 52

Doheny 11, 18, 19, 20, 60, 63, 73, 84, 85

E

East Beach 29, 51, 89

e. coli 72, 101

El Segundo 52, 98

Emerald Bay 80, 84

Enterococcus 19, 42, 43, 72, 73, 76, 77, 78

Environmental Protection Agency 43, 50, 55, 56, 101

EPA 55, 56, 57, 60, 61, 67, 68, 69, 73, 79, 101

Escondido 11, 23, 85

F

Fitzgerald Marine Reserve 51, 90

Fort Funston 37

Francis Beach 80, 90

Freeland County Park 43, 96

G

Grays Harbor County 44, 96

H

Hermosa Beach 51, 86

Hobie Beach 28, 51, 88

Honor Roll 5, 8, 9, 75, 80

Hope Ranch Beach 29, 89

Humboldt Beach 20, 83

Humboldt County 13, 41, 48, 93, 102

Huntington Beach 18, 20, 60, 83

Huntington Harbour Channel 20

Hyperion Sewage Treatment Plant 21

I

Imperial Beach 17, 51, 82

Island County 43, 44, 96

J

Jackrabbit Beach 37, 91

Jefferson County 44, 96

K

Keller Beach 38, 92

King County 44, 45, 95

Kiteboard Beach 35, 91

Kitsap County 43, 44, 45, 95

L

Laguna Beach 20, 29, 51, 80, 84

Lakeshore Park 10, 12, 34, 35, 91

Las Tunas County Beach 23, 80, 86

LAX 56

Loma Alta Creek Lagoon 51

Long Beach 11, 21, 26, 27, 55, 56, 60, 87, 102

Los Amigos 24

Los Angeles Regional Funding Measure 65

Los Angeles River 26, 72

Lovers Point 31, 51

Lover's Point Park 31, 90

Low Impact Development (LID) 56, 60, 65, 68, 69, 101

M

Main Beach 33, 51, 80, 84, 90

Malaga Cove 9, 27, 80, 87

Malibu 11, 22, 23, 27, 51, 52, 53, 55, 62, 73, 74, 85, 86

Manchester Beach 43, 95

Manhattan Beach 46, 51, 53, 86

Marie Canyon 11, 23, 85, 98

Marina del Rey 10, 11, 12, 22, 24, 48, 53, 86

Marina Lagoon 10, 12, 34, 91

Marin County 8, 13, 39, 92, 102

Marine Park 24, 94

Mariposa Beach 20

Mason County 44, 45, 95

McNears Beach 39, 92

Measure V 23, 24, 65

Mendocino County 13, 40, 51, 93, 102

Methodology 5, 75, 76, 78

Mission Bay 11, 51, 82

Mission Creek 29, 51, 89

Montar State Beach 9, 51, 80, 90

Monterey County 6, 11, 12, 31, 51, 90, 102

Moonlight Beach 51, 81

Morro Bay 7, 89

Morro Strand State Beach 80, 89

Mother's Beach 10, 12, 22, 24, 48, 51, 53, 83, 86, 87

MS4 55, 59, 60, 65, 68, 69, 101

Muir Beach 39, 92

Municipal Separate Storm Sewer System (MS4 55, 59, 60, 65, 68, 69, 101

N

National Oceanic and Atmospheric Administration's Climate Prediction Center 55

Neary Lagoon 33

Newport Beach 4, 8, 20, 60, 80, 83

Newport Dunes 20, 83

O

Ocean Beach 17, 37, 63, 82, 91

Oceanside 16, 80, 81

Olde Port 30, 89

Orange County 6, 10, 18, 19, 20, 51, 60, 61, 72, 73, 76, 77, 80, 83, 102

Oregon 5, 6, 42, 57, 70, 71, 72, 73, 75, 78, 79, 97, 102

Ormond Beach 28, 88

Oxnard 56, 88

Ozone Park 24

P

Pacifica State Beach 51

Palos Verdes 9, 27, 53, 80, 87

Paradise Cove 23, 51, 53, 85

Penmar Park 24

Picnic Point 43, 94

Pierce County 44, 45, 94

Pillar Point 11, 34, 35, 90

Pismo Beach 30, 51, 89

Poche Beach 11, 19, 20, 85

Point Loma 80, 82

point zero 18, 21, 22, 28, 29, 30, 31, 48, 58, 67, 72, 76, 79, 101

Port Angeles Harbor 45

Portofino Cove 20

Portuguese Bend Cove 80, 87

Port Washington Narrows 45

precipitation 8, 55, 71

Predictive Beach Modeling 51

Promenade Park Beach 51



Indices

Proposition 218	65, 66	Figure 1-1:	Overall California Grades	7
Proposition O.	50, 65, 71, 101	Figure 1-2:	California Winter Rainfall	7
Pudding Creek Beach	51	Figure 1-3:	Southern California Grades	9
Purdy Sandpit State Park	45	Figure 1-4:	Beach Bummers	11
R		Figure 2-1:	San Diego County Beaches	16
rain/rainfall	8, 9, 17, 29, 37, 47, 55, 61, 69, 71, 72, 78	Figure 2-2:	Orange County Beaches	18
Rapid Testing Methods	55, 60	Figure 2-3:	Los Angeles County Beaches	22
Redondo Beach	11, 21, 51, 87, 98, 102	Figure 2-4:	Santa Monica Bay Beaches	22
Rincon	28, 88	Figure 2-5:	Summer Grades for Malibu through Santa Monica	23
Rodeo Beach	39, 92	Figure 2-6:	Mother's Beach, Marina Del Rey	24
S		Figure 2-7:	Avalon Beach, Catalina Island	25
Sail and Paddle Park Beach	45	Figure 2-8:	Colorado Lagoon, Long Beach	26
San Clemente	19, 20, 80, 85	Figure 2-9:	Long Beach City Beaches	27
San Diego County	10, 11, 16, 17, 18, 61, 63, 73, 80, 81, 102	Figure 2-10:	Los Angeles County (without Long Beach)	27
San Francisco	7, 8, 11, 13, 35, 36, 37, 48, 51, 55, 91, 102	Figure 2-11:	Cowell Beach Grades	33
San Juan Capistrano	19	Figure 2-12:	San Francisco Ocean and Bay Side Water Quality	35
San Luis Obispo County	12, 30, 80, 89, 102	Figure 2-13:	San Francisco Bay Area Beaches	35
San Mateo County	8, 9, 10, 11, 12, 34, 35, 51, 80, 90, 102	Figure 2-14:	San Francisco's Candlestick Point Grades	37
San Simeon	30, 89	Table 3-1:	Grades For Popular Enclosed Beaches	48
Santa Ana	7, 20, 56, 83	Figure 3-1:	Good / Poor Grades by Time Period & Beach Type	49
Santa Barbara/Santa Barbara County	7, 9, 12, 28, 29, 50, 51, 56, 89, 99, 102	Table 3-2:	Major CBI Projects	51
Santa Cruz/Santa Cruz County	7, 11, 12, 13, 32, 33, 48, 51, 90, 99, 102	Table 3-3:	L.A. Co. Beaches with More than Ten Exceedance Days	53
Santa Monica	3, 7, 10, 11, 12, 21, 22, 23, 24, 48, 50, 51, 53, 64, 65, 70, 71, 72, 76, 86, 101, 104	Figure 3-3:	Southern California Winter Rainfall	56
Santa Monica Pier	7, 10, 11, 23, 51	Figure 3-4:	Long Beach Grades and Rainfall Comparison	56
Santa Monica Urban Runoff Recycling Facility	23, 71, 101	California Methodology	76	
Santa Rosa	7	Oregon / Washington Methodology	78	
Save Our Streets	65			
Seal Beach	18, 83			
Seaside Beach	42, 97			
Sharp Park Beach	34, 80, 90			
Short Sand Beach	42, 97			
Sinclair Inlet	45			
Snohomish County	43, 45, 94			
Solstice Canyon	11, 23, 58, 85			
Sonoma County	13, 40, 92, 102			
Source Identification Protocol Project (SIPP)	32, 50, 51, 101			
Southern California Coastal Water Research Project	20, 50, 63, 70, 76, 77, 102			
Stanford University	25, 31, 32, 50, 51			
Stillwater Cove	10, 11, 12, 31, 90, 92			
Stinson Beach	39, 92			
Sunnyvale Cove	37			
Sunset Beach	80, 83			
Surfer Health Effects Study	55, 63			
Surfrider Beach	11, 23, 51, 53, 63, 73, 85			
T				
Table Rock	80, 84			
Temescal	23, 74, 86			
Thurston County	45, 94			
Tijuana	11, 16, 17, 82			
Tillamook County	42, 97			
Topanga	11, 23, 53, 54, 86			
Total Maximum Daily Loads (TMDL)	5, 22, 23, 25, 48, 53, 59, 60, 63, 65, 68, 101			
Tourmaline Beach	63			
U				
UC Los Angeles	9, 47, 55, 56, 61, 101			
UC Berkeley	63			
UC Santa Barbara	50			
V				
Venice Beach	9, 21, 51, 90			
Ventura County	12, 28, 51, 53, 70, 88, 102			
W				
Washington	5, 6, 43, 44, 45, 70, 71, 72, 73, 75, 78, 79, 94, 95, 96, 102			
Water Bond	65, 66			
Wedge, Newport Beach	4, 8, 80, 83			
Westhaven State Park	44, 96			
Whatcom County	44, 45, 73, 94			
Will Rogers Beach	8, 11, 23, 27, 51, 53, 80, 86			
Windansea Beach	80, 81			
Windsurfer Beach	11, 13, 35, 36, 37, 91			



Indices

Glossary

ARRA	American Recovery and Reinvestment Act
BAV	Beach Action Value
BEACH Act	National Beach Guidance and Performance Criteria for Recreational Waters
BMP	best management practices
BRC	Beach Report Card
CDPH.....	California Department of Public Health
CBI.....	Clean Beach Initiative
CDO.....	Cease and Desist Order
CSS	combined sewer and storm drain system
CSD	combined sewer discharges
CSO	combined sewer overflows
CWA.....	Clean Water Act
DEH	Division of Environmental Health
DPH	Department of Public Health
E. coli	Escherichia coli
EMD.....	Environmental Monitoring Division (L.A.)
EPA	Environmental Protection Agency
FIB	fecal indicator bacteria
GI illness.....	Gastrointestinal Illness
LFD	Low Flow Diversion
LID	Low Impact Development
MOU	Memorandum of Understanding
MS4	Municipal Separate Storm Sewer System
NOV	Notice of Violation
NGO.....	Non-Government Agency
NSE.....	Natural Source Exclusion
OWTS	Onsite Wastewater Treatment System
point zero	location where outfall meets the ocean
QMRA	Quantitative Microbial Risk Assessment
Regional Board	Regional Water Quality Control Board
SEP.....	Supplemental Environmental Projects (L.A.)
SIPP.....	Source Identification Protocol Project
SCCWRP	Southern California Coastal Water Resources Project
SMURRF	Santa Monica Urban Runoff Recycling Facility
SPF	Sun Protection Factor
State Board	State Water Resources Control Board
SSO	Sanitary Sewer Overflows
TMDL	Total Maximum Daily Load
UCLA	University of California, Los Angeles
UCB	University of California, Berkeley
USEPA	United States Environmental Protection Agency
wave wash	monitored location where runoff meets surf

Significant Bills and Acts

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.

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.

Clean Water Act- Federal (1972)

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

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 requirements.

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.



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| Sonoma County Environmental Health Division | City of Long Beach Department of Health and Human Services Environmental Health Division |
| Marin County Environmental Health Services | South Orange County Wastewater Authority |
| San Francisco Baykeeper | County of Orange Environmental Health |
| San Francisco Public Utilities Commission | Orange County Sanitation District |
| East Bay Regional Park District | San Diego County Department of Environmental Health WILD Coast |
| San Mateo County Environmental Health Division | Southern California Coastal Water Research Project |
| Santa Cruz County Environmental Health Services | State Water Resources Control Board |
| Monterey County Environmental Health Bureau | |
| San Luis Obispo County Environmental Health Services | |
| Santa Barbara County Environmental Health Services | |
| Ventura County Environmental Health Division | |
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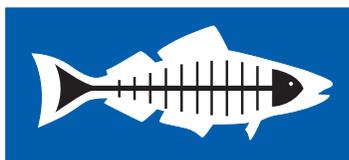
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