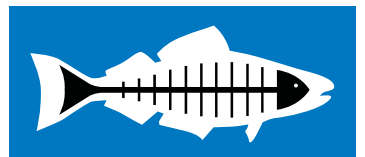


HEAL THE BAY

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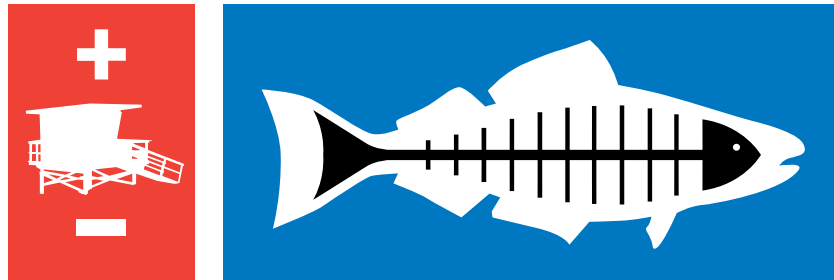
BEACH REPORT CARD



2008-2009
19TH ANNUAL REPORT

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BEACH REPORT CARD



HEAL THE BAY'S
19TH ANNUAL BEACH REPORT CARD
MAY 20, 2009
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Heal the Bay is a nonprofit environmental organization dedicated to making Southern California coastal waters and watersheds, including Santa Monica Bay, safe, healthy and clean. We use research, education, community action and advocacy to pursue our mission.

The Beach Report Card program is funded by grants from the Ford Motor Company, the Goldhirsh Foundation, the James Irvine Foundation, and simplehuman.



the James Irvine foundation



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HEAL THE BAY'S 19TH ANNUAL BEACH REPORT CARD MAY 20, 2009

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Sonoma			
Humboldt			
Del Norte			

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EXECUTIVE SUMMARY

Heal the Bay's 19th Annual Beach Report CardSM provides water quality information to the millions of people who swim, surf, or dive in California coastal waters. Essential reading for ocean users, the report card grades over 500 locations for summer dry weather (324 locations year-round) on an A-to-F scale based on the risk of adverse health effects to beachgoers. The grades are based on daily and weekly fecal bacteria pollution levels in the surfzone. The program has evolved from an annual review of beaches in Santa Monica Bay to weekly updates of all monitored beaches throughout California. All of this information is available in print, via SMS text response, and on Heal the Bay's website, www.healthebay.org/brc.

California beaches are a precious natural and economic resource. Poor water quality not only threatens the health of swimmers and beachgoers but also hurts California's ocean-dependent economy valued at \$43 billion (NOEP, 2005). Each year between 150 million and nearly 400 million visits are made to California beaches (Pendleton et al., 2006). Ocean water quality monitoring is vital to ensuring the health protection of the millions who recreate in state waters. Since the Annual Beach Report Card was



Seal Beach

first published nineteen years ago, beachgoers throughout California have come to rely on the grades produced within the weekly, summer and annual documents as a vital public health protection tool. Unfortunately, in September 2008, California's budget crisis followed by Gov. Arnold Schwarzenegger's line-item veto of state beach monitoring funds severely impacted public health protection throughout the state. Nearly \$1 million in funding was axed from the critical beach water quality monitoring programs used by counties to fund the collection and processing of ocean water samples as well as posting of signage at beaches to notify the public of potential health risks.

Monitoring agencies that had previously been sampling on a daily to weekly basis and had been reliant on these state funds were very quickly forced to monitor with General Fund dollars or severely cut back or completely shelve their programs. San Diego, Santa Barbara, and Ventura were the most severely affected counties due to the majority of their funding coming from the state. All three Southern California counties decided to eliminate or severely reduce their programs until funding from the state was secured. This lack of monitoring meant



that Heal the Bay was unable to include year-round dry or wet weather grades for a significant number of beach locations in this report.

A few counties pursued creative funding alternatives to ensure that sampling would take place at beaches that would otherwise have been unmonitored. For instance, Santa Barbara Channel Keeper, a Santa Barbara based non-governmental organization (NGO), was able to sample a number of local beaches in lieu of the local county health agency. County of San Diego Department of Environmental Health received some emergency funds from the



Oceanside - San Luis River

San Diego Board of Supervisors to ensure that the water quality program could resume in April of this year. Although the funding was not enough to monitor all previously monitored beaches, the emergency funds have allowed the program to come back from the dead. Recently, on April 22, 2009 the State of California unfroze all bond funded projects. The State Water Board has also been working with USEPA and the Obama administration to get some economic stimulus funding for the Beach Monitoring program. It is unclear when State or Federal funding will become available for ocean water quality monitoring programs, but Heal the Bay will continue to urge the State to move as quickly as possible to ensure that beach monitoring programs are fully running and protecting public health as soon as possible.

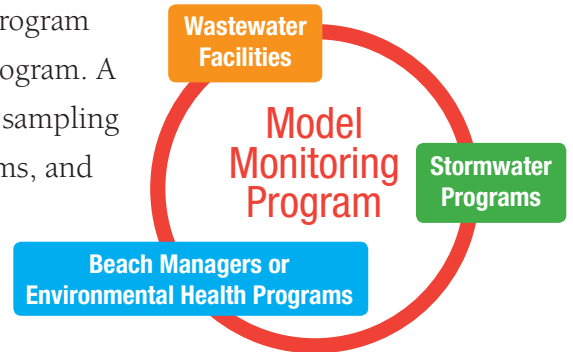
It is hard to believe that in a state with such an ocean dependent economy, elected officials would not be more willing to find the minimal funding necessary to protect an economic driver as significant as coastal tourism as well as the health of the hundreds of millions of people recreating in their waters. Although beach water quality monitoring funding has seen cutbacks before (State funding was reduced by 10% in 2007). The complete elimination of state funding in 2008 sent a message to the oceangoing public that their health is not a priority. It is imperative that government officials, county and state health departments, and NGOs strive towards a long term solution that will permanently restore funding to counties' beach and bay water quality monitoring programs.

The funding fiasco also has impacted the Annual Beach Report Card this year. As a direct result of the funding situation, counties like Ventura and San Diego did not monitor consistently throughout the year and were unable to provide Heal the Bay with sufficient data to generate year-round grades for an unprecedented number of previously monitored beaches.



While summer dry weather grades are shown for all the usual beaches, year-round wet and dry weather grades for some counties have been given a grade of “INCOMPLETE”. Continued efforts must be made to ensure that adequate funding becomes available for water quality monitoring immediately and that a long term solution is found to ensure that this funding crisis does not occur again.

One recommendation for a sustainable monitoring program would be the development of a model monitoring program. A model monitoring program attempts to integrate the sampling resources of wastewater facilities, stormwater programs, and beach managers or environmental health programs.



Model monitoring programs are developed to eliminate redundancy, allocate monitoring resources

more efficiently, and provide greater public health protection. One

of the main reasons Los Angeles County’s shoreline monitoring program was not impacted by the State budget issues was because it had a model monitoring program in place. USEPA—Region Nine published “Public Health Protection at Marine Beaches Report” in 2004. That report recommended elements to include in a model monitoring program.

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Most California beaches had very good water quality this past year, with 276 of 324 (85%) locations receiving very good to excellent (A and B) grades for the year during dry weather. Lower grades during the same time period include 16 Cs (5%), 9 Ds (3%) and 23 Fs (7%). Southern California (Santa Barbara through San Diego) dry weather grades (84% A and B grades) were similar to the statewide average for the second year in a row.

In the San Francisco Bay Area (Marin through San Mateo), the summer dry weather grades were excellent on the ocean-side with 98% (46 of 47) of the locations receiving an A grade, and very-good on the bay-side with 25 of 29 (86%) receiving A or B grades. Only 35 of 76 (46%) of Bay Area locations are monitored year-round. Year-round dry weather water quality at ocean-side was excellent with 17 of 18 (94%) of the monitoring locations receiving an A grade, and fair on the bay-side with 13 of 17 (77%) receiving A or B grades.

There continues to be a great disparity between dry and wet weather water quality. This year (April 2008 – March 2009) 55% of the 324 statewide locations monitored during wet weather received fair to poor (C – F) grades. In Southern California, 64% of sampling locations earned fair to poor wet weather grades. Despite the fact that many counties had excellent water quality during dry weather, wet weather grades were below the five-year average for southern California.



Wet weather water quality also dropped dramatically in the Bay Area. Only 7 of 18 (39%) of the locations on the ocean-side received A grades. Wet weather water quality on the bay-side was similar to year-round dry weather water quality but poorer than summer dry weather, with 13 of 17 (77%) of the locations receiving A or B grades.



Avalon Beach, Catalina

Honor Roll

79 of the 324 (24%) beaches with year-round dry weather grades this year scored a perfect A+. These beaches had zero exceedances of state bacterial standards for ocean water quality throughout the entire time frame of this report. Heal the Bay proudly places these beaches on the 2008-2009 Beach Report Card Honor Roll. A list of these locations can be found in Appendix B.

Beach Bummers

Numerous California beaches vied for the “Beach BUMMER” crown this year (the monitoring location with the poorest dry weather water quality). Six of the ten most polluted beach areas in the state were in LA County.

The Top 10 Beach Bummers

1. Avalon Harbor Beach on Catalina Island (Los Angeles County)
2. Cabrillo Beach harborside (Los Angeles County)
3. Pismo Beach Pier (San Luis Obispo County)
4. Colorado Lagoon (Los Angeles County)
5. Santa Monica Municipal Pier (Los Angeles County)
6. City of Long Beach at LA River outlet (Los Angeles County)
7. Poche Beach (Orange County)
8. Surfrider Beach at Malibu Creek (Los Angeles County)
9. Campbell Cove State Park Beach (Sonoma County)
10. Doheny Beach at San Juan Creek (Orange County)

Los Angeles County was one of the first counties in the state (along with Humboldt County and portions of San Diego County) to modify its monitoring program to collect samples directly in front of flowing stormdrains and creeks. This change was a result of the Santa Monica Bay beach bacteria Total Maximum Daily Load (TMDL) requirements. TMDLs are



water body specific standards. Children play directly in front of stormdrains, and in the runoff-filled ponds and lagoons. Monitoring at “point zero” – the mouth of stormdrains or creeks – is the best way to ensure that the health risks to swimmers are minimized. This is one recommendation among several others that Heal the Bay has made to State officials to improve water quality monitoring and protect public health. A complete list of recommendations can be found at the end of this document.

The data from Santa Barbara County through San Diego County was analyzed to determine whether there were significant differences in water quality based on beach type. As in previous years, water quality at open ocean beaches during year-round dry weather was significantly better than water quality at those beaches located within enclosed bays or harbors, or those impacted by stormdrains. 95% of open ocean beaches received an A grade for year-round dry weather compared to 87% at beaches found within an enclosed bay, harbor or marina, and 77% at beaches impacted by a stormdrain. The data demonstrate that visitors at open ocean beaches with no pollution source are nearly always swimming in clean water during dry weather.



Santa Monica Canyon

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Clean Beach Initiative (CBI)

In 2000, Gov. Gray Davis and then Assemblywoman Fran Pavley proposed \$34 million in the state budget for protecting and restoring the health of California’s beaches. This funding became known as the Clean Beach Initiative (CBI). The fund finances research on rapid pathogen indicators and pathogen source identification efforts in addition to projects to improve water quality at California’s most polluted beaches. Since the implementation of this funding, dozens of projects have been completed or are nearing completion. Sadly however, the December 2008 freeze on bond funds has meant all projects that were underway last year have been put on hold until funding can be freed up. For example, the million dollar source tracking study of the lower Tijuana River Estuary was suspended late last year leading to the loss of data from the entire rainy season for this critical study for those who swim or surf at Imperial Beach. This has also stopped the review and approval process for new projects under Proposition 84.



The Beach Report Card 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. The report is not designed to measure the amount of trash or toxins found at beaches. The Beach Report Card would not be possible without the cooperation of all of the shoreline monitoring agencies in the state.

Heal the Bay believes that the public has the right to know the water quality at their favorite beaches and is proud to provide Californians with this information in an easy-to-understand format. We hope that beachgoers will use this information to make the decisions necessary to protect their health.



Redondo Beach

County health officials and Heal the Bay recommend that beach users never swim within 100 yards on either side of a flowing stormdrain, in any coastal water during a rainstorm, and for at least three days after a storm has ended. Stormdrain 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 usually far exceed state health criteria for recreational water use.

For more information, please visit www.healthebay.org, or call 800 HEAL BAY

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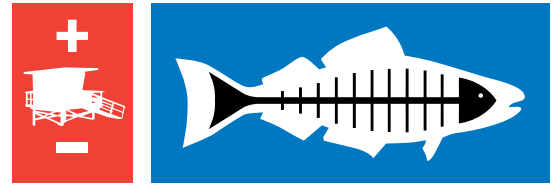
Kildow, J., Colgan, C.S. California's Ocean Economy. National Ocean Economics Program. 2005



INTRODUCTION

Heal the Bay's first Beach Report CardSM (BRC) was published in 1990 and covered about 60 monitoring locations in Los Angeles County from Leo Carrillo Beach near the Ventura County line south 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 public issue only when a substantial sewage spill occurred. Although beaches were routinely monitored, the data were either inaccessible or unusable to the public. Since then, a great deal of work has been completed to reduce urban runoff pollution and sewage spills at our local beaches. 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's eight-wide shoreline bacteria and laboratory inter-calibration study have been completed. Legislation, such as the statewide beach bathing water standards and public notification bill (AB411), and the protocol for identifying sources of fecal indicator bacteria (FIB) at high-use beaches that are impacted by flowing stormdrains (AB538) have been signed into law. Structural best management practices such as the Santa Monica Urban Runoff Recycling Facility, dry weather diversions, and nearly \$100 million in Clean Beach Initiative projects throughout the state have been constructed. Also, the city of Los Angeles is spending over \$100 million of Proposition O funds to make Santa Monica Bay beaches clean and safe. In this same time period, Heal the Bay's Beach Report Card has grown in coverage, expanding from Los Angeles County to all of California's monitored beaches.

BEACH REPORT CARD



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The 19th Annual Beach Report Card summarizes the results of beach water quality monitoring programs along California's coast from Humboldt County to San Diego County from April 2008 through March 2009. The summary includes an analysis of water quality during three time periods: summer dry season (the months covered under AB411 - April through October), year-round dry weather, and year-round wet weather conditions. In addition to summarizing local water quality, the report includes a brief review of the number of sewage spills that impacted recreational waters over the past year. The information derived from this analysis is used to develop recommendations for cleaning up problem beaches to make them safe for swimming and surfing.

This year's Annual BRC covers over 500 locations for summer dry weather (324 locations year-round) from Humboldt County to San Diego County. Heal the Bay advises California



beachgoers to use the information before they go to any beach in the state in order to better protect their health and the health of their families. The weekly California BRC is available in print, via SMS text response, and on Heal the Bay's website, www.healthebay.org.

The Beach Report Card 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.

What Type of Water Quality Pollution is Measured?

Runoff from creeks, rivers and stormdrains is the largest source of pollution to California beaches. Runoff may contain toxic heavy metals, pesticides, fertilizers, petroleum hydrocarbons, animal waste, trash and even human sewage. The Beach Report Card includes an analysis of shoreline (ankle-deep) water quality data collected by more than 20 different 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.



County Line, Ventura County

The amount of indicator bacteria present in runoff, and consequently in the surfzone, is currently the best indication of whether or not a beach is safe for recreational contact. Indicator bacteria are not usually the microorganisms that 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 link between swimming

in waters containing elevated levels of bacteria indicators from polluted runoff and health risk was confirmed in the groundbreaking 1995 epidemiological study conducted by USC, the Sanitation District of Orange County, the City of Los Angeles, and Heal the Bay, under the auspices of the Santa Monica Bay Restoration Project.

Most sample locations are selected by monitoring, health, and regulatory agencies to specifically target popular beaches and/or those beaches frequently affected by runoff. 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 (AB411) and recommended by the Environmental Protection Agency'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 drastically from November through March, despite the fact that many surfers and ocean swimmers are in the water year-round. All counties that have beach monitoring programs, and provide the data to the public, are included in the Beach Report Card.



Gualala Beach, Sonoma County

This year, there were 502 shoreline monitoring locations analyzed in the California Beach Report Card from Humboldt County at Trinidad State Beach near Mill Creek to San Diego County at the Border Field State Park (fence at the Mexican border). Shoreline water samples were analyzed for three indicator bacteria: total coliform, fecal coliform (or *E. coli*) and *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 matter does not necessarily come from humans, although numerous prior studies have demonstrated that there is a significant possibility of human sewage contamination in stormdrain runoff at any given time.

Heal the Bay's Grading System

Heal the Bay's grading system takes into consideration the magnitude and frequency of an exceedance above indicator thresholds over the course of a year. Furthermore, those beaches that exceed multiple indicator thresholds in a given day received lower grades than those beaches that exceeded just one indicator threshold.

The grades are based on a 100-point scale. For each monitoring location, points are subtracted from a perfect score of 100 depending on the severity of bacterial count exceedances of state single sample standards, and/or exceedances of the 30-day geometric mean standards. As the magnitude or frequency of bacteria density threshold exceedances increases, the number of points subtracted increases. The threshold points and grading system can be found in Appendix A.

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, wet weather data were



analyzed separately in order to avoid artificially lowering a location's grade. Wet weather data are comprised of samples collected during or within three days following the cessation of a rainstorm. Heal the Bay's annual report card and weekly report cards utilize a definition of a 'significant rainstorm' as precipitation greater than or equal to one tenth of an inch (>0.1 ""). The BRC analyzes dry weather water quality data for two time periods, April 2008 through October 2008 (summer dry weather or 'AB411'), and April 2008 through March 2009 (year-round dry weather).

What does this mean to the beach user?

Simply put, the higher the grade a beach receives, the better the water quality at that beach. The lower the grade, the greater the health risk. Potential illnesses include stomach flu, ear infection, 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.



Corona Breakwater, Orange County

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 48 hours to complete, then the data must be entered into a database before they are sent to Heal the Bay for a grade calculation. Rapid indicator methods (results in 2-4 hours) for enterococcus bacteria should be widely available to monitoring agencies within the next 5 years. There may even be a pilot study of rapid indicator use during the summer of 2010 at Orange County beaches. Near real-time information on beach closures due to reported sewage spills can be found at www.healthebay.org. The BRC is designed to give the beachgoer historical information on the water quality at a given beach. The public can then make informed decisions about which beach to visit safely.



Why not test for viruses?

A common question asked by beachgoers is: “Since viruses are thought to cause many of the swimming-associated illnesses, why don’t health agencies monitor directly for viruses instead of bacteria indicators?” 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 specific 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 isn’t currently feasible. Interference from other pollutants in runoff can make virus quantification



Oceanside Surf rider Way, San Diego County

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. A local epidemiology study, a component of which is an effort to identify and quantify viral pathogens, began a year and a half ago. This large scale epidemiology study (using over 30 microbial indicators) is led by the Southern California Coastal Water Research Project, UC Berkeley, Orange County Sanitation Districts, and Heal the Bay. The study at Doheny Beach, Avalon Beach, and Surf rider Beach in Malibu should be completed within the next year. Until completion of this study and ongoing USEPA studies, indicator bacteria monitoring is currently the best, most timely, and cost effective method for protecting the health of beachgoers.



2008-2009 ANALYSES

Most California beaches had very good water quality this past year during dry weather, with 276 of 324 (85%) locations receiving very good to excellent (A and B) grades. Lower grades during the same time period include: 16 Cs (5%), 9 Ds (3%) and 23 Fs (7%). Southern California (Santa Barbara through San Diego) dry weather grades (84% A and B grades) were similar to the statewide average. Los Angeles County again exhibited most of the lowest grades in the state (70% A and B grades).

In the San Francisco Bay Area (Marin through San Mateo), the summer dry weather grades were excellent on the ocean-side with 46 of 47 (98%) of the locations receiving an A grade, and very-good on the bay-side with 25 of 29 (86%) receiving A or B grades. Only 35 of 76 (46%) of San Francisco Bay Area locations are monitored year-round. Year-round dry weather water quality at ocean-side was excellent with 17 of 18 (94%) of the monitoring locations receiving an A grade, and fair on the bay-side with 13 of 17 (77%) receiving A or B grades.

Summer dry weather water quality at California beaches this past year was excellent and slightly better than the 5-year average. Of the 502 ocean water quality monitoring locations throughout California, 459 (91%) received very good to excellent water quality marks (A or B) for April through October 2008 [Figure 1 and 2]. There were 43 (9%) monitoring locations that received fair to poor water quality marks (C – F) during the same time period.

The disparity between dry and wet weather grades continues to be substantial. 55% percent of monitoring locations received fair to poor grades during the wet weather season with 35% F grades [Figure 1 and 2]. Wet weather grades were notably worse from the same time period a year ago. The marked seasonal difference in water quality is why Heal the Bay and public health agencies continue to recommend that no one swim in

FIGURE 1.
Number of Grades by Time Period for California Beaches

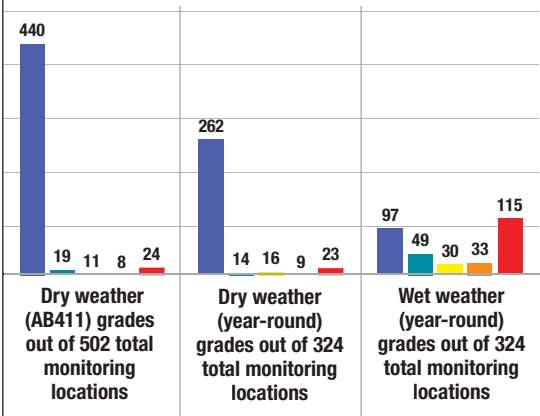
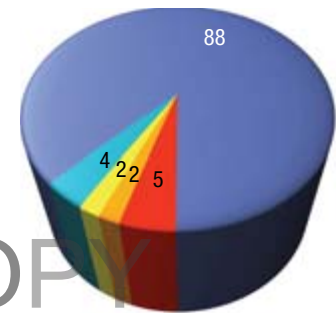
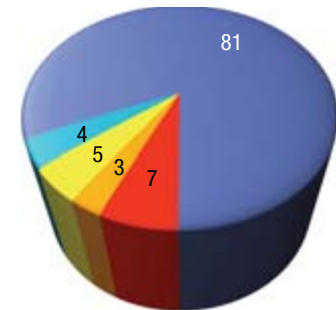


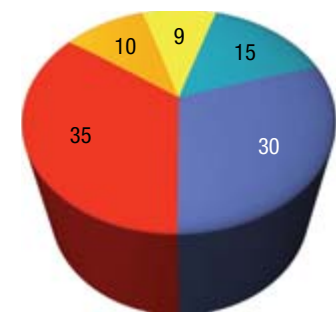
FIGURE 2.
Percentage of Grades by Time Period for California Beaches



Dry weather (AB411) grades



Dry weather (year-round) grades



Wet weather (year-round) grades

Key: ● = A ● = B ● = C ● = D ● = F



the ocean during, and for at least three days after, a significant rainstorm (≥ 0.1 inches). With the exception of educational programs, there have been no major efforts made by public agencies along the coast to target reductions in fecal bacteria densities in stormwater. A list of all the grades can be found in Appendix C.

Honor Roll

79 of the 324 (24%) beaches with year-round dry weather grades this year scored a perfect A+. These beaches had zero exceedances of state bacterial standards for ocean water quality throughout the entire time frame of this report. Heal the Bay proudly places these beaches on the 2008-2009 Beach Report Card Honor Roll. A list of these locations can be found in Appendix B.

Beach Bummers

Numerous California beaches vied for the “Beach Bummer” crown this year (the monitoring location with the poorest dry weather water quality). Six of the ten most polluted beach areas in the state were in LA County.

Avalon Beach tops the list again this year after being a perennial

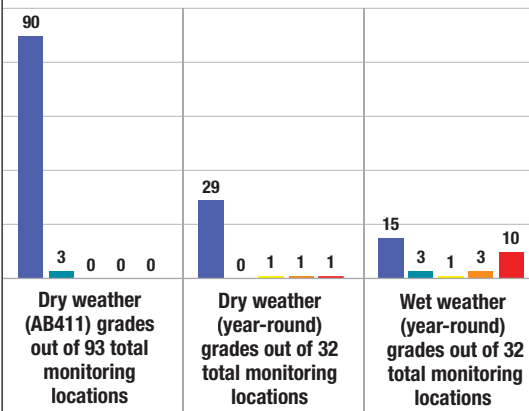
statewide Bummer for six years running. Two years ago a \$4.5 million swimmer health effects study added Avalon Beach as a research location due to its perpetually poor water quality. The results should be out next year. Research and construction components of the Avalon Bay Water Quality Improvement Project (CBI funded) have been underway since October 2008. When state funding was frozen for this project in January, the City of Avalon moved quickly to transfer city funds to continue the research and sewer infrastructure improvements in a timely manner. The infrastructure project is scheduled to be completed this summer. We hope to see improved water quality at Avalon in the near future.

The Santa Monica Pier’s continuing water quality problems were a disappointment again this year. Santa Monica is now repairing and redirecting all nuisance flow from the Pier stormdrain to the Santa Monica Urban Runoff Recycling Facility. This project should be completed by Memorial Day 2009 and we hope to see improved water quality at the pier this summer. Poche Beach continued to struggle with poor water quality and joins the list for the second year in a row. A small dry weather filtration/UV disinfection plant is now completed at the outlet of Poche Creek and will hopefully improve water quality dramatically at this location from now on.

CALIFORNIA “BEACH BUMMER” LOCATIONS		
1	Avalon Harbor Beach on Catalina Island	Los Angeles County
2	Cabrillo Beach harborside	Los Angeles County
3	Pismo Beach Pier	San Luis Obispo County
4	Colorado Lagoon	Los Angeles County
5	Santa Monica Municipal Pier	Los Angeles County
6	City of Long Beach at LA River outlet	Los Angeles County
7	Poche Beach	Orange County
8	Surfrider Beach at Malibu Creek	Los Angeles County
9	Campbell Cove State Park Beach	Sonoma County
10	Doheny Beach at San Juan Creek	Orange County

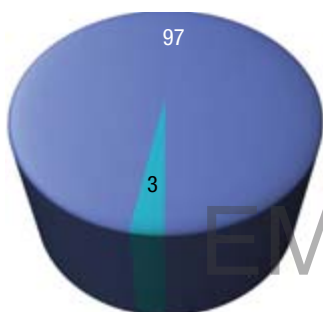
THE BEACH REPORT CARD: COUNTY BY COUNTY

FIGURE 3.
Number of Grades by Time Period for San Diego County Beaches

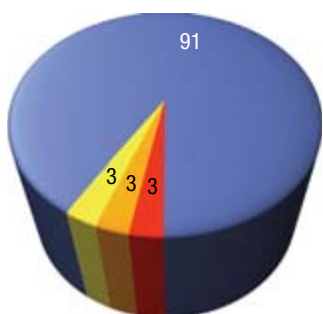


We strongly commend those agencies that continue their monitoring programs beyond the summer dry weather (AB411) required dates of April through October. This action provided approximately 20 additional weeks of water sampling. This meant that beachgoers, particularly surfers going out for the winter swells, could continue receiving information about water quality and have the ability to make better health risk decisions. In addition we commend those agencies that have continued to monitor beach water quality despite the state funding cutbacks experienced during the past 6 months.

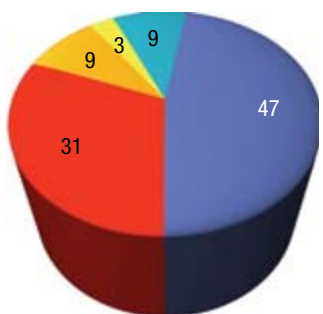
FIGURE 4.
Percentage of Grades by Time Period for San Diego County Beaches



Dry weather (AB411) grades



Dry weather (year-round) grades



Wet weather (year-round) grades

Heal the Bay presents grades for all coastal county monitoring locations (except for Del Norte County). Most grades are updated weekly and can be viewed on our website at www.healthebay.org/brc. Below is a brief summary of each county's monitoring program over the past year, associated water quality issues (if any), and the number of beach closures caused by sewage spills.

SAN DIEGO

There are five agencies within San Diego County that provided monitoring information to Heal the Bay's Beach Report Card: the City of Oceanside, the City of San Diego, Encina Wastewater Authority, San Elijo Joint Powers Authority, and the County of San Diego Department of Environmental Health (DEH). A majority of the 93 monitoring locations monitored during summer dry weather (AB411) and covered by the Beach Report Card were sampled and analyzed by the City and County of San Diego. Samples were generally collected at the wave wash (where runoff and ocean water mix) or 25 yards away from a flowing stormdrain, creek or river. For additional water quality information visit the County of San Diego Department of Environmental Health's website at <http://www.sdcounty.ca.gov/deh/lwq/beachbay/index.html>.

Historically, shoreline monitoring in San Diego County was scaled back approximately 40% (from 95 to 59 locations on average) between November and March. This past winter, the number of San Diego County year-round monitoring locations dropped by more than 60% due to lack of program funding. Without state funding after the Governor's line item budget veto, the County of San Diego DEH shut down their Beach and Bay monitoring program entirely in



September 2008. As one of the most popular California tourist destinations whose economy is so reliant on their beaches, the lack of monitoring or public notification on beach water quality was disconcerting. After many months without sampling, the County of San Diego's Board of Supervisors stepped in and provided over \$100,000 to the DEH for their ocean water sampling program. This amount was insufficient to resume all previous monitoring efforts. However, the amount has enabled the DEH to resurrect ocean water quality monitoring at 18 of the most popular beaches in San Diego for the upcoming summer season.

Dry weather water quality at beaches that were monitored in San Diego County was excellent. Of the 93 summer dry weather water quality monitoring locations, 100% received good to excellent water quality marks (Figures 3 and 4). San Diego County's water quality during the year-round dry weather time period was similar with all of the monitored locations receiving A grades.

Some good news for Imperial Beach is that the state has funded a \$1 million Clean Beach Initiative source tracking study of the lower Tijuana River Estuary. The one year study will include recommendations to reduce fecal bacteria densities at Imperial Beach. However, the study was suspended during the critical winter rainy months due to the state budget issue. Now the study won't be completed until 2010.

MORE ON THE TIJUANA RIVER SLOUGH

When sewage contamination in the Tijuana River moves from the estuary mouth and north along the coast, south San Diego County beaches are heavily impacted. As a result, water quality at these impacted beaches is often extremely poor.

In a recent study on enteric viruses at Imperial Beach and the Tijuana River mouth¹, researchers reported a number of hepatitis A virus strains. Because untreated human fecal waste from Tijuana sewage outfalls is a major pollution source to coastal waters near the U.S.-Mexican border, human fecal bacterial densities (*E. coli* and Enterococci) during wet weather exceeded state water quality standards in 86% (12 of 14) of the samples in the study. Exceptionally high concentrations of these human fecal indicator bacteria were significantly correlated with high concentrations of hepatitis A virus and enterovirus. Three strains of poliovirus were also detected¹.

To create a real time Tijuana River plume model, Scripps Institute of Oceanography compared previous monitoring data with measured hourly ocean currents from San Diego Coastal Ocean Observing System (SDCOOS; <http://sdcoos.ucsd.edu/data/particles/IB/>). This two-dimensional view makes tracking the movement of the plume significantly easier than the one-dimensional real time data sets that were used previously. The San Diego Department of Environmental Health believes that the use of this real time predictive model alleviates the need for extensive bacterial monitoring of south county beaches². When the model predicts poor water quality, beaches are closed but extensive monitoring does not continue. Bacterial monitoring is thought to take too long for protecting public health, because results are produced at least 24-hours after sample collection.

The downside of less monitoring is that it gives an incomplete water quality picture for the Beach Report Card, status and trends analysis, State and Regional Water Board water quality assessments, impaired waters determinations, sanitary survey implementation and TMDL development.

1. Gersberg et al. 2006. Applied and Environmental Microbiology. 72:7438-7444

2. San Diego County Department of Environmental Health

Given the drastic reduction in monitoring location breadth and frequency in San Diego County this past year, a trends assessment was not performed.

Sewage Spill Summary

San Diego County was affected by 29 closures due to sewage between April 2008 and March 2009. The 15 spills of known volume released over 750,000 gallons of sewage to local beaches. There were three major spills (>10,000 gallons) that accounted for over 98% of the known sewage spill volume. Two of the three major releases were the result of maintenance and repair at a pump station in Mexico that resulted in discharge to the ocean in Playas. Over 700,000 gallons of untreated sewage was released within one week starting on 8/27/2009. Beaches at Border Field State Park and the Tijuana Slough were closed twice that week (for two days, and then for three more days). The third major spill, estimated at 13,600 gallons, closed Dog Beach at the outlet of the San Diego River for 6 days at the end of December 2008.

There were 14 beach closures (only 3 during the summer dry months) from Coronado to the U.S. Border due to model projections of sewage contaminated plumes from the Tijuana Estuary (see sidebar). All or parts of Imperial Beach were closed for 35 total days between 4/1/2008 and 3/31/2009 as a precaution to keep the public from being exposed to sewage contaminated plumes from the Tijuana River.



San Onofre Creek, San Diego County



Oceanside Harbor, San Diego County



Oceanside Pier, San Diego County

ORANGE COUNTY RESULTS

FIGURE 5.
Number of Grades by Time Period
for Orange County Beaches

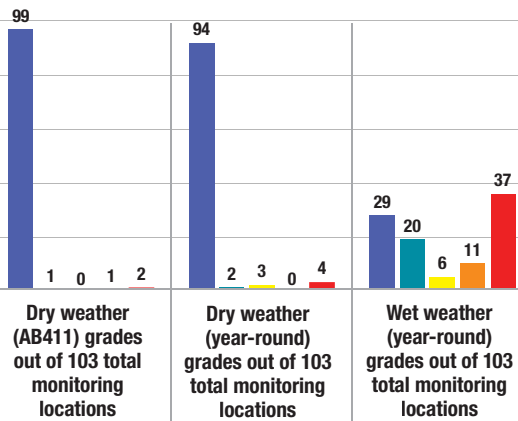
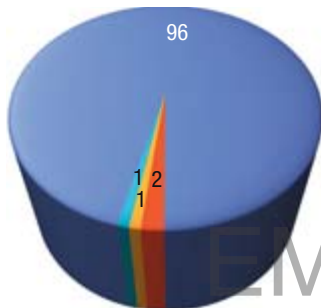
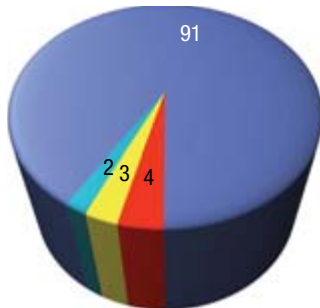


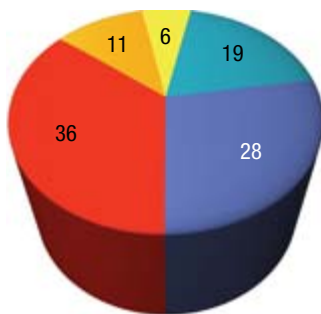
FIGURE 6.
Percentage of Grades by Time Period
for Orange County Beaches



Dry weather (AB411) grades



Dry weather (year-round) grades



Wet weather (year-round) grades

Key: ● = A ● = B ● = C ● = D ● = F

ORANGE COUNTY



There are three agencies within Orange County that provide monitoring information to Heal the Bay's Beach Report Card. The South Orange County Wastewater Authority, the County of Orange Environmental Health Division, and the Orange County Sanitation District. Samples were collected throughout the year along open coastal and bay beaches, as well as near flowing stormdrains, creeks or rivers. For additional water quality information visit the County of Orange Environmental Health Division's website at <http://www.ocbeachinfo.com>.

While monitoring within Orange County remained unaffected during the budget crisis, environmental health officials are ready with a backup plan to decrease the number of sites monitored in case AB411 funds should fail to come through by July 2009. With the release of bonds, Heal the Bay is hopeful that these funds will be made available very soon and that all Orange County beaches will continue to be monitored throughout this summer. In addition, the State budget crisis prompted various Orange County agencies who conduct shoreline monitoring to begin discussions on developing and implementing a model shoreline monitoring program for Orange County beaches. Model monitoring programs are developed to eliminate redundancy, allocate monitoring resources more efficiently, and provide greater public health protection.

Orange County grades for both year-round dry weather and the AB411 time period were again well above the state average. 97% of monitoring locations received an A or B during the AB411 time period as well as 94% for year-round dry weather (Figures 5 and 6). Stretches of Orange County ocean beaches with excellent water quality during the summer dry weather time period were: Seal Beach at 1st Street all the way to Doheny Beach north of San Juan Creek, and Avenida Pico south to Las Palmeras at San Clemente City and State Beaches.

There were seven Orange County locations that received fair to poor year-round dry weather water quality grades. All of these locations were near Doheny Beach and at Poche Beach in San Clemente (F). A small dry weather filtration/UV disinfection system at the outlet of Poche Creek has now been completed. According to the State Water Resources Control Board, the system has been operational as of April 1, 2009. We hope to see tremendous improvement in water quality at Poche Beach this coming year.



All four Baby Beach monitoring locations in Dana Point Harbor received A grades this past year during both summer dry weather and year-round dry weather, a marked improvement over previous years. In past years, Baby Beach has been a notorious F grade beach, with poor grades stemming from a lack of circulation as well as runoff from multiple sources. Funding through the Federal economic stimulus bill has provided the City with over \$300,000 to begin a water circulation study in the Dana Point Harbor. Although the beach received an A grade during AB411 in 2008, Heal the Bay is hopeful that this study will shed some light on past exceedances and how they can be avoided in the future.

Wet weather water quality in Orange County this past year was poor. 48% of monitoring locations received A or B grades this year during wet weather compared to 54% in 2007-2008. Orange County wet weather water quality was just slightly above the state average.

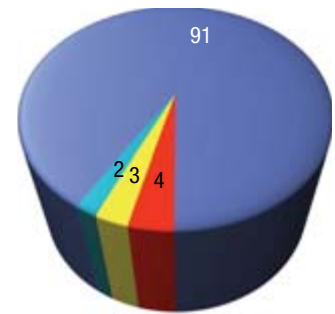
Figures 7 and 8 illustrate a trends assessment of this year's grade percentages at Orange County beaches compared to the five-year average. Orange County displayed quite easily the best dry weather water quality it has seen in the last six years. For both dry and wet weather conditions, this year's water quality was markedly better than the County's five-year average.

Sewage Spill Summary

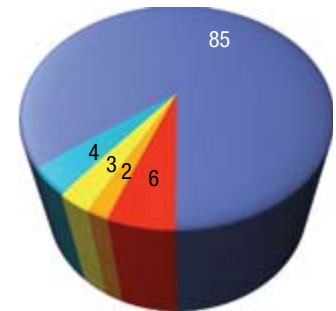
Orange County experienced 18 sewage spills (totaling approximately 688,000 gallons) that led to beach closures this past year. Four of these spills were major (>1000 gallons) including: ~58,000 gallons released 4/17/08 in City of Laguna Beach (beaches closed for 6 days), ~590,000 gallons released 10/29/2008 in City of Laguna Beach (beaches closed for 6 days), ~12,000 gallons released 11/26/08 affecting all of Doheny Beach (beaches closed for 5 days), and ~25,000 gallons released 3/6/2009 in Moulton Niguel Water District (beaches closed for 4 days).

ORANGE COUNTY RESULTS

FIGURE 7.
2008-2009 Orange County Dry Weather Water Quality Compared to the Five-Year Average (2003-2008)

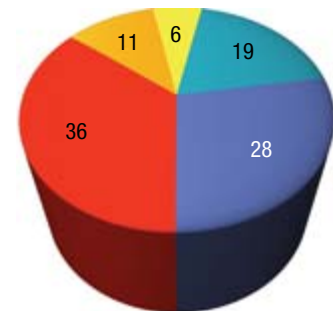


2008-2009 (dry weather)

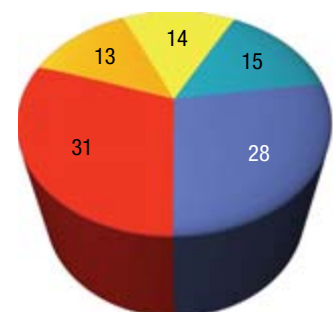


Five-year average (dry weather)

FIGURE 8.
2008-2009 Orange County Wet Weather Water Quality Compared to the Five-Year Average (2003-2008)



2008-2009 (wet weather)



Five-year average (wet weather)

Key: ●=A ●=B ●=C ●=D ●=F

LOS ANGELES COUNTY RESULTS



FIGURE 9.
Number of Grades by Time Period
for Los Angeles County Beaches

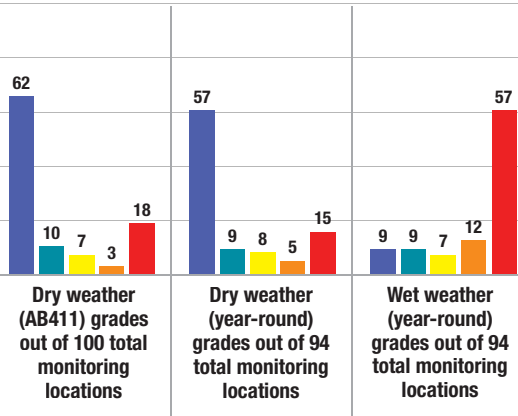
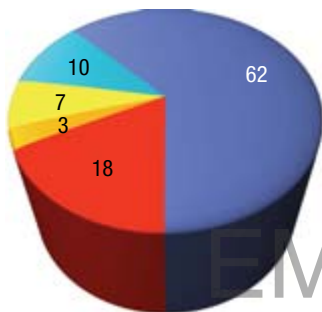
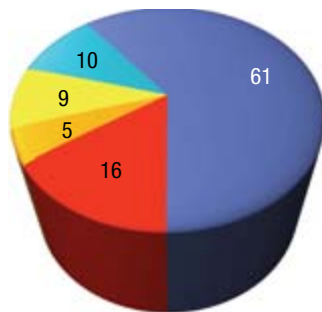


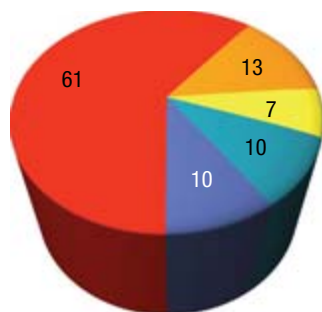
FIGURE 10.
Percentage of Grades by Time Period
for Los Angeles County Beaches



Dry weather (AB411) grades



Dry weather (year-round) grades



Wet weather (year-round) grades

Key: ● = A ● = B ● = C ● = D ● = F

LOS ANGELES

There are four agencies within the County of Los Angeles that contributed monitoring information to Heal the Bay's Beach Report Card. The City of Los Angeles' Environmental Monitoring Division (EMD) at the Hyperion Sewage Treatment Plant provided daily or weekly beach data for 35 locations. The Los Angeles County Department of Health Services (DHS) monitored 33 locations on a weekly basis. The Los Angeles County Sanitation Districts monitored eight locations weekly. And finally, the City of Long Beach, Environmental Health Division, monitored 25 locations on a weekly basis. All monitoring programs except Long Beach collect samples throughout the year at the mouth of a stormdrain or creek. Most Long Beach monitoring locations are not near storm drains, but the L.A. and San Gabriel rivers receive most of the city's stormwater runoff and outlet near these beaches. For additional water quality information visit Los Angeles County's Department of Health Services website at <http://lapublichealth.org/phcommon/public/eh/rechlth/ehrecocdata.cfm>; or the City of Long Beach at <http://www.ci.long-beach.ca.us/health/organization/eh/water/>.

Los Angeles County's monitoring program has been one of the least impacted by the state funding cuts. While other counties shut down or cut back on their ocean water quality monitoring programs, Los Angeles County has been able to continue sampling and protecting public health as before. This is due to the structure of the program and the shared monitoring responsibilities between agencies in the county. The implementation of Total Maximum Daily Loads (TMDLs) and associated monitoring requirements has led to a shift away from burdening only the environmental health departments and enabled other agencies and dischargers to take a share of the monitoring responsibility.

Los Angeles County's move to sample at the mouth of flowing stormdrains and creeks due to the Santa Monica Bay Beach Bacteria TMDL has historically contributed to the county's grades being well below the state average. However, it is important to note that not all water quality problems in Los Angeles County can be attributed to the sampling location. The beaches at Avalon, Cabrillo, and Long Beach were again very poor this year even though stormdrains are not a major contributor to pollution at these locations. Heal the Bay



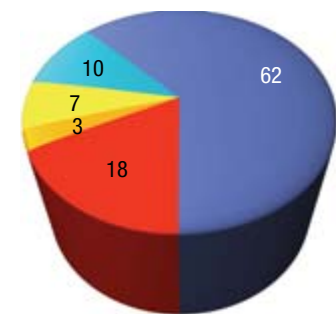
believes that sampling at the outfall (point zero) of drains and creeks gives a more accurate picture of water quality and is far more protective of human health. Statewide, most monitoring locations associated with stormdrains or creeks are actually sampled at a substantial distance from the outfall.

Los Angeles County exhibited water quality below the state-wide average this past year and again exhibited the worst overall water quality in the state. This is mostly due to a handful of polluted beaches in Malibu, Santa Monica, Avalon, and Long Beach. Long Beach showed some improvement at select locations this year, but the majority of locations near the LA River continue to exceed state health standards regularly. Both summer AB411 and year-round dry weather water quality was fair in Los Angeles County this past year. 72% of the locations received an A or B for the summer months, and year-round dry weather was very similar with 70% As or Bs (Figures 9 and 10). There were some stretches of very good to excellent summer water quality in western Malibu from Leo Carrillo to Walnut Creek on Point Dume, and in Santa Monica from Pico Blvd. to the Venice fishing pier. The South Bay saw excellent water quality during the summer months from Dockweiler Beach all the way to Cabrillo Beach oceanside.

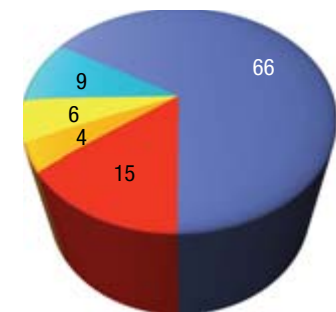
Poor grades for year-round dry weather in Santa Monica Bay were received at Paradise Cove in Malibu (F), Escondido Creek (F), Solstice Canyon (F), Marie Canyon stormdrain at Puerco Beach (F), Surfrider Beach (F), Castlerock stormdrain at Castle Rock Beach (D), Santa Monica Beach at Wilshire Blvd (F), Santa Monica Pier (F), the Ballona Creek outlet (F), and Cabrillo Beach harborside at the lifeguard tower and at the restrooms (F, F). Marie Canyon exhibited a surprisingly poor grade because the County constructed and operates a dry weather runoff treatment facility near the outlet of the creek. The facility has not performed as expected for various reasons. Despite millions of dollars spent on water quality improvements, Cabrillo Beach harborside at the lifeguard tower has earned F grades for all time periods over the last six years. The Cabrillo Beach clean up project is behind schedule but should be completed this summer. All five monitoring locations at Avalon Beach on Catalina Island received F grades for the AB411 time period this past year, earning this location the distinction of being the most polluted beach in the entire state. As usual, Avalon Beach was not monitored year-round despite the attraction of the idyllic town to tourists year-round. Santa Monica Beach at Wilshire Boulevard saw a huge dip in water quality this past year. This site has experienced pump maintenance issues that resulted in bacterial exceedances due to ponding on the beach at the mouth of the stormdrain. This ponding

LOS ANGELES COUNTY RESULTS

FIGURE 11.
2008-2009 Los Angeles County AB411 Water Quality Compared to the Five-Year Average (2003-2008)



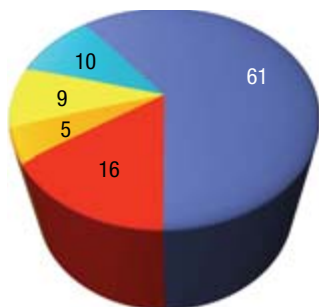
2008-2009 (AB411)



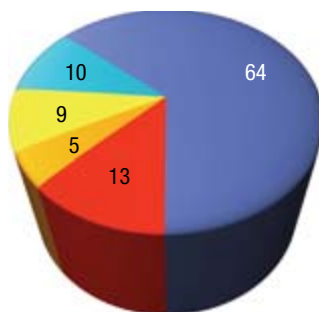
Five-year average (AB411)

Key: ●=A ●=B ●=C ●=D ●=F

FIGURE 12.
2008-2009 Los Angeles County Dry Weather Water Quality
Compared to the Five-Year Average (2003-2008)

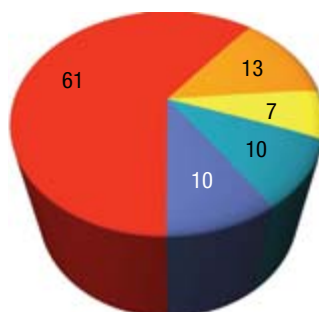


2008-2009 (dry weather)

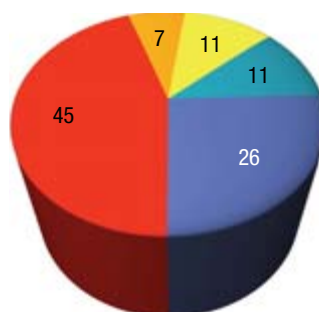


Five-year average (dry weather)

FIGURE 13.
2008-2009 Los Angeles County Wet Weather Water Quality
Compared to the Five-Year Average (2003-2008)



2008-2009 (wet weather)



Five-year average (wet weather)

Key: ● = A ● = B ● = C ● = D ● = F

often becomes a nuisance by attracting unusual amounts of shorebirds. Similar ponding has resulted in bacterial exceedances in the past at Santa Monica Canyon outlet and at the Pico Boulevard stormdrain. These ponding issues need to be solved each year much earlier than Memorial Day, especially now that any exceedances after April 1st could result in a monetary fine under the Santa Monica Bay Beach Bacteria TMDL.

Year-round dry weather water quality in Long Beach improved slightly this past year, but was still poor overall. 52% of Long Beach monitoring locations received fair to poor grades. The rest of L.A. County was closer to the state average, with 78% A and B grades. Long Beach has made significant efforts to locate pollution sources and improve water quality. Extensive studies throughout the city have demonstrated that the Los Angeles River, an enormous pollution source because of its 1000-plus square mile drainage, was the predominant source of fecal bacteria to Long Beach waters. Long Beach scored 52% A and B grades during AB411 and 48% during year-round dry weather. Monitoring locations between Belmont Pier and City Beach at 72nd Place, as well as a handful of locations in Alamitos Bay, exhibited the best water quality in Long Beach this past year for dry weather. Every monitoring location in Long Beach again scored a poor grade during wet weather.

It should be noted that even though Long Beach's water quality overall is poor, this year did mark the best Long Beach water quality in the past 3 years. Last year, the City of Long Beach invested over \$300,000 towards an effort to determine sources of its ocean water bacterial contamination. While the Los Angeles River will continue to be the major source of contamination for Long Beach beaches, the city's investigations have resulted in the discovery and repair of leaking or disconnected sewage pump lines and improperly working storm drain diversions. These repairs appear to have made a dent in the overall water quality problems in Long Beach. The City has also implemented an innovative pilot technology to disinfect runoff in the stormdrains. Hopefully we will see more improvements in Long Beach water quality over time.

In addition to having the highest percentage of poor dry weather grades in the State, L.A. County also exhibited the worst wet weather water quality in California again this year. The percentage of wet



weather A and B grades was 19% this past year. 69 of 94 (73%) of sample sites received poor grades, with nearly 61% of sample sites receiving a grade of F.

General Water Quality Trends for Los Angeles County

Heal the Bay analyzed trends for both dry and wet weather water quality for Los Angeles County beaches to determine how this year's water quality results fared compared to the past five-year average. The overall 2008-2009 dry weather water quality was just slightly below the five-year average for A or B grades (73% of locations), with 70% of the locations receiving A or B grades this past year (Figure 12). Since November 2004, most monitoring locations at the outlet of stormdrains or creeks were moved to

the confluence of the outlet flow and the wave wash. The recent trend of poor grades in Los Angeles County shows the dramatic difference in water quality between the previous sampling locations (approximately 25 yards away from the outlet) and the new sites directly influenced by watershed and urban runoff flows.

However, the change in monitoring locations had absolutely no effect on three of the state's most polluted beaches: Long Beach, Cabrillo harborside, and Avalon. These

sampling locations have remained fixed for years and are not associated with perennially flowing drains or creeks, and so were not subject to relocation.



Abalone Beach, Palos Verdes

86% of Santa Monica Bay beaches (from Leo Carrillo to Palos Verdes) received A or B grades during the AB411 time period. While slightly below last year's grades, this is still dramatically better than the average water quality in Santa Monica Bay since water quality monitoring at these locations moved to point zero (mouth of stormdrains or creeks).

Wet weather water quality this past year was the worst we have seen since 2004-2005 when LAX rain station recorded 25.34 inches of rain. Wet weather water quality was well below the 5 year average (Figure 13)

Santa Monica Bay Total Maximum Daily Loads (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 AB411 time period by July 15, 2006 or face penalties. Marina del Rey's Mother's Beach and Back Basins had a compliance deadline of March 18, 2007. The 100% compliance requirement for the AB411 time period (from April 1st to October



31st) means that all Santa Monica Bay beaches must be safe for swimming every day for the seven months from April through October. These requirements were in the fecal bacteria Total Maximum Daily Loads for Santa Monica Bay, Mother's Beach, and the Los Angeles County Stormwater permit.



Dockweiler State Beach

Unfortunately, the compliance deadlines came and went, and many of Santa Monica Bay's beaches, namely, Surfrider Beach, Santa Monica Pier, Mother's Beach, Dockweiler State Beach at Ballona Creek mouth, Marie Canyon, Santa Monica Beach at Pico/Kenter and the Redondo Pier still had elevated bacteria levels above the TMDL limits. In order for the Bacteria TMDL pollution limits to be readily enforceable, the Regional Water Quality Control Board incorporated

them into the language of the L.A. County Storm Water Permit on September 14, 2006 and August 9, 2007. Cities and other dischargers are now subject to fines of over \$10,000 per day per violation.

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On March 4, 2008, in a precedent-setting move, the Los Angeles Regional Water Quality Control Board sent strongly worded notices of violation and section 13383 Orders to 20 cities and Los Angeles County to clean up Santa Monica Bay beaches. The cities of Santa Monica, Los Angeles, and Malibu are among those threatened with fines of up to \$10,000 per day per violation. The action marks the first time nationally that a regulatory body has threatened fines to ensure cities' compliance with beach bacteria limits from a TMDL.

Some cities and the County have petitioned the State Water Resources Control Board to review the 13383 Orders. Several of the cities did not meet the deadline for submission, so their petitions were dismissed. The cities that did meet the deadline are holding the petitions in abeyance, and the County has requested a review. We are anxious for the Regional Board to continue moving forward on enforcement, as it has been over a year since the violation notices were first sent.

While some cities have made noticeable improvements in identifying and rectifying sources of ocean pollution, measures to fix chronically polluted beaches like Dockweiler State Beach at Ballona Creek mouth and Surfrider have been inadequate. Instead of challenging potential heavy fines for each bacteria limit violation, we are hopeful that the cities and Los Angeles County will take appropriate aggressive actions to ensure that bacteria limits are not exceeded and that Santa Monica Bay beaches are safe for beach-goers in the summer months. The Beach Report Card will continue to identify beaches that exceed bacteria limits and track compliance efforts.



In addition soon after the Regional Water Quality Control Board incorporated Bacteria TMDL pollution limits into the language of the L.A. County Storm Water Permit, the County filed a petition on the newly adopted permit. They held this permit in abeyance for almost two years. On September 18, 2008, the County took the petition out of abeyance and asked for formal review by the State Board. The petition is currently in active review by the State Board. The petition basically challenges the format of the Regional Board hearing that took place. This action by the County marks another attempt to derail regulations and take a step backwards in water quality protection. There is no reason for the petition because the TMDL will be revisited by the Regional Board this year.

Beach Cleanup Projects Update

Santa Monica Pier

The City of Santa Monica has nearly completed the Santa Monica Pier improvement project, funded under Measure V, approved by Santa Monica voters in 2006. Measure V projects are intended to reduce stormwater pollution and runoff from entering Santa Monica Bay.

The project began in February 2009 and involved replacing the severely degraded stormdrain underneath the Santa Monica Pier. The new stormdrain will be designed and constructed in a manner to reduce or eliminate ponding of runoff under the pier. The City will also build a new properly-sized and designed runoff diversion structure to ensure that all dry weather runoff will be pumped to the Santa Monica Urban Runoff Reuse Facility for treatment. The project should be completed by Memorial Day 2009 in time to protect swimmers at the Santa Monica Pier this summer.



Santa Monica Pier - Before Project

During the summer of 2008, Heal the Bay conducted a survey-based study at the Santa Monica Pier to investigate and address reports of beach bacteria warning signs failing to effectively communicate to the general public. The objective of the study was to determine if indeed there is a failure in the beach water quality notification system, and if so, possible reasons for the inadequacy of water quality warning signs and possible ways in which they could be improved. Santa Monica Pier was chosen as the study location because of its chronic water quality problems and its high number of visitors. Results showed that 55% of those enrolled in the study did not understand the signage. It was also discovered that there was a failure in communication between lifeguards who post the signs and the health department who test the water. This resulted in signs frequently not being posted in the sand following exceedances. The city of Santa Monica responded to the report and ordered larger signs with easy to see 'no swim' logos that will be placed permanently on the pier. New signs have



also been ordered for the beach and officials will ensure that they are being placed appropriately following a FIB exceedance going forward.

Los Angeles' Enclosed Beaches

Both Mother's Beach in Marina del Rey and Cabrillo Beach are enclosed beaches that chronically exceed beach bathing water standards and continuously receive poor grades on the Beach Report Card. Beaches in enclosed bays are typically found to have poor water quality due to a lack of water circulation, which allows bacteria numbers to persist for longer periods of time without dispersion. Public agencies responsible for oversight at these beaches have received funding from the Clean Beach Initiative to



Mother's Beach, Marina del Rey

embark on circulation improvement projects. Pumps were put in place at both locations in an attempt to reduce high bacteria concentrations.

The circulation pump at Mother's Beach was running 24 hours a day last year in the hope of dissipating high bacterial concentrations along the entire beach. These mitigation efforts may have contributed to the drop in exceedances and the year-round A grade given to this formerly F grade beach. We hope to see continued success at this chronically polluted children's beach.

The pump at Cabrillo Beach was active for approximately four months in 2007, during which time the water was monitored for improvements. Based on a report using the city's routine monitoring data as well as the Port's expanded monitoring results, it was found that bacterial exceedances of water quality criteria continued to occur at Inner Cabrillo Beach. It was concluded that the pump was ineffective in increasing circulation across the beach face of Inner Cabrillo Beach. However, this initial



Cabrillo Beach, San Pedro

field test of the circulation pump was poorly run. Often, the pump was not submerged correctly (if at all). With summer upon us once again, Heal the Bay is extremely concerned about the rate at which this project is moving. While replacement of the beach sand in the intertidal zone has begun, it is important that the Port of LA move forward as quickly as possible to finish the remaining proposed improvements. This includes placement of bird exclusion devices (economical and easy, they should have been in place at least two years ago), removal of the jetty, and completion of study



towards better water circulation pumps. Meanwhile, the regulatory compliance date for this beach is looming in the summer of 2010.

Paradise Cove

For many years the beach adjacent to the mouth of Ramirez Canyon Creek at Paradise Cove in Malibu has exhibited high levels of fecal indicator bacteria. In order to find and abate any major bacterial sources in this watershed, Heal the Bay, SCCWRP and the County of Los Angeles have collaborated in a phased source identification project. The first two phases of the project concentrated on characterization of the watershed using watershed wide sampling and identification of human/nonhuman sources using DNA techniques. The study is now entering into its third phase during which field teams will conduct spatially intensive sampling to hopefully identify specific input sources.

On February 4, 2009, The Kissel Company, the owner of the Paradise Cove Mobilehome Park in Malibu was issued a proposed \$1.65 million fine by the Regional Water Board for allowing raw or partially treated sewage to spill into Ramirez Creek and the ocean. Specifically, the proposed fine covers the failure to comply with prescribed Time Schedule Orders, discharge of raw sewage and failure to submit monitoring reports.

If the Regional Board approves the fine in June 2009, this would be a big victory for the Bay, as Paradise Cove beach has routinely received a failing grade on the Heal the Bay Beach Report Card and the mobilehome park is likely a main source of the pollution. The Paradise Cove Mobilehome Park and the restaurant use onsite wastewater treatment systems that have had numerous water quality violations. For many years Heal the Bay has pressured the Regional Board to issue fines for these egregious, continuous violations and we are ecstatic that this has finally occurred. Over the years, the owner of these properties has been proactive by putting in a runoff treatment facility near the mouth of Ramirez Creek. However, the facility was under-designed and needed to be replaced with a bigger facility. The project for the bigger facility was approved by the State Water Board as part of the CBI, but construction was halted due to the budget crisis. Now the new facility should be completed by 2010.

Marie Canyon

L.A. County completed a new UV treatment facility at Marie Canyon in Malibu in late summer 2007. The facility was designed to filter and treat as much as 100 gallons per minute of dry weather runoff. Unfortunately pump problems at the facility led to poor grades for a number of months following completion. The County has since fixed these problems and the pump has been running 24 hours a day during the summer and winter dry weather period since October 2008. While the beach location has received an annual F grade, this is reflective of the poor water quality seen before the pumps were fixed. Now that the facility is operational water quality has improved substantially during dry weather and Heal the Bay is hopeful that this will be reflected in this year's end of summer grades.



Redondo Beach Pier

Los Angeles County Sanitation Districts and Redondo Beach undertook a study at Redondo Pier to shed light on the sources of high fecal bacteria densities at the beach south of the pier. The Model Program included the design and development of identification methods and the implementation of a source identification study. The project has now developed and optimized methods and has completed the microbial source tracking effort. The project report will be submitted with results by December 2009.

Avalon Beach

In September 2008 the State Water Resources Control Board (SWRCB) and the City of Avalon completed a grant agreement for Proposition 13, Clean Beaches Initiative Funding for the Avalon Bay Water Quality Improvement Project. This project's goal is to inspect and repair and/or replace approximately 370 residential sewer laterals and to install monitoring wells along Avalon's main beaches and at inland locations. These wells will enable monitoring of the shallow groundwater beneath the city that may be impacting beach water quality. Both research and construction components of this project have been underway since October 2008.



Redondo Beach Pier

Unfortunately, in January 2009, the City received notice that the State froze this project's funding. The City of Avalon voted to immediately transfer city funds to continue and accomplish the research and the sewer infrastructure improvements in a timely manner. The infrastructure project is scheduled to be completed this summer. We hope to see improved water quality at Avalon in the near future.

Sewage Spill Summary

There were 10 sewage spills to receiving waters in L.A. County that resulted in beach closures this past year. Five of these were major spills (>10,000 gallons) and constituted over 94% of the total known volume spilled in Los Angeles County. These major spills were: 16,000 gallons released 6/18/08 in Glendale to the LA River (13 precautionary beach closures in Long Beach for 1 day), 12,000 gallons released 7/26/2008 in City of Long Beach to Spinnaker Bay (7 beaches closed for 4 days), 20,000 gallons released 8/12/08 to the LA River via Compton Creek (15 precautionary beach closures in Long Beach for 4 days), 17,160 gallons released 12/12/08 to the LA River (12 precautionary beach closures in Long Beach for 3 days), and 22,000 gallons released 3/14/2009 to the LA River in Pasadena (15 precautionary beach closures in Long Beach for 3 days).

VENTURA COUNTY RESULTS

FIGURE 14.
Number of Grades by Time Period
for Ventura County Beaches

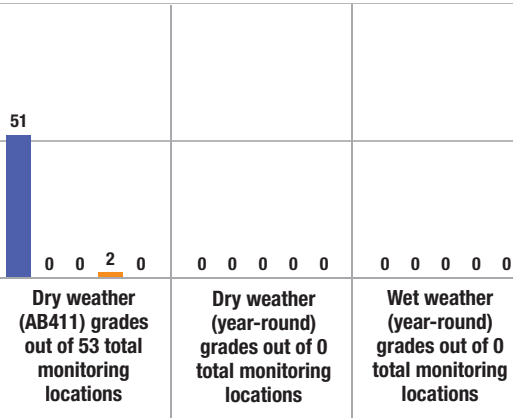
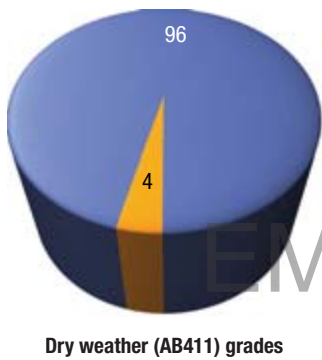


FIGURE 15.
Percentage of Grades by Time Period
for Ventura County Beaches



Key: ●=A ●=B ●=C ●=D ●=F



VENTURA

The County of Ventura Environmental Health Division (EHD) monitored 53 locations on a weekly basis from April through October, from as far upcoast as Rincon Beach (south of Rincon Creek, near the Santa Barbara County line) to a downcoast location at Staircase Beach, located at the north end of Leo Carrillo State Beach. Most samples were collected weekly between 25 to 50 yards north or south of the mouth of a stormdrain or creek. For additional water quality information visit Ventura County's Environmental Health Division website at <http://www.ventura.org/envhealth/programs/ocean/>.

When state AB411 funding was eliminated, Ventura County EHD, who relied on the majority of this funding to maintain their monitoring program, completely eliminated all ocean water quality sampling. While other counties similarly affected by the State budget searched for alternative ways in which to continue monitoring, officials in Ventura have been unable to sustain their monitoring program. For example, last year monitoring occurred at 11 surf and recreational beach locations from November 2007 through March 2008. This winter that number was zero, despite the fact that Ventura has some of the best year-round surfing beaches in the state.

While the fiscal climate of the State and its impacts on local jurisdictions is apparent, the lack of monitoring of high-use beaches such as Rincon Beach, San Buenaventura Beach, Surfer's Knoll, McGrath, Sycamore Beach, Countyline Beach, and Staircase Beach is troubling. The fact that none of the usual monitoring locations in Ventura County were

sampled this past winter forces Heal the Bay to give the county an overall grade of INCOMPLETE for year-round monitoring. Data for year-round dry and wet weather was nonexistent. In good news for surfers and swimmers, as part of the recently approved stormwater permit for Ventura County, the county will monitor a minimum of 10 beach sites a year regardless of the status of state and federal funding. AB411 2008 water quality at Ventura County beaches was excellent (Figures 14 and 15). Of the 53 water quality monitoring locations during summer dry weather, 51 (96%) locations received A grades. Only Rincon Beach 25 yards south of the creek mouth received a poor grade of D. A trends assessment for Ventura County this year could not be completed due to the elimination of all year-round monitoring locations this past year. Summer 2008 dry weather grades in Ventura County were on par with the five-year average.

Sewage Spill Summary

There was only one known sewage spill in Ventura County that was reported to Heal the Bay this past year. The spill (~600 gallons) on 11/22/2008 near Hobson County Park was caused by unidentified breaks in a sewer line during nearby sewage line repair operations.

FIGURE 16.
Number of Grades by Time Period
for Santa Barbara County Beaches

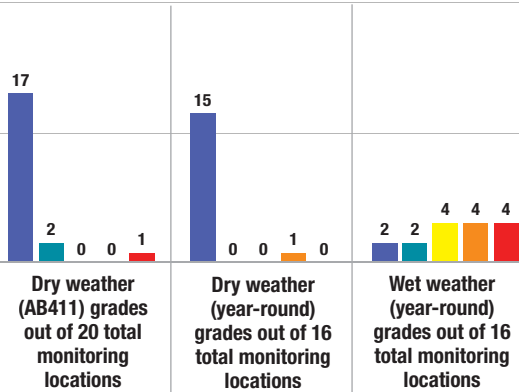
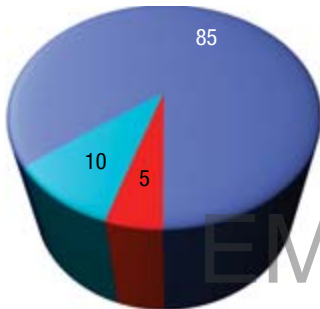
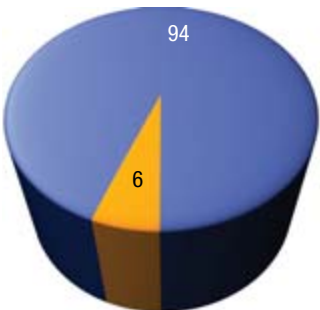


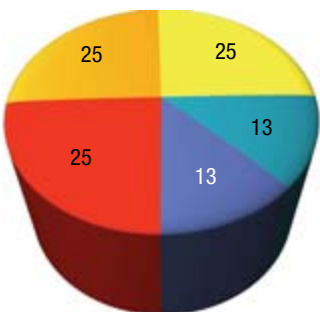
FIGURE 17.
Percentage of Grades by Time Period
for Santa Barbara County Beaches



Dry weather (AB411) grades



Dry weather (year-round) grades



Wet weather (year-round) grades

Key: ● = A ● = B ● = C ● = D ● = F

SANTA BARBARA

The County of Santa Barbara Environmental Health Agency monitored 20 locations on a weekly basis through October 2008, from as far upcoast as Guadalupe Dunes (south of the Santa Maria River outside the City of Guadalupe) to a downcoast location of Rincon at Bates Beach. Most samples were collected 25 yards north or south of the mouth of a stormdrain or creek. During the winter months, Santa Barbara Channelkeeper in conjunction with the City of Santa Barbara monitored 16 locations each week from as far upcoast as Refugio State Beach downcoast to Rincon. In a questionable risk management posture that put public health at risk, Santa Barbara County Environmental Health Services (EHS) did not use this data for purposes of posting beaches with warning signs. For additional water quality information visit Santa Barbara Channelkeeper at <http://www.sbck.org> or Santa Barbara County's Environmental Health Agency website at <http://www.sbcphd.org/ehs/ocean.htm>

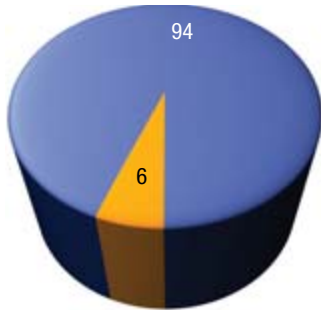
Similar to San Diego and Ventura counties, Santa Barbara County EHS stopped monitoring in November 2008 after the state funding cuts. Unlike San Diego and Ventura counties, a local environmental group, Santa Barbara Channelkeeper (SBCK), stepped in and raised money from the community to continue monitoring high-use beach locations throughout the winter. The data collected by SBCK was used in this report. For the upcoming beach going season, the County EHS intends to monitor all 21 locations only during the peak swimming season (July and August) if AB411 funds are not reinstated before then.

Summer dry weather water quality in Santa Barbara was very good. 19 of 20 monitoring locations (95%) received A or B grades. 15 of 16 (94%) received A grades for year-round dry weather. Arroyo Burro Beach had the only poor grade during summer and year-round dry grade periods. City water quality specialists conducted a sanitary survey of the watershed at Arroyo Burro but were unable to find any obvious sources of pollution. They speculate that exceedances are being caused by bacteria growing in the estuary and being discharged to the ocean when the estuaries are open.

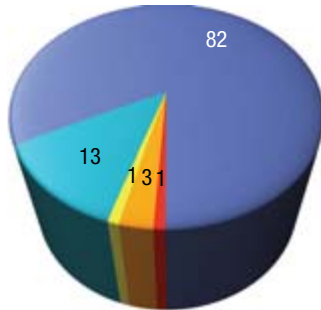
In addition to this, Santa Barbara has two ongoing CBI projects, a Laguna Channel Watershed Study and Feasibility Analysis as well as a Microbial Source Tracking Protocol Development Project. Unfortunately the source tracking protocol development project has been stalled due

SANTA BARBARA COUNTY RESULTS

FIGURE 18.
2008-2009 Santa Barbara County Dry Weather Water Quality Compared to the Five-Year Average (2003-2008)

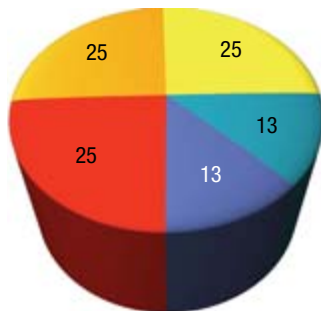


2008-2009 (dry weather)



Five-year average (dry weather)

FIGURE 19.
2008-2009 Santa Barbara County Wet Weather Water Quality Compared to the Five-Year Average (2003-2008)



2008-2009 (wet weather)



Five-year average (wet weather)



to the freeze on funding. The Laguna Channel project is designed to identify ways to improve water quality coming out of the Laguna Channel prior to it mixing with Mission Lagoon. DNA based source tracking has currently found signs of human fecal material in the storm drains and additional testing is being conducted. The final recommendation for improving water quality will likely be a UV disinfection facility.



Leadbetter Beach, Santa Barbara County

Santa Barbara's wet weather water quality was poor and below the state average. Only four of 16 locations (25%) received wet weather grades of A or B. The beaches with poor wet weather water quality are Haskell's Beach (D), Goleta Beach (F), Arroyo Burro Beach (F), East Beach at Mission Creek (D), East Beach at Sycamore Creek (F), Butterfly Beach (D), and Hammond's Beach (F)

Heal the Bay also assessed Santa Barbara County beaches by comparing this year's results with the previous five year average. This past year, Santa Barbara dry weather water quality was on par with the county average. Wet weather grades were well below average and the lowest since 2004-2005.

Sewage Spill Summary

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

Key: ● = A ● = B ● = C ● = D ● = F

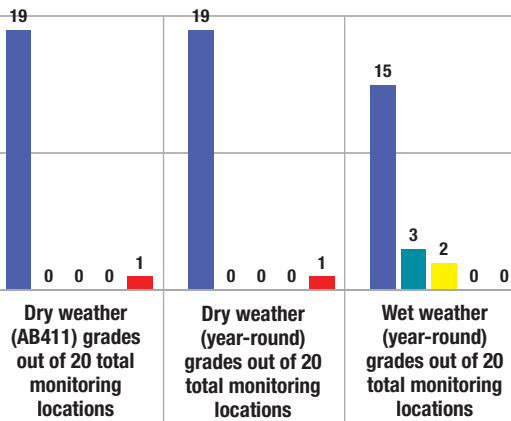
SAN LUIS OBISPO COUNTY RESULTS



SAN LUIS OBISPO

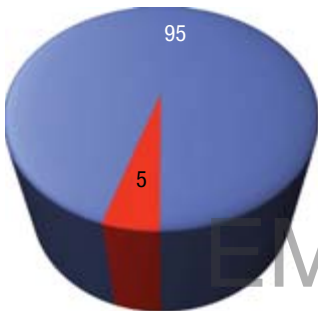
The County of San Luis Obispo Environmental Health Department consistently monitored 20 locations this year, from as far upcoast as Pico Avenue in San Simeon to a downcoast location at Pismo State Beach two miles south of Pier Avenue. Most samples were collected weekly 25 yards north or south of the mouth of a stormdrain or creek. For additional water quality information visit San Luis Obispo County's Environmental Health Department website at http://www.slopublichealth.org/environmentalhealth/beach_status.htm.

FIGURE 20.
Number of Grades by Time Period
for San Luis Obispo County Beaches

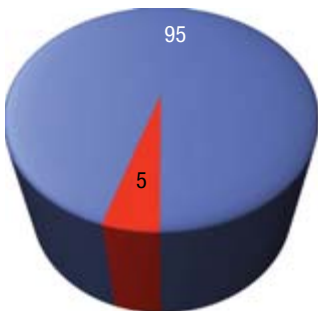


Pismo Beach, San Luis Obispo

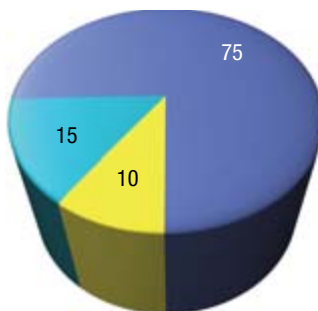
FIGURE 21.
Percentage of Grades by Time Period
for San Luis Obispo County Beaches



Dry weather (AB411) grades



Dry weather (year-round) grades



Wet weather (year-round) grades

Key: ● = A ● = B ● = C ● = D ● = F

Dry weather water quality in San Luis Obispo County was excellent. 95% of the monitoring locations received A grades (Figures 20 and 21) for both the AB411 time period and year-round dry weather. Pismo Beach Pier continued to exhibit poor water quality and scored an F grade for both AB411 and year-round dry weather. Pismo Beach by the pier is one of the most chronically polluted beaches in the state. In response to poor water quality at Pismo Beach pier, a microbial source tracking study is currently in progress to determine the source of contamination at the beach. Currently, data is not being analyzed due to the freeze in funding; however, samples are continuing to be taken in accordance with the sampling plan laid out and will be preserved for later analysis. Researchers are using ribotyping and human enterovirus and bacteroides source markers to determine human input. So far, there is no evidence of human contamination. Research will resume as soon as funding is restored.

Wet weather water quality in San Luis Obispo County was even better than last year and was again well above the state average. Only 2 of the 20 (10%) locations monitored received fair grades during wet weather. These monitoring locations were at Cayucos State Beach half-way between Cayucos Creek and the pier (C), and Sewers at Silver Shoals Drive (C).

Sewage Spill Summary

There were 4 sewage spills in San Luis Obispo County that led to beach closures this past year. The largest was approximately 30,000 gallons spilled into Orcutt Creek on 2/3/2009 that caused a precautionary closure at Avila Beach near the San Luis Creek. The beach was opened the next day. On 2/14/2009 a significant spill of 1000 gallons entered Cayucos Creek. A precautionary closure at Cayucos Beach ended the next day. Less than 250 gallons were spilled in Pismo Beach on 1/7/2009. The beach at Morro Ave. and Ocean Blvd. was closed until 1/9/09. The fourth spill was of unknown volume on 3/1/09 into San Luis Creek. There was a precautionary closure at Avila Beach near the creek outfall until the following day.



MONTEREY

The County of Monterey Environmental Health Agency monitored eight locations on a weekly basis from April through October, from as far upcoast as the Monterey Beach Hotel at Roberts Lake in Seaside to a downcoast location of Carmel City Beach in Carmel by the Sea. For additional water quality information visit Monterey County's Environmental Health Agency website at <http://www.co.monterey.ca.us/health/beaches/>.

During the summer AB411 months, all but one monitoring location in Monterey County received an A grade (Figure 22). Monterey Municipal Beach (B) scored the county's lowest dry weather grade. Lover's Point scored a dry weather A grade despite independent studies on multiple occasions suggesting that the beach has a pollution problem. These studies have tested and found the human bacteroides marker and high bacteria counts near the storm drain in the rocks there. A microbial source tracking study funded by the City of Pacific Grove is set to begin this year in the creeks that drain to or near Lover's Point. Researchers will use ribotyping and possibly caffeine detection to identify sources of contamination. Because of the inconsistency between the Environmental Health Agency data and independent studies, we recommend that the County agency move their monitoring location to 'point-zero' at the pipe outlet. This will capture data that will give a clearer picture of the water quality at this location on a weekly basis.

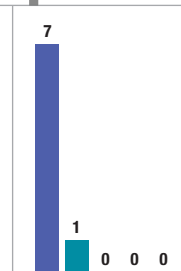
Historically, Monterey County only monitors weekly from April through October. There was insufficient year-round dry weather and wet weather data for analysis.

Sewage Spill Summary

There were no reported sewage spills in Monterey County that led to beach closures.

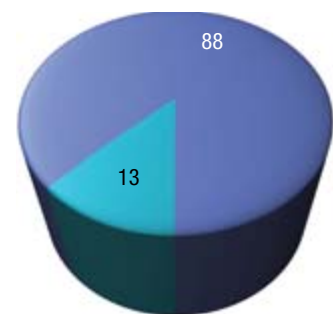
MONTEREY COUNTY RESULTS

FIGURE 22.
Number of Grades by Time Period
for Monterey County Beaches



Dry weather (AB411) grades out of 8 total monitoring locations

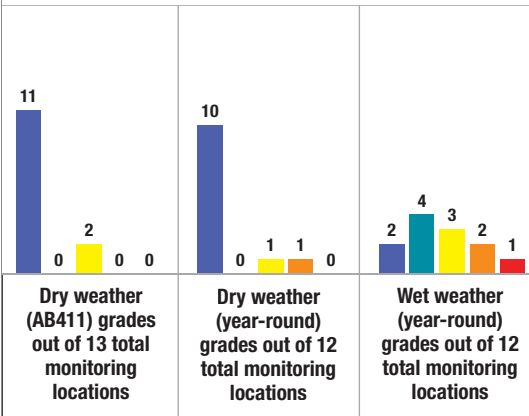
FIGURE 23.
Percentage of Grades by Time Period
for Monterey County Beaches



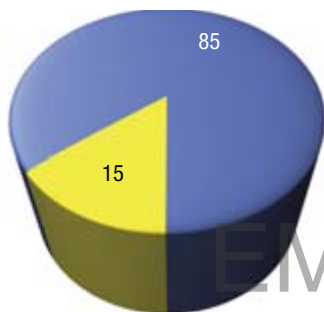
Dry weather (AB411) grades

Key: ●=A ●=B ●=C ●=D ●=F

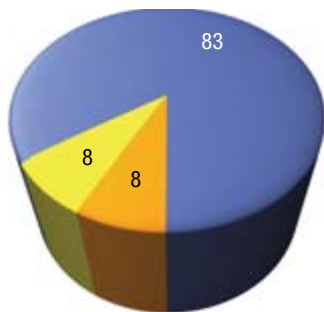
**FIGURE 24.
Number of Grades by Time Period
for Santa Cruz County Beaches**



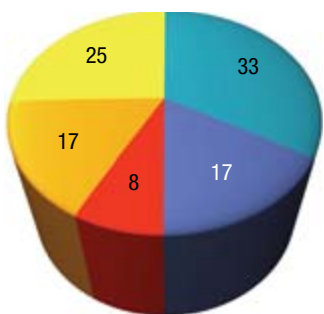
**FIGURE 25.
Percentage of Grades by Time Period
for Santa Cruz County Beaches**



Dry weather (AB411) grades



Dry weather (year-round) grades



Wet weather (year-round) grades

Key: ● = A ● = B ● = C ● = D ● = F

SANTA CRUZ

This past year the County of Santa Cruz Environmental Health Services monitored 25 shoreline locations. However, only 13 of these were monitored frequently enough to be included in this report. The others were monitored approximately once per month. The beaches monitored weekly in Santa Cruz County range from as far upcoast as Waddell Creek Beach (at Waddell Creek near Big Basin Redwood Park) to a downcoast location at Palm Beach, near the Pajaro River. Most samples are collected at the wave wash (where runoff meets surf), or 25 yards north or south of the mouth of a stormdrain or creek. For additional water quality information visit Santa Cruz County's Department of Environmental Health Services website at: <http://sccounty01.co.santa-cruz.ca.us/eh/>

Overall dry weather water quality at most beaches in Santa Cruz County was very good (Figures 24 and 25). During the summer AB411 months, all of Santa Cruz beaches received A grades, except Cowell Beach (C) and Capitola Beach west of the jetty (C). Year-round dry weather water quality was similar except Cowell Beach dropped to a D grade.

Wet weather water quality for Santa Cruz County was slightly above the state average this past year. Six of the 12 (50%) locations with wet weather data received an A or a B grade. Monitoring locations at Cowell Beach (C), Santa Cruz Main Beach at the San Lorenzo River (C), Seabright Beach (D), Capitola Beach west of the jetty (F), Capitola Beach east of the jetty (D), and New Brighton Beach (C) comprised the county's fair to poor grades wet weather grades.

Last summer, the City of Capitola completed a treatment wetland as well as two dry weather diversions on ¼ acre of city owned property adjacent to Soquel Lagoon in the downtown area. This wetland is expected to directly impact water quality in Soquel Creek with outflows to Capitola beaches while the diversions will provide treatment of dry weather flows and the low volume and first flush storm events. Although the project has been finished, the freeze on state funding has impacted monitoring activities to determine the wetland's efficacy at reducing exceedances of bacteria standards.

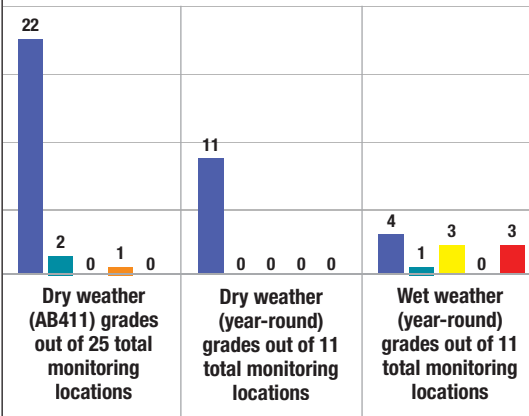
Sewage Spill Summary

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

SAN MATEO COUNTY RESULTS



FIGURE 26.
Number of Grades by Time Period for San Mateo County Beaches



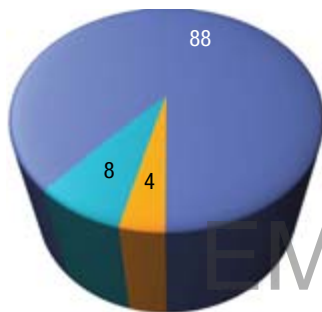
SAN MATEO

The County of San Mateo Environmental Health

Department monitored 25 ocean and bayside locations on a weekly basis during the summer months, from as far upcoast as Sharp Park Beach in Pacifica to a downcoast location of Gazos Beach at Gazos Creek. 11 of these locations were monitored frequently enough to earn year-round grades. Samples were collected at a distance of 25 yards north or south of the mouth of a stormdrain or creek. For additional water quality information visit San Mateo County's Department of Environmental Health website at

http://www.co.sanmateo.ca.us/smc/departement/home/0,,1954_191102_187763,00.html

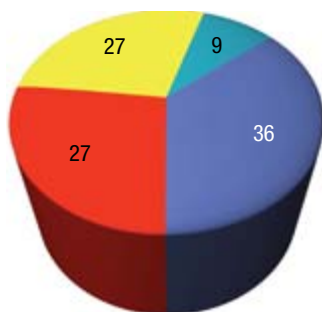
FIGURE 27.
Percentage of Grades by Time Period for San Mateo County Beaches



Dry weather (AB411) grades



Dry weather (year-round) grades



Wet weather (year-round) grades

This past year, San Mateo beaches had very good summer dry weather water quality (Figures 26 and 27). 22 of the 25 (88%) beach monitoring locations received A grades. The historically problematic Venice Beach at Frenchman's Creek (A) has showed improved water quality for the third year in a row during dry weather. The County's only poor grade during summer dry weather was found at Lakeshore Park behind the Recreation Center. Water samples at this location are taken directly from the lagoon which has sporadic circulation.

Wet weather water quality in San Mateo this past year was fair to poor. Only 45% of beaches received A or B grades during wet weather. Linda Mar Beach at San Pedro Creek (F), Pillar Point Harbor at Westpoint Avenue (F) and Venice Beach at Frenchman's Creek (F) received the county's worst wet weather grades.

Sewage Spill Summary

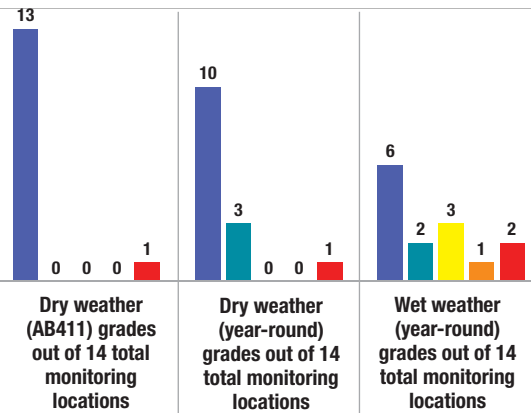
There were no reported sewage spills in San Mateo County that led to beach closures this past year.

Key: ● = A ● = B ● = C ● = D ● = F

SAN FRANCISCO COUNTY RESULTS



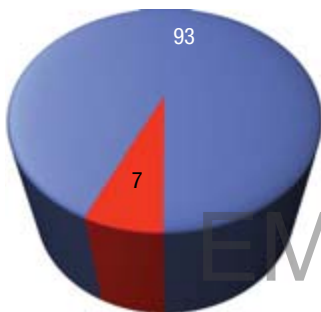
FIGURE 28.
Number of Grades by Time Period
for San Francisco County Beaches



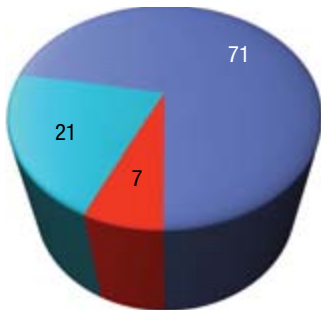
SAN FRANCISCO

The County of San Francisco, in partnership with the San Francisco Public Utilities Commission, continued its weekly monitoring program for ocean and bay shoreline locations. The monitoring program is funded in part through an Environmental Protection Agency BEACH grant program. The County monitored 14 locations on a weekly basis year-round, from Aquatic Park Beach (Hyde Street Pier) to Ocean Beach at Sloat Blvd., and sites at Candlestick Point. For additional water quality information please visit the San Francisco Public Utilities Commission website at: <http://sfwater.org/custom/lims/beachmain1.cfm>.

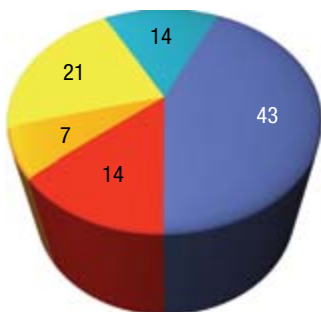
FIGURE 29.
Percentage of Grades by Time Period
for San Francisco County Beaches



Dry weather (AB411) grades



Dry weather (year-round) grades



Wet weather (year-round) grades

San Francisco exhibited excellent water quality during the AB411 time period. All beaches except Baker Beach at Lobos Creek (F) received A grades. Year-round dry weather water quality at San Francisco beaches this past year was also very good. 13 of the 14 locations received A or B grades (see Figures 28 and 29). Again, Baker Beach at Lobos Creek was the one exception. Multiple coliform and enterococcus exceedances in late July and most of August contributed to the low summer and year-round dry weather grade for this location.



San Francisco

Wet weather water quality at San Francisco monitoring sites was poor but well above the state average. 8 of the 14 (57%) locations received A or B grades for wet weather, but six locations (43%) received fair to poor marks. Wet weather water quality this year was similar to last year's and better than San Francisco's five-year average for wet weather grades.

Key: ●=A ●=B ●=C ●=D ●=F



Background Information from the San Francisco Public Utilities Commission

The City and County of San Francisco have a storm water infrastructure that occurs in no other California coastal county -- a combined sewer and stormdrain system (CSS). This system provides treatment to most of San Francisco's stormwater flows. All street runoff during dry weather receives full secondary treatment and all storm flow receives at least the wet weather equivalent of primary treatment, while most storm flows receive full secondary treatment before being discharged through a designated outfall.

During heavy rain events, the CSS can discharge combined treated urban runoff and sewage waste water, typically comprised of 94% treated stormwater and 6% treated sanitary flow. In an effort to reduce the number of combined sewer discharges (CSDs), San Francisco has built a system of underground storage, transport, and treatment boxes to



Ocean Beach, San Francisco County

handle major rain events. CSDs are legally, quantitatively, and qualitatively distinct from raw sewage spills that occur in communities with separate sewers.

In addition to most CSS stormwater discharges being treated, they are also of much shorter duration and lower volume than discharges in communities with separate stormdrain systems. Because of the CSS, San Francisco's ocean shoreline has no flowing stormdrains in dry weather throughout the year, and therefore is not subject to AB411 monitoring requirements, but 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 stormdrains.

Sewage Spill Summary

Combined sewer discharges in San Francisco are legally allowed as the result of rainfall. There were 3 permitted combined sewer discharge events between April 1, 2008 and March 31, 2009 that resulted in portions of San Francisco beaches being posted (not every discharge affected every beach). Oceanside CSDs occurred on 11/1/2008, 2/15/2009, and 3/5/2009 affecting Fort Funston, Ocean Beach, and Baker Beach. The March 5th 2009 event also impacted Candlestick Point.

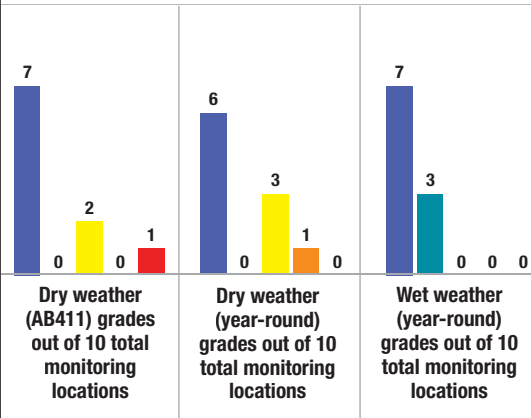
EAST BAY COUNTIES RESULTS



EAST BAY BEACHES – CONTRA COSTA AND ALAMEDA

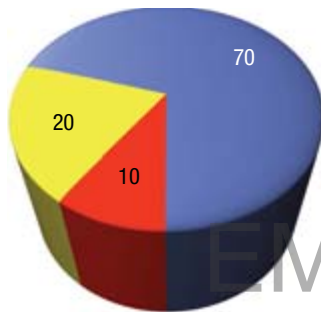
Heal the Bay once again includes grades for water quality data for monitoring locations in both Contra Costa and Alameda counties this year. We would like to thank the East Bay Regional Park District for providing the data for analysis.

FIGURE 30.
Number of Grades by Time Period for Alameda and Contra Costa Counties

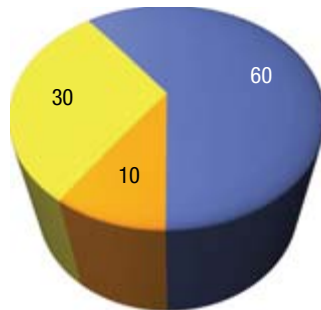


Alameda

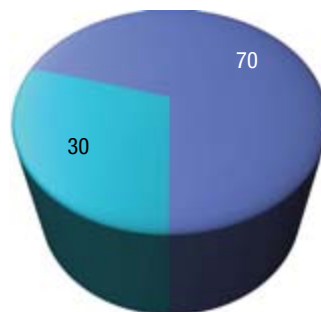
FIGURE 31.
Percentage of Grades by Time Period for Alameda and Contra Costa Counties



Dry weather (AB411) grades



Dry weather (year-round) grades



Wet weather (year-round) grades

Monitoring locations in Alameda County scored very good water quality grades overall for all time periods. Water quality at Keller Beach was fair to poor during both summer and year-round dry weather due mostly to geometric mean exceedances of the state standard for total coliforms.

Wet weather grades for monitoring locations in both Contra Costa and Alameda counties were very good. All locations received either an A or B grade during year-round wet weather.

Sewage Spill Summary

Two sanitary sewer overflows (SSO) resulted in brief beach closures of Crown Beach locations on 6/18/08 and 3/10/09 (3 days each). The 3/10/09 spill was the only SSO with a known volume (250 gallons). Keller Beach experienced 2 day closures due to two separate SSOs on 2/23/09 and 3/5/09. Keller Beach was also closed as a precaution to an SSO on 2/4/09 – 2/6/09. The overflow was determined to have never reached the beach. Crown Beach was also closed for one day in June 2008 due to a relatively small oil spill.

Key: ● = A ● = B ● = C ● = D ● = F



MARIN

Marin County's water quality monitoring program gathered data from 27 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. As usual in most northern counties, there was little or no monitoring during the winter months. For additional water quality information, visit Marin County's Department of Environmental Health website at <http://www.co.marin.ca.us/ehs>

Summer dry season water quality was excellent at all beach monitoring locations in Marin County. (Figure 32 and 33). All locations in Marin County received A grades for the AB411 time period during the summer of 2008.

There was an insufficient amount of non-AB411 dry weather, and wet weather data for further analysis.

Sewage Spill Summary

Recent sewage spills to receiving waterbodies in Marin County have been unusually large and bay users should be aware. We stated in our last report that in January of 2008, two major sewage spills dumped over 5.5 million gallons into Richardson Bay in Marin County. Beaches were closed as a precaution for about 10 days from Schoonmaker to Rodeo Beach. Subsequent to the spills, the San Francisco Bay Regional Water Quality Control Board initiated an investigation that found the Sewerage Agency of Southern Marin (SASM) responsible for the spill due to inadequate equipment maintenance, and lack of proper expenditures to reliably operate a wastewater treatment plant. Ultimately, SASM was fined \$1.6 million dollars and issued a Clean-up and Abatement order.

Now this year, in February 2009, the Sausalito-Marín City Sanitary District treatment plant at Fort Baker in the Golden Gate National Recreational Area released an estimated 720,000+ gallons of partially treated wastewater into San Francisco Bay, just south of Richardson Bay. The

MARIN COUNTY RESULTS

FIGURE 32.
Number of Grades by Time Period
for Marin County Beaches

27

Dry weather (AB411) grades out of 27
total monitoring locations

FIGURE 33.
Percentage of Grades by Time Period
for Marin County Beaches

100

Dry weather (AB411) grades

Key: ●=A ●=B ●=C ●=D ●=F



sewage spill resulted in weeklong closures at Baker Beach at Horseshoe Cove and Schoonmaker Beach. The cause of the sewage spill was found to be a defective pipe. Once again, the San Francisco Bay Regional Water Quality Control Board had to issue a Cleanup and Abatement order to a sewage treatment plant for unauthorized



Stinson Beach, Marin County

discharges. One of the major items in the cleanup order is the production of a technical report by Sausalito-Marín City Sanitary District to assess the Discharger's treatment and collection system facilities in order to demonstrate that the ongoing threat of discharge of wastes into waters of the State and the threat to create a condition of pollution and nuisance have been truly abated. The report requires three elements: (1) assess other treatment and collection system facilities that pose a threat of discharge of wastes into waters of the State and a threat to create a condition of pollution and nuisance, (2) identify preventive and corrective measures the Discharger can implement in the short-term and long-term to abate these threats, and most importantly, (3) develop a time schedule to implement short-term and long-term preventive and corrective measures identified.

SONOMA COUNTY RESULTS



FIGURE 34.
Number of Grades by Time Period
for Sonoma County Beaches

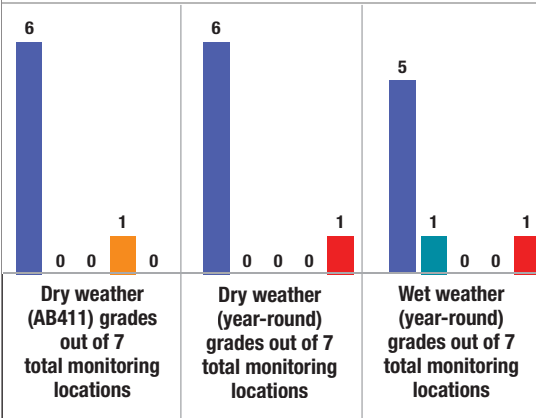
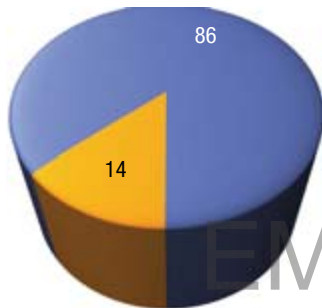
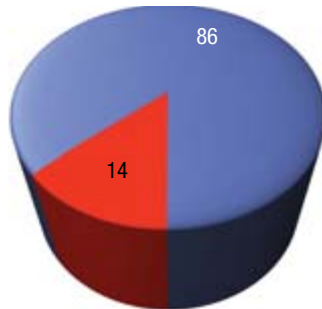


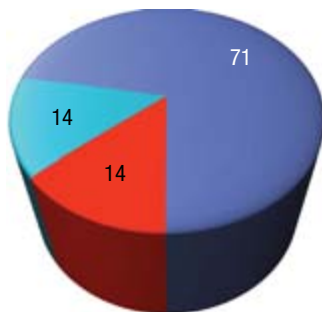
FIGURE 35.
Percentage of Grades by Time Period
for Sonoma County Beaches



Dry weather (AB411) grades



Dry weather (year-round) grades



Wet weather (year-round) grades

Key: ● = A ● = B ● = C ● = D ● = F

SONOMA

The County of Sonoma, Environmental Health Division monitored seven locations year-round from as far upcoast as Gualala Regional Park Beach to a downcoast location at Doran Regional Park Beach in Bodega Bay. Samples were collected 25 yards north or south of the mouth of a stormdrain or creek on a weekly basis. For additional water quality information visit Sonoma County's Department of Environmental Health website at: http://www.sonoma-county.org/health/eh/ocean_testing.htm

Summer dry weather water quality conditions at all beaches was very good (six A's), with the usual exception of Campbell Cove (Figure 34 and 35). Located at the entrance to Bodega Harbor in Bodega Bay, Campbell Cove again received a poor grade (D) for the AB411 time



Trinidad Beach, Sonoma County

period. Campbell Cove State Park Beach continues to suffer from extremely poor water quality during late summer. This year, the consistent exceedances began in early September 2008 and lasted to the beginning of January 2009. Similar excellent water quality in early summer degrading in the late summer has occurred at this location for at least the past seven years. More on Campbell Cove can be found in the report entitled "The Bodega Bay-Campbell Cove Tidal Circulation Study, Water Quality Testing, and Source Abatement Measures Project". This report can be found on Sonoma County's Environmental Health Department's web site.

All sites in Sonoma County were monitored frequently enough to score year-round grades this past year. Year-round grades in Sonoma were similar to the summer grades. All beaches except Campbell Cove scored A or B grades during both year-round dry and wet weather.

Sewage Spill Summary

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



MENDOCINO

This past year, Mendocino County monitored four locations frequently enough during the AB411 time period to earn grades. These locations include MacKerricher Beach State Park at Mill Creek, Pudding Creek ocean outlet, Big River near Pacific Coast Highway, and Van Damme State Park at the Little River. All 4 beaches received an A+ grade for the AB411 time period. The Environmental Health Department, with assistance from the Mendocino County Chapter of the Surfrider Foundation, monitored sampling locations from April through December. Not all sampling locations were monitored regularly during this time period. The 4 that were monitored consistently are included in this report.

Data for year-round dry and wet weather was insufficient for further analysis.

Sewage Spill Summary

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



Mendocino County

MENDOCINO COUNTY RESULTS

FIGURE 36.
Number of Grades by Time Period
for Mendocino County Beaches

4

Dry weather (AB411) grades out of 4
total monitoring locations

FIGURE 37.
Percentage of Grades by Time Period
for Mendocino County Beaches

100

Dry weather (AB411) grades

Key: ●=A ●=B ●=C ●=D ●=F

HUMBOLDT COUNTY RESULTS

FIGURE 38.
Number of Grades by Time Period

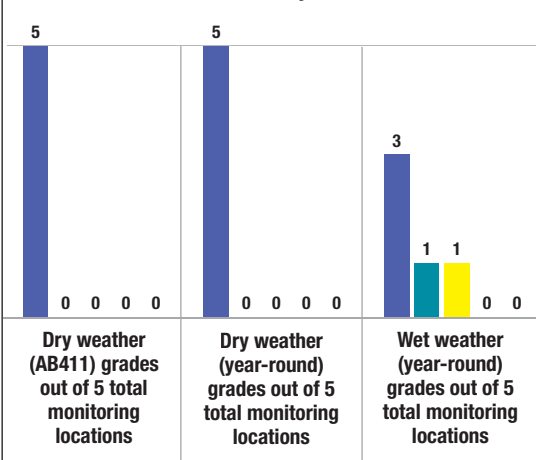


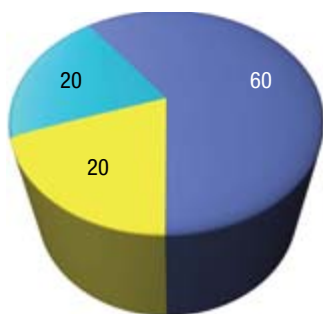
FIGURE 39.
Percentage of Grades by Time Period for Humboldt County Beaches



Dry weather (AB411) grades



Dry weather (year-round) grades



Wet weather (year-round) grades

Key: ● = A ● = B ● = C ● = D ● = F

HUMBOLDT



In an effort to proactively protect public health, the Humboldt County Division of Environmental Health (DEH) moved their monitoring locations to ‘point zero’ in 2006. Five locations are sampled in the mixing zone on a weekly basis from April through October. Throughout the winter season, sampling is normally limited to approximately twice a month. The monitoring program is funded by the Environmental Protection Agency’s National BEACH Program. For additional water quality information, please visit Humboldt County’s Dept. of Environmental Health website at www.co.humboldt.ca.us/health/envhealth/beachinfo.

Humboldt County’s dry weather water quality showed great improvement over the same time period a year ago. All five monitoring locations returned to A grades this past year during dry weather (Figures 38 and 39). During wet weather, all but one location received A or B grades. Clam Beach County Park near Strawberry Creek showed the worst wet weather water quality with a C grade. However, the water quality at Strawberry Creek outlet improved dramatically during dry weather this past year.

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Sewage Spill Summary

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

DEL NORTE

Historically, monitoring in Del Norte County was conducted in the Crescent City area at Pebble Beach, Crescent City Harbor, and Crescent Beach. Despite our best efforts, for the past five years, Heal the Bay has been unsuccessful in obtaining any data to include in this report.

Sewage Spill Summary

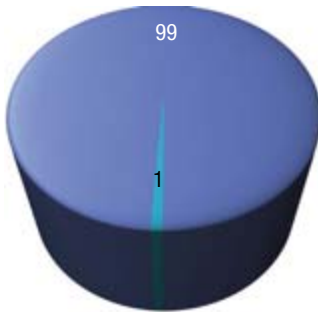
The county did not provide Heal the Bay with a summary of beach closures due to sewage spills.

BEACH POLLUTION PATTERNS

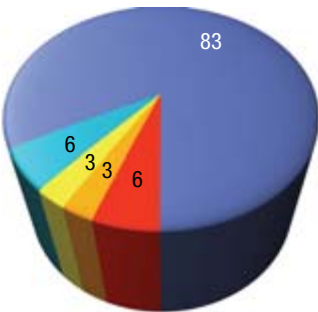


BEACH TYPES AND WATER QUALITY

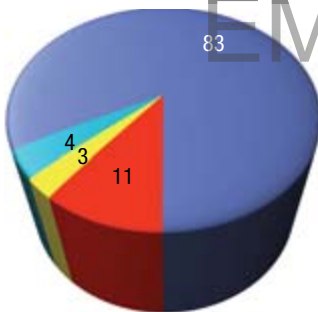
FIGURE 40.
Percentage of Grades by Beach Type from
April 2008 through October 2008 (AB411)



Open ocean beaches (79 beaches analyzed)



Stormdrain impacted beaches (200 beaches analyzed)



Enclosed beaches (80 beaches analyzed)

Key: ●=A ●=B ●=C ●=D ●=F

Heal the Bay analyzed the Southern California data (Santa Barbara to San Diego County) to determine differences in water quality based on beach type. Most Southern California beaches were divided into three categories: open ocean beaches; beaches adjacent to a creek, river, or stormdrain (natural or concrete); and beaches located within enclosed waterbodies. The grades were analyzed for all three time periods: AB411 time period (April through October), dry weather year-round, and wet weather year-round. Figures 41 and 42 illustrate the grades by percent during dry weather for both AB411 (April through October) and year-round conditions.

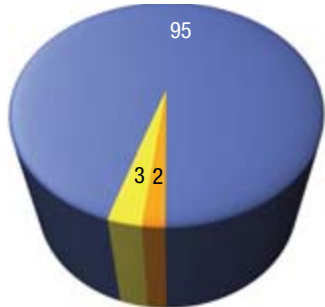
For the ninth year in a row, this comparison demonstrates that water quality at open ocean beaches is far superior to water quality at enclosed and stormdrain impacted beaches. In essence, a swimmer has a nearly 100% chance of finding excellent water quality at an open ocean beach with no known pollution source during dry weather.

At enclosed beaches and those affected by a stormdrains, the chance of swimming in excellent water quality drops dramatically. Heal the Bay always recommends swimming at least 100 yards from flowing stormdrains and avoiding these beaches altogether within 72 hours of a rain event. Although enclosed beaches appear safe and inviting to children, parents should research water quality conditions carefully before allowing their children to swim at these beaches.

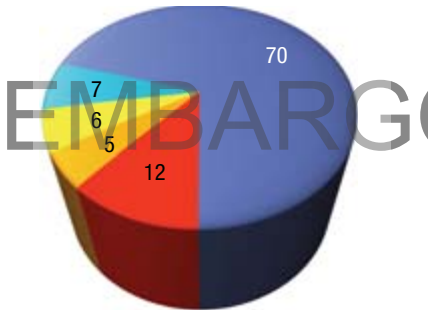
The greatest disparity in water quality between beach types is seen during wet weather. 67% of open ocean monitoring locations received good grades, compared to 28% at stormdrain impacted locations, and only 17% at enclosed beaches during winter wet weather.

BEACH POLLUTION PATTERNS

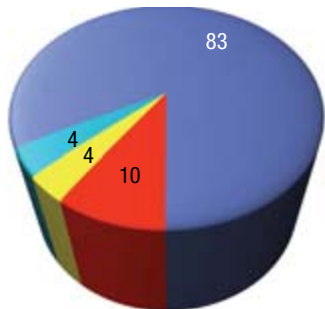
FIGURE 41.
Percentage of Grades by Beach Type During
Year-Round Dry Weather



Open ocean beaches (58 beaches analyzed)

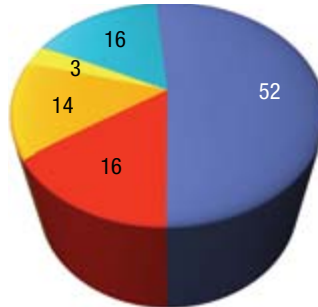


Stormdrain impacted beaches (128 beaches analyzed)

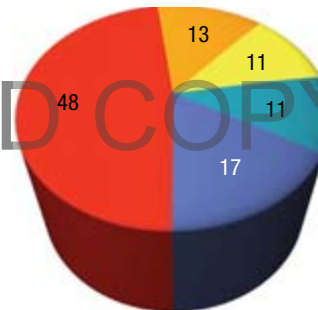


Enclosed beaches (52 beaches analyzed)

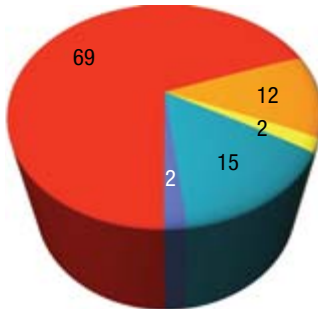
FIGURE 42.
Percentage of Grades by Beach Type
During Wet Weather



Open ocean beaches (58 beaches analyzed)



Stormdrain impacted beaches (128 beaches analyzed)



Enclosed beaches (52 beaches analyzed)

Key: ●=A ●=B ●=C ●=D ●=F



BEACH REPORT CARD IMPACTS 2008-2009

Swimmer Health Effects Study

Last summer, Heal the Bay joined the Southern California Coastal Water Research Project, UC Berkeley, the Orange County Sanitation Districts and others for the second year of a three-year, \$4.5 million health effects study on swimmers at runoff contaminated beaches. The studies funded by the State of California, National Institute of Health, National Oceanic and Atmospheric Administration, USEPA, and the city of Dana Point, have so far focused on two chronically polluted beaches: Doheny Beach in Dana Point and Avalon Beach on Catalina Island. Both of these beaches are usually on Heal the Bay's annual list of Beach Bumpers. As the research group enters into the third year of the study, focus will shift to the chronically contaminated Surfrider Beach in Malibu. This study should be completed by 2010.

This isn't Heal the Bay's first involvement with a critical health effects study. We participated in the 1995 Santa Monica Bay Restoration Commission epidemiology study led by Dr. Robert Haile at USC that found that one out of every 25 people that swam in front of a flowing stormdrain came down with stomach flu or an upper respiratory infection. This new study will follow a similar design comparing the health risks of swimming in polluted water near a fecal bacteria source (creek or stormdrain) versus swimming at a clean beach nearby. Also, the incidence of illness in swimmers compared to non-swimmers at the same beach will be analyzed. Beachgoers will be interviewed three times: as they arrive, as they are leaving and 10 to 12 days after their visit to the beach. Researchers will assess whether there were any adverse health outcomes such as stomach flu, upper respiratory infections, ear aches or skin rashes during that time period.

This study is the most comprehensive health effects study ever undertaken in terms of the number of microbes that will be analyzed. Over 30 analytical techniques are used to analyze beach water for over a dozen different microbes. Nearly all of these microbes have never been used before in a health effects study. Researchers from around the country have analyzed samples from water at Doheny and Avalon beaches and will continue to participate at Surfrider beach.

The potential ramifications of this study could be enormous as the EPA is currently developing new national beach water quality criteria that are due in 2012. The results of this study could have a tremendous influence on the development of national criteria that will drive beach water quality monitoring, health warnings, discharge permit limits, water quality assessments for impaired waters, and Total Maximum Daily Loads for decades to come. In addition, EPA is conducting two epidemiological studies this summer; one in South Carolina and one in Puerto Rico. The South Carolina study will be the EPA's first large scale epidemiology study on swimmers in runoff polluted waters. The Puerto Rico study will be the first EPA tropical waters health effects study ever performed. These studies will also be used to inform the beach water quality criteria.



BEACH Act Update

In 2006, the NRDC sued the USEPA over its failure to implement the requirements of the 2000 BEACH Act. In particular, EPA failed to develop new national beach water quality criteria including criteria for rapid indicator methods, by Congress's specified deadline of 2005. In April, 2008, NRDC won an important summary judgment ruling on their BEACH Act litigation. A Federal judge held that EPA violated the BEACH Act by failing to meet statutory deadlines. As a result, NRDC and EPA reached a settlement of the lawsuit last September.

The highlights of the settlement include the following. EPA agreed to complete epidemiology studies in Alabama and Rhode Island and perform additional epidemiology studies at an urban runoff impacted beach and a tropical, sewage impacted beach. At the National Beaches conference in April, EPA announced the locations of these beaches. Also, EPA agreed to use Quantitative Microbial Risk Assessment techniques to assess the potential health risks from exposure to pathogens at an agriculturally impacted freshwater beach. The new statutory deadline for the Beach water quality criteria is 2012. By the same date, EPA will definitely have a new method for the rapid detection of at least one fecal indicator that makes up the 2012 criteria.

In Congress, amendments to the BEACH Act were introduced by Congressman Pallone (HR 2093) and Senator Lautenberg (S 878). Similar bills were introduced last year, but they did not make it to former President Bush' desk. The bills codify the EPA-NRDC settlement, increase BEACH Act funding from \$30 million a year to \$60 million a year (although the Bush administration typically only funded the program for \$10 million annually), and allow funds to be used for sanitary surveys, source tracking and source abatement in addition to monitoring.

Heal the Bay will advocate for the following changes in the bills: The rapid method definition should be changed from 2 to 4 hours because of current technological constraints. It should clearly state that the funds should be used for implementation of a protective monitoring program, but they also should be allowed to be used for public notification, database management, source tracking, sanitary surveys, and source abatement programs. To get 100% funding, states must implement a program with the following minimal elements – use of EPA criteria, public notification, and implementation of a model minimum monitoring program. EPA will develop this program by the end of 2010. Otherwise, states are only eligible for 50% funding. Ideally, the model monitoring program would be specified using the recommendations Heal the Bay made to EPA in 2004 (weekly monitoring at heavily frequented beaches at point zero near potential beach pollution sources, samples shall be collected at ankle to shin depth and analyzed for microbes recommended in the EPA criteria). Also the development of a guidance document by the end of 2010 that includes all aspects of what constitutes a good beach program including “closing beaches in the event of a raw sewage spill.” Heal the Bay will advocate for these BEACH Act changes and for passage of the bill by the end of the 2009 session.



Ramirez and Escondido Creek Study

Under AB 538, counties and cities must take steps to identify and stop sources of persistent bacterial pollution. When faced with lasting and slightly mysterious bacterial problems at local beaches, municipalities are required to undertake a source identification study, which helps pinpoint the source of bacteria and provide some insight on how to fix the problem. The County of Los Angeles decided to track sources of the chronic pollution problems at Paradise Cove and Escondido Beach in Malibu. Beginning in March 2007, Los Angeles County, working with SCCWRP and Heal the Bay designed and began implementation of a Source ID study at each of these creeks (Ramirez and Escondido).

Teams from Heal the Bay and L.A. County Department of Public Works collected water samples from numerous sites in both watersheds. Samples were analyzed for fecal indicator bacteria in Heal the Bay's laboratory, and processed for future viral and DNA research to help narrow the potential sources. Unfortunately, after the extremely dry southern California winter of 2006-2007, these watersheds were not exhibiting their normal flow regime, and the study was put on hiatus until normal rainfall levels returned. This March, phase three of the study has resumed. The scope of the field sampling has focused on targeted problem areas, and samples are being run concurrently for DNA analysis. Despite the last few years of low water levels, we hope to pinpoint the relevant source(s) of bacterial input to these beaches soon.

Heal the Bay is pleased to be a part of this project, and we commend L.A. County for taking steps to identify and abate pollution in both of these watersheds.

Santa Monica Bay Total Maximum Daily Loads (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 AB411 time period by July 15, 2006 or face penalties. Marina del Rey's Mother's Beach and Back Basins had a compliance deadline of March 18, 2007. The 100% compliance requirement for the AB411 time period (from April 1st to October 31st) means that all Santa Monica Bay beaches must be safe for swimming every day for the seven months from April through October. These requirements were in the fecal bacteria Total Maximum Daily Loads for Santa Monica Bay and Mother's Beach.

Unfortunately, the compliance deadlines came and went, and many of Santa Monica Bay's beaches, namely, Surfrider Beach, Santa Monica Pier, Mother's Beach, Dockweiler State Beach at Ballona Creek mouth, Marie Canyon, Santa Monica Beach at Pico/Kenter and the Redondo Pier still had elevated bacteria levels above the TMDL limits. In order for the Bacteria TMDL pollution limits to be readily enforceable, the Regional Water Quality Control Board



Surfrider Beach, Los Angeles County



incorporated them into the language of the L.A. County Storm Water Permit on September 14, 2006 and August 9, 2007. Cities and other dischargers are now subject to fines of over \$10,000 per day per violation.



Santa Monica Beach at Pico/Kenter

On March 4, 2008, in a precedent-setting move, the Los Angeles Regional Water Quality Control Board sent strongly worded notices of violation and section 13383 Orders to 20 cities and Los Angeles County to clean up Santa Monica Bay beaches. The cities of Santa Monica, Los Angeles, and Malibu are among those threatened with fines of up to \$10,000 per day per violation. The action marks the first time nationally that a regulatory body has threatened fines to ensure cities' compliance with beach bacteria limits from a TMDL.

Some cities and the County have petitioned the State Water Resources Control Board to review the 13383 Orders. Several of the cities did not meet the deadline for submission, so their petitions were dismissed. The cities that did meet the deadline are holding the petitions in abeyance, and the County has requested a review. We are anxious for the Regional Board to continue moving forward on enforcement, as it has been over a year since the violation notices were first sent.

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While some cities have made noticeable improvements in identifying and rectifying sources of ocean pollution, measures to fix chronically polluted beaches like Dockweiler State Beach at Ballona Creek mouth and Surfrider have been inadequate. Instead of challenging potential heavy fines for each bacteria limit violation, we are hopeful that the cities and Los Angeles County will take appropriate aggressive actions to ensure that bacteria limits are not exceeded and that Santa Monica Bay beaches are safe for beach-goers in the summer months. The Beach Report Card will continue to identify beaches that exceed bacteria limits and track compliance efforts.

In addition, soon after the Regional Water Quality Control Board incorporated Bacteria TMDL pollution limits into the language of the L.A. County Storm Water Permit, the County filed a petition on the newly adopted permit. They held this permit in abeyance for almost two years. On September 18, 2008, the County took the petition out of abeyance and asked for formal review by the State Board. The petition is currently in active review by the State Board. It basically challenges the format of the Regional Board hearing that took place. This action by the County marks another attempt to derail regulations and take a step backwards in water quality protection. The prudent step for the County to pursue is to drop their appeal and bring up issues of narrow concern about the beach bacteria TMDL when it is reopened this year.



RECOMMENDATIONS FOR COMING YEAR

California needs a sustainable funding source for beach monitoring

The California budget crisis has demonstrated the precarious position of California's beach monitoring program. The mandatory funding provisions of AB 411 are tied to the state and federal government's ability to fund monitoring. The State and Federal efforts to find temporary funding through federal stimulus dollars and through California bond funding should help the beach monitoring program limp through 2009 and 2010, but the funding is anything but sustainable.

The Federal share has been stuck at \$10 million nationally on an annual basis because Congress has not appropriated the full \$30 million amount under the BEACH Act. That needs to change under the Obama administration. The BEACH Act amendment legislation, which could increase national annual funding to \$60 million, needs to pass and get fully implemented by Congress and the administration.

However, while Federal funding helps, it is not the sole solution to the problem. The Governor and the legislature need to fully fund the program, ideally in a manner that doesn't compete with the General Fund. A small beach protection fee added to beach parking fees and adding beach monitoring requirements for beaches impacted by stormdrains and creeks to municipal stormwater permit monitoring programs are possible ways to supplement funding for beach monitoring programs.

Another funding aspect of the program that needs to be augmented is the overall budget. The State and Federal funds have never covered the true cost of monitoring program implementation. Counties need to provide these updated costs soon, so the state and beach stakeholders can develop an effective, sustainable funding program. Relying on incomplete estimates from 1999 has not proven effective, especially after funding was cut by 10% in 2007.

All Beaches Should be Monitored at Point Zero

Los Angeles County was one of the first counties in the state (along with Humboldt County and portions of San Diego) to modify its monitoring program to collect samples directly in front of flowing stormdrains and creeks. This change was a result of the Santa Monica Bay Beach Bacteria TMDL. Other counties collect water samples from directly at the creek, river, or stormdrain ocean outlets to as far as 83 yards from the drain, and anywhere in between. Children often play directly in front of stormdrains and some kids even play in the runoff filled ponds and lagoons. Monitoring at "point zero" is the best way to ensure the health risks to swimmers are minimized. If the water is clean at point zero, then the public will know the entire beach is safe for swimming.



Adopt Year-Round Postings at Beaches with Flowing Storm Drains

In Southern California, there is little consistency among counties monitoring stormdrain impacted beaches on where to collect a sample, when to post a warning sign, and where to post the warning sign. State regulations require posting a beach when a water sample exceeds the single sample standard. The state gives local health departments discretion to post a beach if the 30-day geometric mean standard is exceeded. Using both the single sample and 30-day geometric mean standards is far more protective of public health than using one standard. The following demonstrates the differences in county practices: the counties of Santa Barbara, Ventura, and Los Angeles and the City of Long Beach will only post a beach if there is a single sample exceedance; Orange County will post a beach on either a single sample or 30-day geometric mean exceedance; and San Diego County will initially only post a beach on a single sample exceedance but will continue that posting if subsequent sampling causes an exceedance of either the single sample or 30-day geometric mean standard. Finally, the placement of warning signs is subject to where the samples are collected and therefore highly variable. This inconsistency between counties means that public health protection varies from county to county.

To address this issue, Heal the Bay recommends permanently posting warning signs along the entire length of beach adjacent to flowing stormdrains where water quality may fail to meet the state health standards for either the single sample and 30-day geometric mean. This recommendation is based on the results of the Storm Drain Plume Dispersion study Heal the Bay completed with the Southern California Coastal Water Research Project, and represents a change from the current posting protocol implemented by health agencies. The study investigated how the dispersion of fecal bacteria discharged from stormdrains into Santa Monica Bay is affected by ocean and discharge conditions. The results of this study demonstrate that the length of beach unsafe for swimming is beach-specific depending on numerous factors, including local beach topography, and can vary over the course of a few hours. The study results also indicate that exceedances of the health standards can occur along the beach at distances much greater than the distance covered by monitoring stations routinely sampled by local health agencies. Based on these results, Heal the Bay believes the protocol typically used by county health agencies for posting warning signs may not be adequately notifying swimmers of potential health risks around freshwater outlets in Southern California.

We have the following three sequential recommendations to improve the current system warning the beach going public that water quality may exceed state health standards:

1. The beach adjacent to a polluted stormdrain or freshwater outlet should be posted with warning signs over the entire length of beach where water quality is affected by the plume of fecal bacteria discharging from the drain.
2. Because the length of beach where water quality may be impacted by high fecal bacteria levels is beach-specific, we recommend this length be determined by completing multiple sampling events at multiple locations around the drain under varying oceanographic conditions. The



goal of the plume fate and transport efforts is to better understand the length of beach impacted by polluted runoff in dry weather.

3. Routine monitoring should lead to health warnings posted along the entire length of beach potentially impacted by runoff. Under the current system, signs are often posted only directly in front of a drain, even though unsafe water quality conditions may persist 100 yards or more from the drain.

Advocate for Increased Funding for California's Shoreline Monitoring Program

State allotments of funding for monitoring and public notification are based on three criteria: the length of the beach season, the amount of beach miles, and estimated beachgoers. Although California received one of the largest BEACH Act grants for this program, the allotment criteria used by EPA has two shortcomings that have prevented California from receiving additional funds to cover the cost of monitoring.

The first problem with the allotment methodology is the lack of criteria for strength of monitoring program or public notification. EPA does not provide an incentive or disincentive to move states beyond the basic baseline water quality monitoring and public notification program. For example, states may monitor for only one fecal indicator (that isn't part of the 1986 EPA criteria) or may choose to not notify the public about water quality exceedances in a timely manner, yet those states will continue to receive full funding compared to states like California, that monitor for three fecal criteria, and notify the public immediately of any water quality exceedances. Also, just as in California, all beaches that receive raw sewage spills should be closed immediately. The EPA needs to provide greater proportional funding to those states that implement the aforementioned model program in order to provide an incentive for improving public health protection. The EPA doesn't even have eligibility criteria for states to get monitoring funding. We believe that no state should get funding unless they meet minimum criteria. In this year's federal BEACH Act legislation, Heal the Bay will push for full funding for all states that implement a minimum model monitoring program and 50% funding for those states that do not.

The second problem is that Congress and the administration never provide full BEACH Act program funding. The BEACH Act allocates \$30 million nationally, yet Congress only appropriates \$10 million a year. The draft bills in the House and the Senate allocate \$60 million for the program which is a substantial increase. However, full appropriation of the \$60 million is needed for program success and the public health protection of the hundreds of millions of people that use our nation's beaches annually.

Continue advocating for the implementation of a statewide comprehensive stormwater monitoring program (SB72)

SB72 (2001 Kuehl) was sponsored by Heal the Bay. This law standardizes stormwater monitoring. A uniform and comprehensive monitoring program is critical to the success of the state's stormwater



programs. Currently, every county or municipality covered under the municipal stormwater permit requirements has different monitoring programs. The discrepancy means that no one can complete a status and trends analysis of stormwater in the state. The data are not comparable from permittee program to permittee program and often not even from year to year. SB72 also clarifies what information to consider when determining which constituents should be monitored in municipal runoff. Also, current monitoring programs do not provide adequate information to determine if municipalities and industries are in compliance with their stormwater permits and the Clean Water Act. This law set clear and specific minimum requirements for municipalities and industries for sampling:

- 1) Standardized methods for collection of storm water samples
- 2) Standardized methods for analysis of storm water samples
- 3) Requirement that sample analysis be completed by a state certified laboratory
- 4) Standardized reporting format
- 5) Standard Quality Assurance and Quality Control programs
- 6) Minimum detection limits.

The law required that the above requirements be addressed by January 2003, over five years ago. To date, a technical working group has only provided partial recommendations for the municipal stormwater program requirements of SB72, and the state has done nothing to set up a similar process for industrial stormwater. The State Water Resources Control Board still has the opportunity to add SB72 standardization requirements into the General Industrial Stormwater Permit, but the draft from over three years ago did not include meaningful requirements. Currently, the state has failed to comply with SB72 requirements. The state's failure to comply with the SB72 requirements is causing major problems in the current storm water permit cycle that started with San Diego County, Orange County, San Francisco County, Ventura County and Los Angeles County in the near future. Although some of the monitoring programs in the new permits are improved, the monitoring programs must assure compliance with water quality standards and they should be comparable from county to county.

The State Water Board must release final AB885 regulations

The year 2000 law required the SWRCB to set final regulations for siting, monitoring and water treatment performance for California's on-site water treatment systems (OWTS) by January of 2004. While the regulatory process has been extremely controversial and incredibly slow, water quality problems caused by onsite wastewater treatment systems continue to be a major risk to public health and aquatic life. Last year, the SWRCB released draft regulations and a draft Environmental Impact Report (DEIR). The regulations and the DEIR were roundly opposed by everyone from septic system owners to health officials to environmental groups. The draft regulations were far too strict and expensive for the onsite wastewater treatment systems that posed little risk to groundwater or surface water, and they were not strict enough for systems that cause or contribute to water quality impairment.



The Santa Rosa workshop had 1700 residents in opposition of the proposed draft regulations because of cost issues. Malibu residents also came out in force to oppose because of cost. Due to the way the regulations were written, all onsite wastewater treatment systems adjacent to impaired waters would need disinfection systems to reduce bacteria AND denitrification systems to reduce nutrient loads. The cost of these advanced systems is approximately \$45K. More importantly, denitrification systems are not needed in areas that don't have nutrient problems and disinfection systems aren't needed in areas that don't have fecal bacteria impairment. The SWRCB's one size fits none approach led to a great deal of the controversy.

One of our greatest concerns is that the regulations do not require on-site system upgrades for all systems within 600 feet of fecal bacteria and nutrient impaired waters or tributaries upstream of the impaired waters. Also, there is no clear regulatory deadline for existing systems that have degraded water quality and pose health risks. The latest draft shifted the burden of proof to the Regional Boards to identify on-site wastewater treatment systems that are degrading water quality. The Regional Boards do not have the resources to meet this requirement. The draft regulations do not apply to tributaries that cause or contribute to fecal bacteria and/or nutrient impairment problems downstream. Although these regulations would apply throughout the state, they will have special importance at California beaches and coastal watersheds that are impaired for fecal bacteria. Based on the SWRCB's continual backsliding on the proposed regulations, Heal the Bay is extremely concerned that the last seven years of negotiations and debate on AB 885 regulations will not result in improved water quality and reduced public health risks.

Because of the strong opposition to the draft regulations, the SWRCB is rewriting the regulations. They should be finalized and approved by July 2010. Heal the Bay provided substantial recommendations on a new three tiered approach to regulating onsite wastewater treatment systems. There would be limited requirements for systems that pose negligible risk to groundwater, rivers and beaches and more monitoring, inspections, and onsite system site and construction requirements for systems that pose a moderate risk to groundwater and surface water. Finally, those systems that cause or contribute to water quality impairment would have more stringent monitoring requirements, inspections, and advanced treatment requirements. There are 1.2 million systems in the state and very few of them cause or contribute to water quality impairment, so the cost of compliance with the needed law would drop over a billion dollars a year.

Continue to encourage monitoring agencies to monitor water quality at popular beaches year-round (beyond the AB411 required dates of April-October).

Year-round monitoring provides winter beachgoers, oftentimes surfers who frequent the beach for winter swells, with important information about water quality. In California there is no set beach season. Surfers, swimmers, divers, wind-surfers, and kayakers use the water year-round. All of these ocean enthusiasts have the right to know about water quality at their favorite beaches on a year-round basis.



Continue to advocate for the state to enforce sanitary survey protocol requirements as established in AB538 and the California Ocean Plan

In an effort to do more than just notify beachgoers of potential water quality problems at their favorite beaches per AB411, AB538 was passed to require sanitary surveys (source investigations) to be completed at those beaches where water quality problems persisted. The idea was to identify the sources of beach water quality impairment, and implement necessary strategies to abate the pollution. The requirement of a source investigation was not a new concept created by AB538 in 1999 – the Ocean Plan has required this procedure since 1988. The issue is that the state never enforces or requires municipalities to implement these surveys when exceedances occur. The Ocean Plan states that “...if a shore station consistently exceeds a coliform objective or exceeds a geometric mean...the Regional Board shall require the appropriate agency to conduct a survey to determine if that agency’s discharge is the source of the contamination.” (State Water Resources Control Board Ocean Plan 1997).

AB538 states that source investigations shall be conducted “if bacteriological standards are exceeded in any three weeks of a four-week period, or, for areas where testing is done more than once a week, 75% of testing days that produce an exceedence of those standards.” Although there have been a number of source identification efforts for chronically polluted beaches throughout the state, many chronically polluted beaches have never been investigated. Examples of completed sanitary surveys are Mission Bay, Huntington Beach, Rincon, Campbell Cove, Baby Beach, Kiddie Beach, Santa Monica Pier, Long Beach, Malibu Lagoon, Santa Monica Canyon, Cabrillo Beach, Avalon, and a few other locations. Currently, source identification at Redondo Pier, Ramirez Canyon and Escondido Beach is ongoing. Identifying sources of fecal bacteria pollution is critical before successful source abatement efforts can be undertaken.



ACKNOWLEDGEMENTS

This report and the entire Beach Report Card program would not be possible without the cooperation of the many monitoring and public agencies throughout California. These agencies include: Humboldt County Environmental Health Division; Mendocino County Environmental Health Department; Sonoma County Environmental Health Division; Marin County Environmental Health Services; San Francisco Department of Public Health Department; San Francisco Public Utilities Commission; East Bay Regional Park District; San Mateo County Environmental Health Division; San Mateo County Resource Conservation District; Santa Cruz County Environmental Health Services; Monterey County Environmental Health Division; San Luis Obispo County Environmental Health Services; Santa Barbara County Environmental Health Services; Santa Barbara ChannelKeeper; Ventura County Environmental Health Division; City of Los Angeles Environmental Monitoring Division; the Los Angeles County Sanitation Districts; the Los Angeles County Department of Health Services; the City of Long Beach Department of Health and Human Services Environmental Health Division; South Orange County Wastewater Authority; County of Orange Environmental Health; Orange County Sanitation District; San Diego County Department of Environmental Health Land and Water Quality Division; the Encina Wastewater Authority; the San Elijo Joint Powers Authority; the City of Oceanside; the City of San Diego Storm Water Pollution Prevention Division; the City Of San Diego EM&TS Division; the Southern California Coastal Water Research Project, and the State Water Resources Control Board.

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We would also like to thank the San Francisco Public Utilities Commission, San Mateo County Health Department, Santa Barbara Channelkeeper (<http://sbck.org/>), San Diego County's Recreational Water Program, and San Diego County's WildCoast (<http://www.wildcoast.net>) for their contributions to this report.

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APPENDIX A

Heal the Bay’s Annual Beach Report Card Methodology

Four times in the 18 year history of the program Heal the Bay has modified its Beach Report Card grading methodology to better characterize local beach water quality. Amendments to the grading methodology include: 1) the inclusion of the geometric mean into the calculation, 2) a firm zero to 100 point scale, 3) greater significance given to the most recent sample(s) relative to past samples, and 4) greater weight for enterococcus and the total to fecal ratio relative to total coliform and fecal coliform. These modifications stem from comments made by California’s State Water Resources Control Board and the Beach Water Quality Workgroup. With these improvements to the methodology, Heal the Bay’s Beach Report Card grading system is now endorsed by the State Water Resources Control Board and the Beach Water Quality Workgroup as an effective way to communicate beach water quality to the public.

The new 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 Commission¹ in the 1996 health effects studies of Santa Monica Bay beachgoers; and the implementation of standard deviations for each indicator bacteria threshold developed by the Southern California Coastal Water Research Project and Orange County Sanitation Districts during the 1998 Southern California Bight Study². Each threshold is based on the prescribed standards set in the California Department Health Service’s Beach Bathing Water Standards³.

Table 1

Grade	Points
A	90-100%
B	80-89%
C	70-79%
D	60-69%
F	≤59%

As seen in Table One, the new methodology continues to use a standard A through F grading system, and grades are now 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 Two. In order for

Table 2

‘Total Points Available’ by Component	
Geometric Mean	29 points
Single Sample Standard	71 points
Total	100 points



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 4 dry weather samples collected within the allotted time frame (for the Annual Report Card, this is April 2006–March 2007). Wet weather data is graded separately from dry weather data, and does not 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 California’s Beach Bathing Standards for the geometric mean. The standards for each of these criteria are presented in **Table Three** (second column). Each geometric mean criterion exceeded for the time frame is assigned a specific percentage of points lost. These amounts are presented in **Table Three** (third column). Non-exceedances are given 0%. The percentage of points lost from each of the three criteria are then added together and multiplied by the ‘Total Available Points’ (any sum of percentages exceeding 100% automatically loses all 29 points available in the geometric mean component). If the number of ‘Total Points Lost’ is less than 29, then the frequency of the sample location’s exceedances of the 30-day geometric mean is taken into consideration. If a given location exceeded any state 30-day geometric mean standard more than 20% of sample days, then an additional 10 points are lost for the geometric mean component (up to but not to exceed 29 total points). If the location exceeded any state 30-day geometric mean standard for more than 40% of sample days, then another 10 points are lost for the geometric mean component (up to but not to exceed 29 total points). If the location exceeds any state 30-day geometric mean standard for more

Table 3: Calculating the Total Points Lost for the Geometric Mean Component

Indicator Exceeded	California Beach Bathing Water Standard*	% of Total Available Points Lost** Due to Exceedance	Total Available Points
Enterococcus	35	80%	29
Fecal Coliform	200	40%	
Total Coliform	1,000	40%	

* Colony forming units per 100 milliliters of ocean water
 ** Total Percentage Points Lost cannot add up to be > 1



than 50% of samples days, then the location automatically loses all 29 points available for 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

Table 4: Single Sample Gradient Thresholds in cfu/100ml*

Indicator Bacteria	Slight T - 1 s.d.**	Moderate T + 1 s.d.	High > T + 1 s.d.	Extreme very high risk
Total Coliform	6,711-9,999	10,000*** -14,900	>14,900	na
Fecal Coliform	268-399	400 -596	>596	na
Enterococcus	70-103	104 -155	>155	na
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

** standard deviation

*** **Bold** numbers are the California State Health Department standards for a single sample

na – not applicable

Southern California Coastal Water Research Project and Orange County Sanitation District as part of the 1998 Southern California Coastal Bight Study (see **Table Four**).

‘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 Five**. Non-exceedances are given zero 0%. The ‘percentage of points lost’ from each of the four criteria for each sample during the time period are added together and divided by

Table 5: Calculating the Total Points Lost for the Single Sample Standard Component

Indicator Exceeded	Slight % Points Lost	Moderate % Points Lost	High % Points Lost	Extreme % Points Lost	Total Available Points*
Total Coliform	10%	30%	40%	na	71 points
Fecal Coliform	10%	30%	40%	na	
Enterococcus	20%	40%	60%	na	
Ratio (when Total ≥ 1,000)	25%	50%	75%	100%	



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.

The points available from each applicable component are added together to become the 'Total Available Points'. 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

$$\% \text{ Grade} = \frac{\text{Total Points Available} - \text{Total Points Lost}}{\text{Total Points Available}}$$

The points available from each applicable component are added together to become the 'Total Available Points'. 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.

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APPENDIX B

2008-2009 ANNUAL BEACH REPORT CARD HONOR ROLL

Year-round monitored California Beaches with zero bacterial standards exceedances

HONOR ROLL

San Diego County

Oceanside, projection of Surfrider Way
Oceanside, projection of Pier View Way
Oceanside, projection of Tyson Street
Oceanside, projection of Forster Street
Oceanside, 500'N. of Loma Alta Creek outlet
Oceanside, projection of Cassidy Street
Oceanside, St. Malo Beach (downcoast from St. Malo Road)
Carlsbad, projection of Cerezo Drive
Carlsbad, projection of Palomar Airport Rd.
Carlsbad, Encina Creek outlet
Carlsbad, projection of Ponto Drive
Carlsbad, projection of Poinsettia Lane
Mission Beach, Belmont Park
Ocean Beach Pier, northside at Newport Ave.
Coronado, projection of Ave del Sol
Coronado, Silver Strand

Orange County

Surfside Beach, projection of Sea Way
Sunset Beach, projection of Broadway
Bolsa Chica Beach across from the Reserve Flood Gates
Huntington Harbor, Trinidad Lane Beach
Newport Bay, Newport Dunes-West
Newport Bay, Sapphire Avenue Beach
Newport Bay, Abalone Avenue Beach
Newport Bay, 19th Street Beach
Newport Bay, 15th Street Beach
Newport Bay, 10th Street Beach
Newport Bay, Alvarado/ Bay Isle Beach
Little Corona Beach
Pelican Point
Crystal Cove (CSDOC)
Crystal Cove (weekly)



HONOR ROLL

Orange County *(Continued)*

Muddy Creek
El Morro Beach
Crescent Bay Beach
Laguna Main Beach
Table Rock
Laguna Lido Apt.
9th St. 1000 Steps Beach
Dana Strand Beach (AWMA)
Ocean Institute Beach (SERRA)
San Clemente, Trafalgar Street Beach
Dana Point Harbor, Guest Dock - End (West Basin)

Los Angeles County

El Pescador State Beach, between Lachusa and Los Aliso creeks
Encinal Canyon at El Matador State Beach
Zuma Beach at Zuma Creek mouth
Pena Creek at Las Tunas County Beach
Will Rogers State Beach at 17200 PCH (1/4 mile east of Sunset drain)
North Westchester Storm Drain at Dockweiler State Beach
Dockweiler State Beach at Imperial Hwy drain
Manhattan State Beach at 40th Street
Manhattan Beach Pier drain
Malaga Cove, Palos Verdes Estates-weekly
Palos Verdes (Bluff) Cove, Palos Verdes Estates
Long Point, Rancho Palos Verdes
Portuguese Bend Cove, Rancho Palos Verdes

Santa Barbara County

Carpinteria State Beach
Rincon Beach north of creek mouth

San Luis Obispo County

Pico Ave., San Simeon
Morro Bay City Beach, Morro Creek (south side)
Morro Bay City Beach, 75 feet north of main parking lot
Pismo Beach, projection of Wadsworth Street
Pismo State Beach, 330 yards no. of Pier Ave.
Pismo State Beach, projection of Pier Ave.
Pismo State Beach, 571 yards south of Pier Avenue, end of Strand Way
Pismo State Beach, 2 miles south of Pier Ave., Post 4



HONOR ROLL

Santa Cruz County

Natural Bridges State Beach
Twin Lakes Beach

San Mateo County

Montara State Beach, at Martini Creek
Surfer's Beach, southend of riprap
Roosevelt Beach, south end of parking lot
Francis Beach at the foot of the steps

San Francisco County

Crissy Field Beach West 202.5 station

Mendocino County

Gualala Regional Park Beach
Black Point Beach
Goat Rock State Park Beach
Salmon Creek State Park Beach
Doran Regional Park Beach

Humboldt County

Trinidad State Beach near Mill Creek
Mad River Mouth (north)

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APPENDIX C

2008-2009 Beach Report Card Grades By County

San Diego County	AB411 (April – Oct.)	Dry Year-round	Wet Year-round
San Onofre State Beach, San Mateo Creek outlet	A+		
San Onofre State Beach, San Onofre Creek outlet	A		
Oceanside, Harbor Beach (projection Harbor Dr.)	A	A	A+
Oceanside, San Luis Rey River outlet	A	A	A+
Oceanside, projection of Surf rider Way	A+	A+	A+
Oceanside, projection of Pier View Way	A+	A+	A+
Oceanside, projection of Tyson Street	A+	A+	C
Oceanside, projection of Wisconsin Street	A+		
Oceanside, projection of Forster Street	A+	A+	D
Oceanside, 500'N. of Loma Alta Creek outlet	A+	A+	D
Oceanside, Buccaneer Beach (at Loma Alta Crk.)	A+	A	F
Oceanside, projection of Cassidy Street	A+	A+	B
Oceanside, St. Malo Beach (downcoast from St. Malo Road)	A+	A+	A
Oceanside, Buena Vista Lagoon outlet	A		
Carlsbad, projection of Carlsbad Village Drive	A+		
Carlsbad, projection of Tamarack Ave.	A+		
Carlsbad, warm water jetty	A+		
Carlsbad, projection of Cerezo Drive	A+	A+	A+
Carlsbad, projection of Palomar Airport Rd.	A+	A+	A+
Carlsbad, Encina Creek outlet	A+	A+	A+
Carlsbad, projection of Ponto Drive	A+	A+	A+
Carlsbad, projection of Poinsettia Lane	A+	A+	A+
Carlsbad, Batiquitos Lagoon outlet	A		
Encinitas, Moonlight Beach (Cottonwood Creek outlet)	A		
Encinitas, Swami's Beach (Seacliff Park)	A+		
Encinitas, San Elijo State Park, Pipes surf break	A+		
Encinitas, San Elijo State Park (proj. Liverpool Dr.)	A+	*	*
Cardiff State Beach, San Elijo Lagoon outlet	A		

County "Beach Bummers" names appear in bold.

*Monitoring location sampled year-round. No grade assigned. HitB unable to acquire winter data in time for this report.



Heal the Bay

San Diego County	AB411 (April – Oct.)	Dry Year-round	Wet Year-round
Cardiff State Beach Charthouse parking (slight S. of Kilkeny)	A+	*	*
Cardiff State Beach, Las Olas (100 yds. south of Charthouse)	A+	*	*
Cardiff State Beach, Seaside State Park	A+	*	*
Solana Beach, Tide Beach Park (proj. Solana Vista Dr.)	A+	*	*
Solana Beach, Fletcher Cove (proj. Lomas Santa Fe Dr.)	A+	*	*
Solana Beach, Seascape Surf Beach Park	A+		
Del Mar, San Dieguito River Beach	A		
Del Mar, projection of 15th Street	A+		
Torrey Pines, Los Penasquitos Lagoon outlet	A+		
La Jolla (north), Scripps Pier	A		
La Jolla Shores, projection of Ave De La Playa	A+		
La Jolla, La Jolla Cove	A		
La Jolla, South Casa Beach	A+		
Coast Blvd. (the Gazebo)	A+		
La Jolla, Ravina (south of Nicholson Pt.)	A		
Windansea Beach, projection of Playa Del Norte	A		
Pacific Beach, P.B. Point (downcoast of Linda Way)	A		
Pacific Beach, Tourmaline Surf Park (proj. of Tourmaline St.)	A		
Pacific Beach, Crystal Pier (projection of Garnet)	A		
Pacific Beach, projection of Grand Ave.	A+		
Mission Beach, Belmont Park	A+	A+	A
Mission Bay, Mariners Basin (proj. of Balboa Ct.)	A+		
Mission Bay, Bonita Cove (east cove)	B		
Mission Bay, Bahia Point-northside (apex of Gleason Rd.)	A+		
Mission Bay, Ventura Cove	A+		
Mission Bay, Sail Bay (proj. of Whitting Ct.)	A+		
Mission Bay, Fanuel Park (proj. of Fanuel St.)	A+		
Mission Bay, Wildlife Refuge near fence (proj. of Lamont St.)	A		
Mission Bay, Campland (west of Rose Creek)	A		
Mission Bay, DeAnza Cove (mid-cove)	B		
Mission Bay, Visitor's Center (proj. of Clairemont Dr.)	A		

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County "Beach Bummers" names appear in bold.

*Monitoring location sampled year-round. No grade assigned. HtB unable to acquire winter data in time for this report.



Heal the Bay

San Diego County	AB411 (April – Oct.)	Dry Year-round	Wet Year-round
Mission Bay, Comfort Station north of Leisure Lagoon	A+		
Mission Bay, Leisure Lagoon	A		
Mission Bay, Tecolote Shores drain	A+		
Mission Bay, Tecolote Playground (watercraft area)	A+		
Mission Bay, Fiesta Island Bridge (south side)	A+		
Mission Bay, Vacation Isle Ski Beach	A+		
Mission Bay, Vacation Isle North Cove Beach	B		
Ocean Beach, San Diego River outlet (Dog Beach)	A	A	F
Ocean Beach, Stub Jetty	A	A	F
Ocean Beach Pier, northside at Newport Ave.	A+	A+	B
Ocean Beach, Ocean Pier (proj. of Narragansett Ave.)	A	A	A
Ocean Beach, projection of Bermuda Ave.	A	A	B
Sunset Cliffs, projection of Ladera Street	A+	A	A+
Point Loma, Point Loma Treatment Plant	A+	A	A
Point Loma, Lighthouse	A+	A	A+
San Diego Bay, Shelter Island (Shoreline Beach Park)	A		
San Diego Bay, Spanish Landing Park beach	A		
San Diego Bay, Bayside Park (projection of J Street)	A		
San Diego Bay, Silver Strand	A		
San Diego Bay, Glorietta Bay Park at boat launch	A		
San Diego Bay, Tidelands Park (proj. of Mullinix Dr.)	A		
Coronado at North Beach (near navy fence at Ocean Blvd.)	A+		
Coronado at North Beach (NASNI Beach)	A+		
Coronado, projection of Loma Ave.	A+		
Coronado, projection of Ave del Sol	A+	A+	D
Coronado, Silver Strand	A+	A+	F
Imperial Beach, Camp Surf Jetty	A+		
Imperial Beach, projection of Carnation St.	A+	A	F
Imperial Beach, Imperial Beach Pier	A		
Imperial Beach, southend of Seacoast Dr.	A+	A	F
Tijuana Slough NWRS, 3/4 mi. N of TJ River	A+	A	F

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County "Beach Bummers" names appear in bold.



San Diego County	AB411 (April – Oct.)	Dry Year-round	Wet Year-round
Tijuana Slough NWRs, Tijuana Rivermouth	A	F	F
Border Field State Park, proj. of Monument Rd.	A+	D	F
Border Field State Park, Border Fence (northside)	A	C	F

Orange County	AB411 (April – Oct.)	Dry Year-round	Wet Year-round
Seal Beach, projection of 1st Street	A	A	C
Seal Beach, projection of 8th Street	A	A	B
Seal Beach Pier, 100 yards south of pier	A	A	A
Seal Beach, projection of 14th Street	A	A	A
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 at the downcoast end of the State Beach	A	A	A
Huntington City Beach, Bluffs	A	A	B
Huntington City Beach, projection of 17th Street	A	A	B
Huntington City Beach, Jack's Snack Bar	A	A	B
Huntington City Beach, projection of Beach Blvd.	A	A	B
Huntington State Beach, projection of Newland St. (SCE Plant)	A	A	C
Huntington State Beach, projection of Magnolia Street	A	A	D
Huntington State Beach, projection of Brookhurst Street	A	A	C
Santa Ana River Mouth	A	A	F
Newport Beach, projection of Orange Street	A+	A	D
Newport Beach, projection of 52nd/53rd Street	A+	A	B
Newport Beach, projection of 38th Street	A	A	B
Balboa Beach, projection of 15th/16th Street	A	A	A
Balboa Beach Pier	A	A	A
Balboa Beach, The Wedge	A+	A	A
Huntington Harbor, Mother's Beach-Orange County	A	A	A
Huntington Harbor, Trinidad Lane Beach	A+	A+	B
Huntington Harbor, Sea Gate	A	A	B

County "Beach Bummers" names appear in bold.



Orange County	AB411 (April – Oct.)	Dry Year-round	Wet Year-round
Huntington Harbor, Humboldt Beach	A+	A	D
Huntington Harbor, Davenport Beach	A	A	D
Huntington Harbor, Coral Cay Beach	A+	A	D
Huntington Harbor, 11th Street Beach	A	A	D
Newport Bay, Newport Dunes-North	A	A	F
Newport Bay, Newport Dunes-East	A	A	F
Newport Bay, Newport Dunes-Middle	A+	A	F
Newport Bay, Newport Dunes-West	A+	A+	F
Newport Bay, Bayshore Beach	A+	A	F
Newport Bay, Via Genoa Beach	A	A	F
Newport Bay, Lido Yacht Club Beach	A+	A	F
Newport Bay, Garnet Avenue Beach	A	A	F
Newport Bay, Sapphire Avenue Beach	A+	A+	F
Newport Bay, Abalone Avenue Beach	A+	A+	F
Newport Bay, Park Avenue Beach	A	A	F
Newport Bay, Onyx Avenue Beach	A	A	F
Newport Bay, Ruby Avenue Beach	A	A	F
Newport Bay, Grand Canal	A	A	F
Newport Bay, 43rd Street Beach	A	A	F
Newport Bay, 38th Street Beach	A+	A	F
Newport Bay, 19th Street Beach	A+	A+	F
Newport Bay, 15th Street Beach	A+	A+	F
Newport Bay, 10th Street Beach	A+	A+	F
Newport Bay, Alvarado/ Bay Isle Beach	A+	A+	F
Newport Bay, N Street Beach	A	A	F
Newport Bay, Harbor Patrol Beach	A	A	F
Newport Bay, Rocky Point Beach	A	A	D
Corona Del Mar (CSDOC)	A	A	A
Little Corona Beach	A+	A+	A+
Pelican Point	A+	A+	A+
Crystal Cove (CSDOC)	A+	A+	B

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Orange County	AB411 (April – Oct.)	Dry Year-round	Wet Year-round
Crystal Cove (weekly)	A+	A+	C
Muddy Creek	A+	A+	A
El Morro Beach	A+	A+	A+
Emerald Bay	A	A	A+
Crescent Bay Beach	A+	A+	A+
Laguna Main Beach	A+	A+	A
Laguna Hotel	A	A	A
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	B
Aliso Creek- 1000' north	A	A	B
Aliso Creek- outlet	A+	A	F
Aliso Creek- 1000' south	A	A	C
Camel Point	A+	A	A
Table Rock	A+	A+	A
Laguna Lido Apt.	A+	A+	A
9th St. 1000 Steps Beach	A+	A+	A
Three Arch Bay	A	A	A
Monarch Beach (North)	A	A	F
Salt Creek Beach	A	A	B
Dana Strand Beach (AWMA)	A+	A+	A
Ocean Institute Beach (SERRA)	A+	A+	B
North Beach - Doheny	A	C	F
Doheny Beach (No. of San Juan Creek)	A	C	F
San Juan Cr/Ocean Interface	F	F	F
Doheny Beach (So. of San Juan Creek)	D	F	F
1000' south of SERRA Outfall	A	A	F
2000' south of SERRA Outfall	B	F	F
3000' south of SERRA Outfall	A	C	F

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Heal the Bay

Orange County	AB411 (April – Oct.)	Dry Year-round	Wet Year-round
4000' south of SERRA Outfall	A	A	F
5000' south of SERRA Outfall	A	B	F
7500' south Outfall - Projection of Camino Estrella	A	B	D
10000' south of SERRA Outfall, #5505 Beach Road	A	A	D
14000' south of SERRA Outfall, San Clemente Poche Beach	F	F	F
20000' south Outfall - San Clemente, proj. of Avenida Pico	A	A	F
San Clemente, Lifeguard Building, north of San Clemente Pier	A	A	D
San Clemente, Trafalgar Street Beach	A+	A+	B
San Clemente, Avenida Calafia	A	A	F
San Clemente, Las Palmeras	A+	A	D
Dana Point Harbor, West End - Baby Beach	A	A	C
Dana Point Harbor, Buoy Line - Baby Beach	A	A	B
Dana Point Harbor, Swim Area - Baby Beach	A	A	B
Dana Point Harbor, East End - Baby Beach	A	A	B
Dana Point Harbor, Guest Dock - End (West Basin)	A+	A+	B
Dana Point Harbor, Youth Dock	A	A	B

Los Angeles County	AB411 (April – Oct.)	Dry Year-round	Wet Year-round
Leo Carrillo Beach at Arroyo Sequit Creek mouth	A	A	B
Nicholas Beach at San Nicholas Canyon Creek mouth	A	A	B
El Pescador State Beach, between Lachusa and Los Aliso creeks	A+	A+	A+
Encinal Canyon at El Matador State Beach	A+	A+	A+
Broad Beach at Trancas Creek mouth	A	A	F
Zuma Beach at Zuma Creek mouth	A+	A+	D
Walnut Creek, projection of Wildlife Rd. (private)	A+	A	F
Paradise Cove Pier at Ramirez Canyon Creek mouth	F	F	D
Escondido Creek, just east of Escondido State Beach	F	F	C
Latigo Canyon Creek mouth	B	B	D
Solstice Canyon at Dan Blocker County Beach	F	F	D
Puerco State Beach at creek mouth	B	B	C

County "Beach Bummers" names appear in bold.



Heal the Bay

Los Angeles County	AB411 (April – Oct.)	Dry Year-round	Wet Year-round
Marie Canyon storm drain at Puerco Bch, at 24572 Malibu Rd.	F	F	F
Malibu Point	A	A	D
Surfrider Beach (breach point) - daily	D	F	F
Malibu Pier- 50 yards east	B	B	C
Carbon Beach at Sweetwater Canyon	A	A	C
Las Flores State Beach at Las Flores Creek	A	A	F
Big Rock Beach at 19948 PCH stairs	A	A	B
Pena Creek at Las Tunas County Beach	A+	A+	A
Topanga State Beach at creek mouth	B	C	F
Castlerock Storm Drain at Castle Rock Beach	A	D	F
Santa Ynez Storm Drain at Castle Rock Beach	B		
Will Rogers State Beach at 17200 PCH (1/4 mile E of Sunset drain)	A+	A+	F
Will Rogers State Beach at Bel Air Bay Club drain near fence	A	A	C
Will Rogers State Beach at Pulga Canyon storm drain	A	A	F
Will Rogers State Beach at Temescal Canyon drain	A	A	D
Will Rogers State Beach at Santa Monica Canyon drain	A	D	F
Santa Monica Beach at Montana Ave. drain	B	B	F
Santa Monica Beach at Wilshire Blvd. drain	F	F	F
Santa Monica Municipal Pier	F	F	F
Santa Monica Beach at Pico/Kenter storm drain	A	A	F
Santa Monica Beach at Strand St. (in front of the restrooms)	A	B	D
Ocean Park Beach at Ashland Ave. drain	A	A	F
Venice City Beach, at the Rose Ave. storm drain	A	A	F
Venice City Beach at Brooks Ave. drain	A	A	F
Venice City Beach at Windward Ave. drain	A+	A	F
Venice Fishing Pier- 50 yards south	A	A	D
Venice City Beach at Topsail St.	C	B	F
Marina del Rey, Mothers' Beach-Playground area	A	B	F
Marina del Rey, Mothers' Beach-lifeguard tower	A	A	F
Marina del Rey, Mothers' Beach-btwn. Tower and Boat dock	A	A	F
Dockweiler State Beach at Ballona Creek mouth	F	F	F

County "Beach Bummers" names appear in bold.



Heal the Bay

Los Angeles County	AB411 (April – Oct.)	Dry Year-round	Wet Year-round
Dockweiler State Beach at Culver Blvd. drain	B	A	C
North Westchester Storm Drain at Dockweiler State Beach	A+	A+	F
Dockweiler State Beach at World Way (south of D&W jetty)	A+	A	F
Dockweiler State Beach at Imperial Hwy drain	A+	A+	F
Hyperion Treatment Plant One Mile Outfall	A+	A	F
Dockweiler State Beach at Grand Ave. drain	A+	A	F
Manhattan State Beach at 40th Street	A+	A+	D
Manhattan Beach at 28th St. drain	A	A	F
Manhattan Beach Pier drain	A+	A+	B
Hermosa City Beach at 26th St.	A+	A	B
Hermosa Beach Pier- 50 yards south	A	A	D
Herondo Street storm drain- (in front of the drain)	A	A	F
Redondo Municipal Pier - 100 yards south	B	C	F
Redondo State Beach at Topaz St. - north of jetty	B	C	D
Redondo State Beach at Avenue I drain	A	A	B
Malaga Cove, Palos Verdes Estates-daily	A	A	C
Malaga Cove, Palos Verdes Estates-weekly	A+	A+	B
Palos Verdes (Bluff) Cove, Palos Verdes Estates	A+	A+	A+
Long Point, Rancho Palos Verdes	A+	A+	A+
Abalone Cove Shoreline Park	A+	A	A+
Portuguese Bend Cove, Rancho Palos Verdes	A+	A+	B
Royal Palms State Beach	A	A	A
Wilder Annex, San Pedro	A+	A	A
Cabrillo Beach, oceanside	A	A	A
Cabrillo Beach - harborside at restrooms	F	F	F
Cabrillo Beach - harborside at boat launch	A	B	B
Cabrillo Beach - harborside at lifeguard tower	F	F	F
Avalon Beach-btwn. BB rstmnt. & Tuna Club	F		
Avalon Beach-btwn. Pier & BB rstmnt. (2/3)	F		
Avalon Beach-btwn. Pier & BB rstmnt. (1/3)	F		
Avalon Beach-btwn. storm drain & Pier (2/3)	F		

County "Beach Bummers" names appear in bold.



Heal the Bay

Los Angeles County	AB411 (April – Oct.)	Dry Year-round	Wet Year-round
Avalon Beach-btwn. storm drain & Pier (1/3)	F		
Long Beach City Beach, projection of 3rd Place	C	D	F
Long Beach City Beach, projection of 5th Place	D	D	F
Long Beach City Beach, projection of 10th Place	F	F	F
Long Beach City Beach, projection of 16th Place	C	D	F
Long Beach City Beach, projection of Molino Ave.	F	F	F
Long Beach City Beach, projection of Coronado Ave.	C	C	F
Long Beach City Beach, projection of 36th Place	D	C	F
Belmont Pier-westside	C	C	F
Belmont Pier-eastside (use to be mid-pier)	A	B	F
Long Beach City Beach, projection of Prospect Ave.	A	A	F
Long Beach City Beach, projection of Granada Ave.	A	A	F
Long Beach City Beach, projection of 54th Place	A	A	F
Alamitos Bay - 1st & Bayshore	A	A	D
Alamitos Bay - Division Street and Bayshore	A	A	F
Alamitos Bay - 2nd St. Bridge & Bayshore	B	C	F
Alamitos Bay - shore float	A	A	F
Mother's Beach - Long Beach - north end	C	C	F
Mother's Beach - Long Beach - south end	A	A	F
Alamitos Bay - 56th Place - on bayside	A	A	F
Long Beach City Beach, projection of 55th Place	A	A	F
Long Beach City Beach, projection of 62nd Place	A	A	F
Long Beach City Beach, projection of 72nd Place	A	A	F
Colorado Lagoon - north	F	F	F
Colorado Lagoon - center	C	F	F
Colorado Lagoon - south	F	F	F



Heal the Bay

Ventura County	AB411 (April – Oct.)	Dry Year-round	Wet Year-round
Rincon Beach, 25 yds. so. of the creek mouth	D		
Rincon Beach- 100 yds. so. of the creek mouth	A		
Rincon Beach- at the end of the footpath	A		
La Conchita Beach, 50 yds. so. of the drain, Ocean View Rd.	A+		
Mussel Shoals Beach, south the drain	A		
Oil Piers Beach, south of drain, bottom of wood staircase	A+		
Hobson County Park, base of stairs to the beach	A+		
Rincon Parkway North, near camp space #20	A		
Faria County Park, south of drain at no. end of park	A		
Mandos Cove, south of drain	A		
Solimar Beach - north (south of drain at base of cypress tree)	A+		
Solimar Beach - south (end of east gate access road)	A+		
Emma Wood State Beach (50 yards S. of first drain)	A+		
Seaside Wilderness Park (400 yards N. of Ventura River)	A		
Surfer's Point at Seaside (End of access path via wooden gate)	D		
Promenade Park - Figueroa St.	A+		
Promenade Par - Redwood Apts.	A+		
Promenade Park -Oak Street	A+		
Promenade Park - Holiday Inn, south of drain at California St.	A+		
San Buenaventura Beach- south of drain at Kalorama St.	A		
San Buenaventura Beach- south of drain at San Jon Rd.	A+		
San Buenaventura Beach- south of drain at Dover Ln.	A		
San Buenaventura Beach- south of drain at Weymouth Ln.	A		
Marina Park (Beach at N. end of playground)	A+		
Peninsula Beach (Beach area N. of South Jetty)	A+		
South Jetty (Beach area S. of the jetty)	A		
Surfer's Knoll (Beach adjacent to parking lot)	A		
McGrath State Beach (1/2 mile N. of Gonzales Rd.)	A		
McGrath State Beach- Gonzales Rd.	A		
McGrath State Beach (South end of McGrath Lake)	A+		
Oxnard Beach - 5th Street (south of drain)	A+		

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Ventura County	AB411 (April – Oct.)	Dry Year-round	Wet Year-round
Oxnard Beach - Channel Way (south of drain)	A		
Oxnard Beach - Outrigger Way (south of drain)	A+		
Oxnard Beach - Amalfi Way (south of drain)	A+		
Oxnard Beach Park - Falkirk Ave. (south of drain)	A+		
Oxnard Beach Park - Starfish Dr. (south of drain)	A+		
Hollywood Beach - La Crescenta St. (south of drain)	A+		
Hollywood Beach - Los Robles St. (south of drain)	A+		
C.I. Harbor-Hobie Beach Lakshore Dr.	A		
C.I. Harbor-Beach Park at S. end of Victoria Ave.	A		
Silverstrand - San Nicholas Ave. (south of jetty)	A		
Silverstrand - Santa Paula Dr. (south of drain)	A+		
Silverstrand - Sawtelle Ave. (south of drain)	A		
Port Hueneme Beach Park, 50 yds. no.of the Pier	A		
Ormond Beach - J Street drain, 50 yds. so. of the drain	A+		
Ormond Beach - Oxnard Industrial drain, 50 yds. N of the drain	A+		
Ormond Beach - Arnold Rd.	A+		
Point Mugu Beach, adjacent to parking lot entry	A+		
Thornhill Broome Beach, adjacent to parking lot entry	A+		
Sycamore Cove Beach, 50 yds. so. of the creek mouth	A+		
Deer Creek, 50 yds. so. of the creek mouth	A+		
County Line Beach, 50 yds. so. of the creek mouth	A		
Staircase Beach, bottom of staircase	A+		

San Luis Obispo County	AB411 (April – Oct.)	Dry Year-round	Wet Year-round
Pico Ave., San Simeon	A+	A+	A
Cayucos State Beach, between Cayucos Creek and the Pier	A	A	C
Cayucos State Beach, downcoast of the pier	A+	A	A
Studio Drive parking lot near Old Creek	A	A	A
Morro Strand State Beach, projection of Beachcomber Dr.	A+	A	A
Morro Bay City Beach, projection of Atascadero	A	A	A+
Morro Bay City Beach, Morro Creek (south side)	A+	A+	A

County "Beach Bummers" names appear in bold.



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San Luis Obispo County	AB411 (April – Oct.)	Dry Year-round	Wet Year-round
Morro Bay City Beach, 75 feet north of main parking lot	A+	A+	A
Hazard Canyon, Montana De Oro State Park	A	A	A+
Olde Port Beach (Harford Beach)north	A	A	A
Avila Beach, projection of San Juan Street	A+	A	B
Avila Beach, projection of San Luis Street	A+	A	A
Sewers at Silver Shoals Dr.	A	A	C
Pismo Beach, projection of Wadsworth Street	A+	A+	B
Pismo Beach Pier, 50 feet south of the pier	F	F	B
Pismo Beach, projection of Ocean View	A	A	A+
Pismo State Beach, 330 yards no. of Pier Ave.	A+	A+	A+
Pismo State Beach, projection of Pier Ave.	A+	A+	A+
Pismo State Beach, 571 yards south of Pier Ave, at Strand Way	A+	A+	A
Pismo State Beach, 2 miles south of Pier Ave., Post 4	A+	A+	A

Monterey County	AB411 (April – Oct.)	Dry Year-round	Wet Year-round
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	A		
Asilomar State Beach, projection of Arena Ave.	A		
Spanish Bay (Moss Beach), end of 17 mile drive	A		
Stillwater Cove, at Beach and Tennis Club	A		
Carmel City Beach, projection of Ocean Ave. (west end)	A		

Santa Cruz County	AB411 (April – Oct.)	Dry Year-round	Wet Year-round
Natural Bridges State Beach	A+	A+	B
Cowell Beach at the Stairs	A	A	A
Cowell Beach	C	D	C
Santa Cruz Main Beach, at the Boardwalk	A	A	B
Santa Cruz Main Beach, at the San Lorenzo River	A	A	C
Seabright Beach	A+	A	D

County "Beach Bummers" names appear in bold.



Heal the Bay

Santa Cruz County	AB411 (April – Oct.)	Dry Year-round	Wet Year-round
Twin Lakes Beach	A+	A+	B
Capitola Beach, west of the Jetty	C	C	F
Capitola Beach, east of the Jetty	A	A	D
New Brighton Beach	A	A	C
Seacliff State Beach	A	A	A
Rio Del Mar Beach	A	A	B
Palm/Pajaro Dunes Beach	A+		

San Mateo County <i>(Continued)</i>	AB411 (April – Oct.)	Dry Year-round	Wet Year-round
Sharp Park Beach, projection of San Jose Ave.	A+		
Sharp Park Beach, projection of Birch Ln.	A+		
Rockaway Beach at Calera Creek	A+	A	A
Linda Mar Beach, projection of Crespi Dr.	A+		
Linda Mar Beach at San Pedro Creek	A	A	F
Gray Whale Cove	A+		
Montara State Beach, at Martini Creek	A+	A+	A+
Fitzgerald Marine Reserve at San Vicente Creek	A+	A	C
Pillar Point #8 Mavericks Beach Westpoint Ave.	A	A	C
Pillar Point Harbor, end of Westpoint Ave.(# 7)	A	A	F
Surfer's Beach, southend of riprap	A+	A+	A
Roosevelt Beach, south end of parking lot	A+	A+	A
Dunes Beach	A+	A	C
Venice Beach at Frenchman's Creek	A	A	F
Francis Beach at the foot of the steps	A+	A+	B
San Gregorio State Beach at San Gregorio Creek	A		
Pomponio State Beach at Pomponio Creek	A+		
Pescadero State Beach at Pescadero Creek	A		
Bean Hollow State Beach	A+		
Gazos Beach at Gazos Creek	A		
Oyster Point	A		



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San Mateo County (Continued)	AB411 (April – Oct.)	Dry Year-round	Wet Year-round
Coyote Point	A+		
Aquatic Park	B		
Lakeshore Park - behind Rec Center	D		
Kiteboard Beach	B		

East Bay - Alameda and Contra Costa Counties	AB411 (April – Oct.)	Dry Year-round	Wet Year-round
Keller Beach North Beach	F	D	A
Keller Beach Mid Beach	C	C	B
Keller Beach South Beach	C	C	B
Alameda Point North	A	A	A+
Alameda Point South	A	A	A+
Crown Beach Bath House	A	C	A+
Crown Beach Windsurfer Corner	A	A	A+
Crown Beach Sunset Rd.	A+	A	A
Crown Beach 2001 Shoreline Dr.	A	A	A+
Crown Beach Bird Sanctuary	A	A	B

San Francisco County	AB411 (April – Oct.)	Dry Year-round	Wet Year-round
Aquatic Park Beach, Hyde St. Pier (proj. of Larkin St.)	A	A	A+
Aquatic Park Beach, 211 Station	A	B	C
Crissy Field Beach East, 202.4 Station	A	B	B
Crissy Field Beach West 202.5 station	A+	A+	A
Baker Beach East, Ocean #15East	A	A	A+
Baker Beach, Lobos Creek	F	F	A+
Baker Beach West, Ocean #16	A	A	A
China Beach, end of Sea Cliff Ave.	A	A	A+
Ocean Beach, projection of Balboa Ave.	A	A	B
Ocean Beach, projection of Lincoln Way	A	A	C
Ocean Beach, projection of Sloat Blvd.	A+	A	C
Candlestick Point, Jackrabbit Beach	A	A	D
Candlestick Point, Windsurfer Circle	A	B	F
Candlestick Point, Sunnydale Cove	A	A	F



Marin County	AB411 (April – Oct.)	Dry Year-round	Wet Year-round
Dillon Beach	A+		
Lawson’s Landing	A		
Miller Point	A		
Heart’s Desire	A+		
Shell Beach	A+		
Chicken Ranch Beach at Creek	A		
Millerton Point	A		
Drake’s Beach	A		
Drakes Estero	A+		
Limantour Beach	A		
Bolinas Beach (Wharf Rd)	A		
Stinson Beach, North	A+		
Stinson Beach, Central	A+		
Stinson Beach, South	A+		
Muir Beach, North	A+		
Muir Beach, Central	A+		
Muir Beach, South	A+		
Rodeo Beach, North	A+		
Rodeo Beach, Central	A+		
Rodeo Beach, South	A+		
Baker Beach, Horseshoe Cove SW	A		
Baker Beach, Horseshoe Cove NW	A		
Baker Beach, Horseshoe Cove NE	A		
Schoonmaker Beach	A+		
Paradise Cove	A+		
China Camp	A+		
McNears Beach	A		

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Sonoma County	AB411 (April – Oct.)	Dry Year-round	Wet Year-round
Gualala Regional Park Beach	A+	A+	A+
Black Point Beach	A+	A+	A+
Stillwater Cove Regional Park Beach	A+	A	A+
Goat Rock State Park Beach	A+	A+	B
Salmon Creek State Park Beach	A+	A+	A+
Campbell Cove State Park Beach	D	F	F
Doran Regional Park Beach	A+	A+	A+

Mendocino County	AB411 (April – Oct.)	Dry Year-round	Wet Year-round
MacKerricher State Park at Mill Creek	A+		
Pudding Creek Ocean Outlet	A+		
Big River near PCH	A+		
Van Damme State Park at the Little River	A+		

Humboldt County	AB411 (April – Oct.)	Dry Year-round	Wet Year-round
Trinidad State Beach near Mill Creek	A+	A+	A
Luffenholtz Beach near Luffenholtz Creek	A	A	B
Moonstone County Park (Little River State Beach)	A	A	A
Clam Beach County Park near Strawberry Creek	A	A	C
Mad River Mouth (north)	A+	A+	A



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