



# Introduction

The Blue Water Task Force (BWTF) supported by [Emergen-C Blue®](#) is the Surfrider Foundation's volunteer-run, water testing, education and advocacy program. The BWTF is a very diverse program. Each Surfrider Foundation chapter is able to design and implement their water testing program to best utilize their available resources and meet local needs. Some chapters collect water samples at local beaches and run their own water testing labs. Other chapters partner with coastal organizations, universities, aquariums or watershed groups. Some provide manpower to local beach monitoring programs by collecting water samples and delivering them to state or county run labs. Many chapters also have water testing programs established in local schools

Over the last 20 years, the BWTF precipitated the establishment of state and local government water quality monitoring programs in many communities and still continues to fill in data gaps, improving the public's knowledge of the safety of their beach water. Many chapters test beaches that are not covered by state or local beach monitoring programs, or during the "off" season when lifeguards leave the beaches

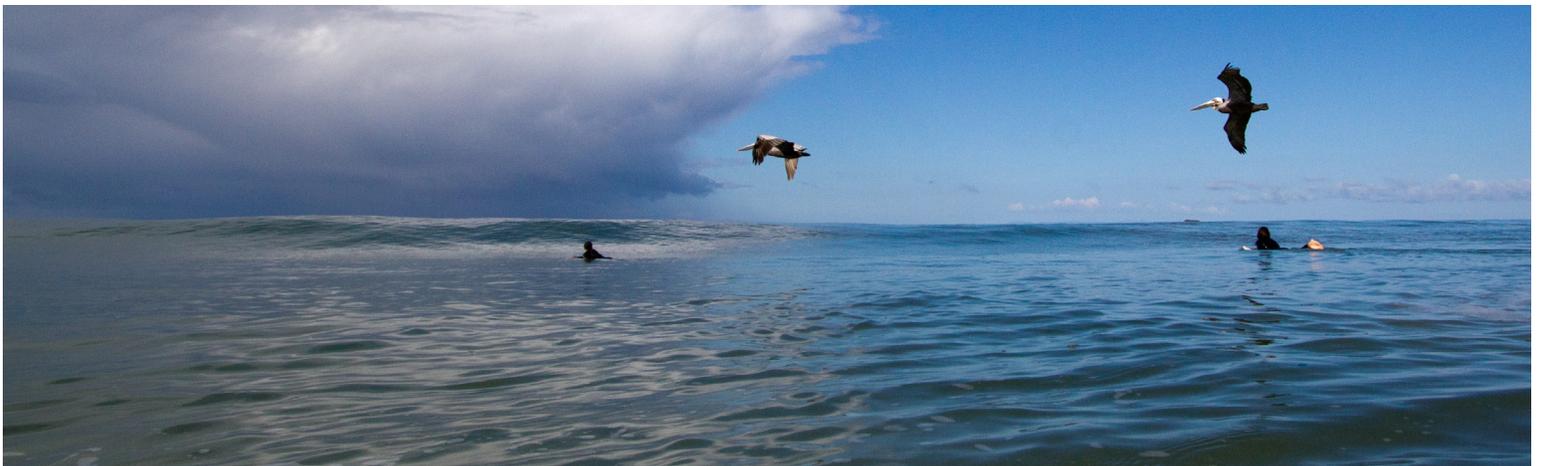
but surfers continue to enjoy good swells. The BWTF water testing programs measure [bacteria](#) levels at ocean and bay beaches and freshwater sites and compare them to [national water quality standards](#) established by the Environmental Protection Agency (EPA) to protect public health in recreational waters.

BWTF data is posted on Surfrider's [website](#) which was revamped in 2011 with the generous support of Emergen-C Blue®. Chapter use of this online, data-sharing platform saw significant growth in 2012.

The BWTF program serves many purposes beyond providing a record of beach water quality. Chapters are educating students about water quality issues and promoting a coastal stewardship ethic. BWTF volunteers often become advocates for the beaches and watersheds they monitor and present their data to local decision makers when water quality issues are discovered. Many Surfrider chapters have been successful at elevating public awareness of water quality issues and integrating science into local management efforts aimed at solving beach pollution problems.



As clean water becomes an increasingly scarce resource, Emergen-C Blue® is committed to supporting, enhancing and extending the efforts of the Blue Water Task Force. For every box of Emergen-C Blue® sold, 20 cents is donated to the BWTF to further the important work it is doing to improve water quality.





*Collecting a water sample in the surf*  
photo: Carolann Towe



*Taking careful measurements in the lab*  
photo: Skyler McVaugh



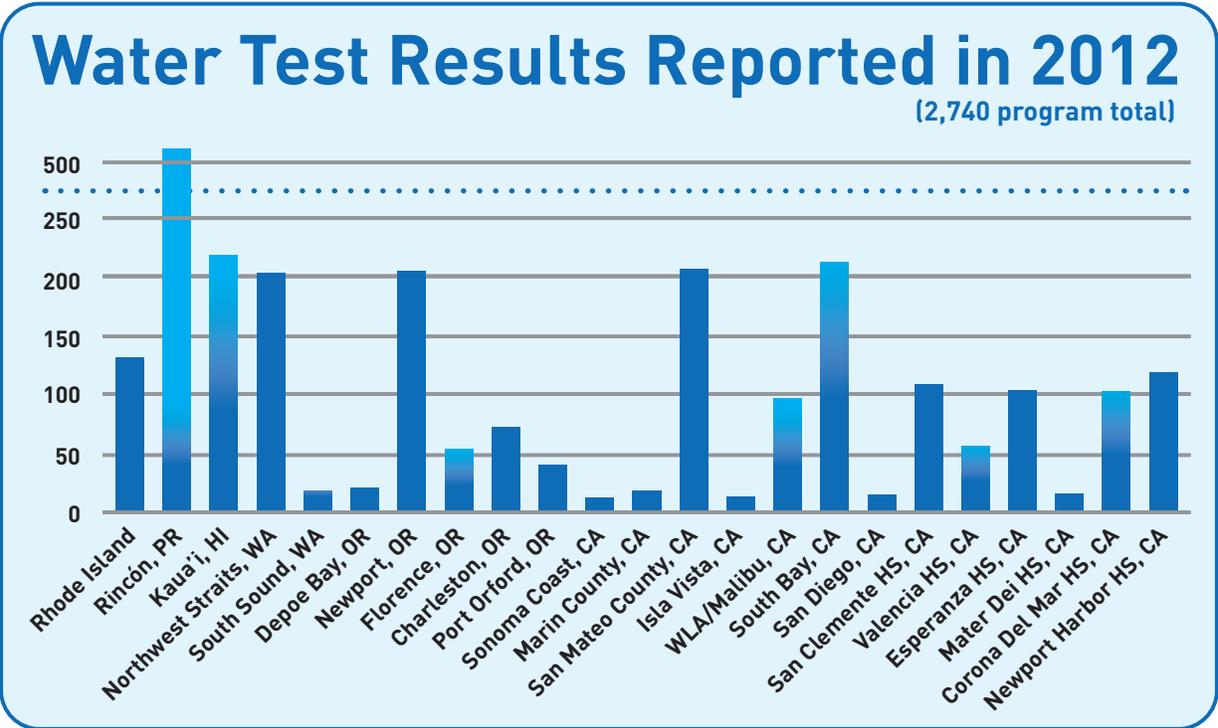
*A high school student places her sample trays in an incubator*  
photo: Samohi Heal the Bay Surfrider Club



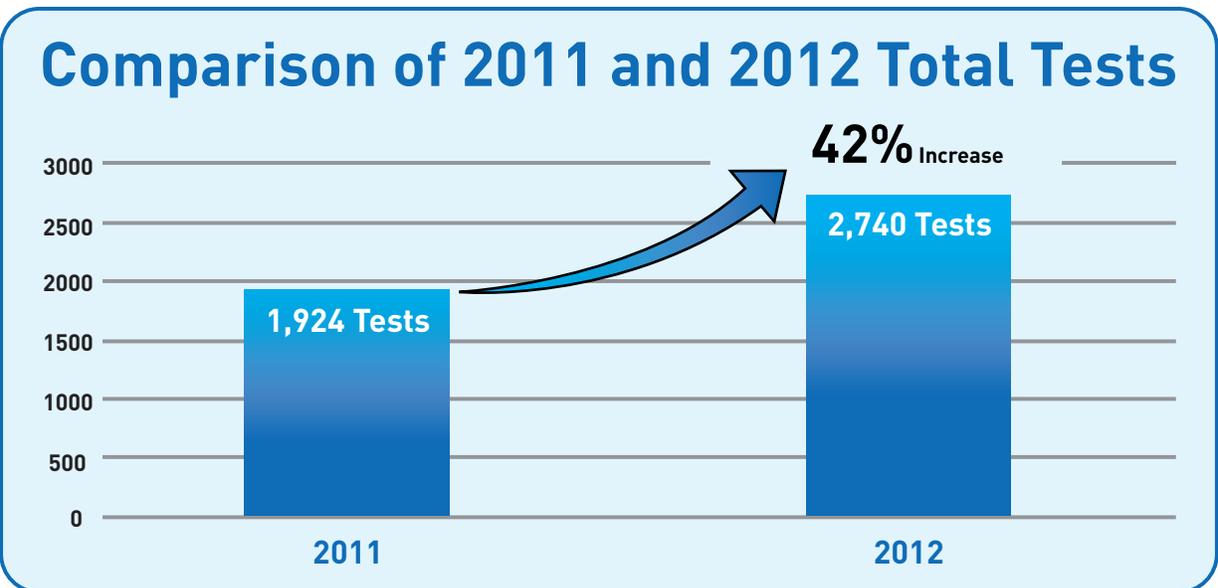
*Water samples ready to be processed*  
photo: Skyler McVaugh

# 2012 Program Activity

This report covers all water testing data entered into the Surfrider Foundation's BWTF website during the 2012 calendar year.



In 2012, 23 water testing labs entered data for a total of 2,740 water samples into Surfrider's BWTF database and website. Each lab listed is associated with a Surfrider Chapter or distinct group of activists, with the exception of the West LA/Malibu Chapter that includes two local high school (HS) labs, and the last five high school labs, which are all part of the Newport Beach Chapter's Teach and Test program in Southern California.

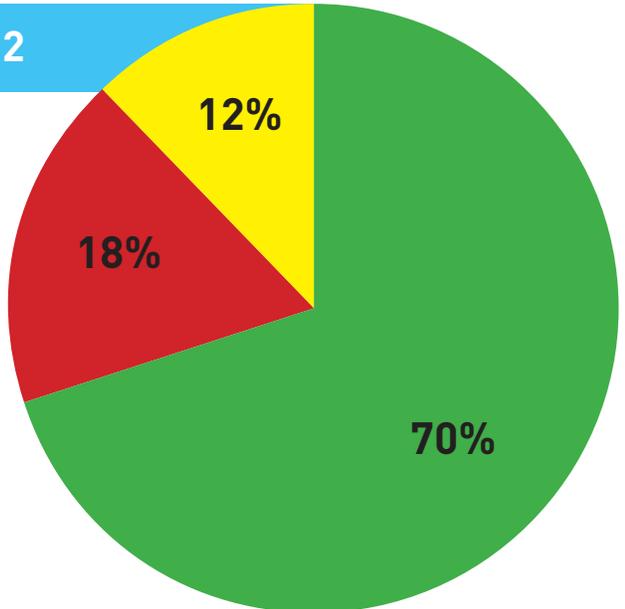




### Bacteria Levels Measured by the BWTF in 2012

Of the 2,740 water tests reported, 70% indicated low bacteria levels, 12% indicated medium bacteria levels and 18% measured high bacterial levels above the national water quality standards set by the EPA to protect public health in recreational waters. These results are very similar to those reported last year, which were 70%, 9% and 21% respectively.

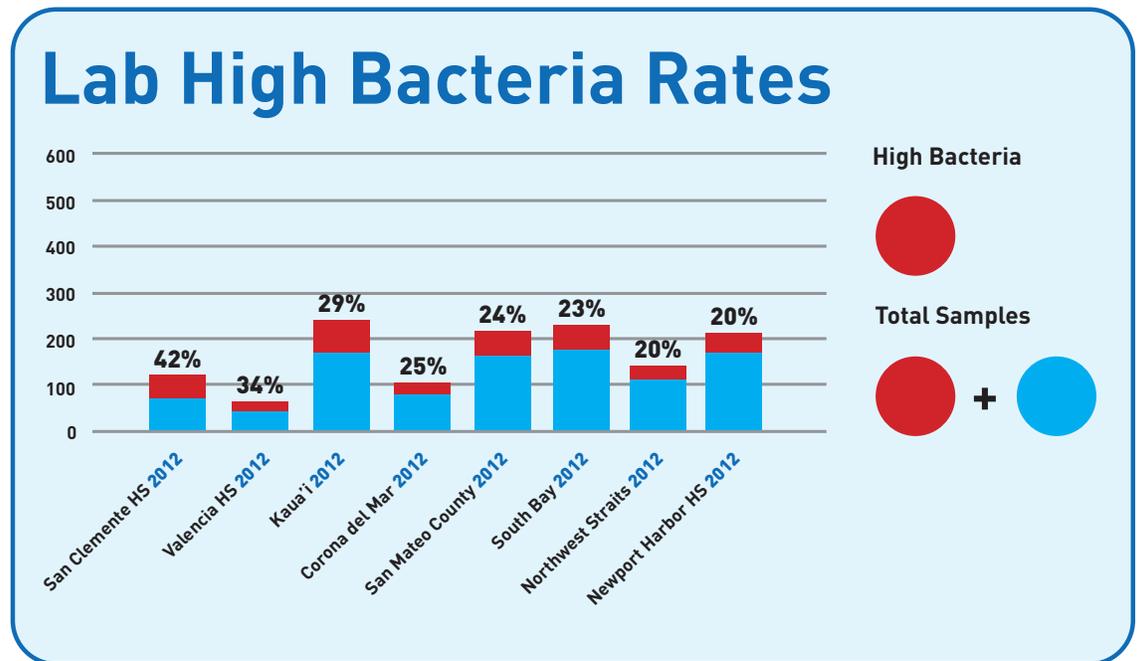
- Low Bacteria** ●
- Medium Bacteria** ●
- High Bacteria** ●



*Enterococcus (MPN/100 ml): (0-35) Low Bacteria, (36-104) Medium Bacteria, (> 104) High Bacteria  
E. Coli (MPN/100 ml): (0-126) Low Bacteria, (127-235) Medium Bacteria, (> 235) High Bacteria*

The chapters whose high bacteria rates were 20% or greater and who entered data for at least 50 water samples during 2012 are listed in the above graph. A chapter's high bacteria rate is defined as the percentage of their samples that failed to meet health standards for recreational exposure.

Samples analyzed by the San Clemente High School in Southern California had the highest bacteria rate of all the BWTF labs in 2012. At 42%, their high bacteria rate nearly doubled from the previous year's rate of 20%. Nearly half of their 50 samples that failed to meet health standards in 2012 came from Poche Beach. Poche is one of the most consistently polluted beaches in Southern California and has both a channelized creek and a stagnant pond that likely contribute to the pollution. Their remaining high bacteria counts were fairly evenly distributed between their remaining sampling sites including two ocean beaches that receive drainage from upland watersheds, Riviera & North Beach, and one site located at the San Clemente Pier.



*Runoff at Riviera beach making its way into the surf. photo: Ian Swanson*

Thirty-four percent of Valencia High School's 61 water samples showed high bacteria levels. A participant in the Newport Beach Chapter's Teach and Test program, Valencia HS tests exclusively in freshwater lakes in the area surrounding their school. Valencia only reported 6 water testing results in 2011, and is an example of one of the BWTF labs whose use of the BWTF website greatly improved during the last year.

Kaua'i had a high bacteria rate of 39%, up from 31% in 2011. Kaua'i tests 22 surf breaks and freshwater streams on a monthly basis. Eighty percent of their high bacteria counts came from streams and the remaining 20% from the surf zone.



*Students collecting water samples in the estuaries of Southern California. photo: Joe Geever*

Corona del Mar and Newport Harbor High Schools had high bacteria rates of 25% and 20%, respectively. Both schools are part of the Newport Beach Chapter's Teach and Test Program, and they both also sample in similar locations in the estuaries of Newport Bay and at beaches close to where the Bay and the Santa Ana River empty out into the ocean. Corona del Mar HS had a similar high bacteria rate of 23% in 2011. Newport Harbor HS saw a drop in high bacteria levels from 40% in 2011 to 20% in 2012, and this is largely the result of fixing an error in their testing method.

The San Mateo County Chapter, whose high bacteria rate was 24%, collects water samples at seven local beaches, however only two of those sites contributed 88% of the samples with high bacteria counts. One is San Vicente Creek which flows across the beach in the James V. Fitzgerald Marine Reserve, and where, unfortunately, children enjoy splashing around in its calm, shallow and often polluted waters. Bacteria levels also frequently measured high at Capistrano Beach, which in addition to receiving two major sources of freshwater, is also plagued with sluggish water exchange with the rest of Half Moon Bay.



*Children wading in the polluted water of the San Vicente Creek in the Fitzgerald Marine Reserve. photo: Carolann Towe*



*South Bay Chapter's Teach & Test students visit the beach to collect their water samples. photo: Craig Cadwallader*

The South Bay Chapter's high bacteria rate remained the same at 23% for both 2011 and 2012. More than half of their high tests came from sites located around the Ballona Creek and Wetland system, and the remaining were from ocean sites stretched along Manhattan, Hermosa, and Redondo Beaches.

The Northwest Straits Chapter in Washington saw their high bacteria rate increase from only 5% in 2011, based on 93 samples, to 20% of 209 samples in 2012. Just over half of their high samples were collected where freshwater sources such as rivers and creeks enter Bellingham Bay. One of the sites they just began testing in 2012, Locust Beach, produced

7 high counts throughout the year, as did Larrabee State Park which has been problematic for several years. Read more about what this Chapter is doing to tackle the chronic water pollution problems at Larrabee State Park in their case study at the end of this report.

Two chapters whose high bacteria rates were among the highest in 2011 saw a noticeable decrease in 2012. In Oregon, the Newport lab's high bacteria rate fell from 18% in 2011 to 10% in 2012. Rincón, PR saw a similar decrease falling from 27% in 2011 to 18% in 2012.

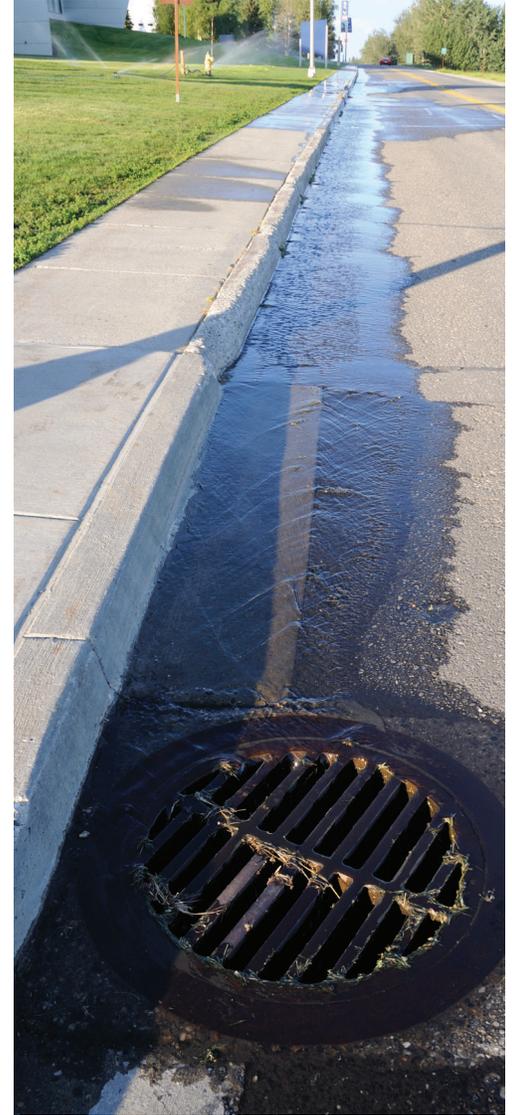
# Summary of Results

The cumulative results from 2012 show that most samples collected by Surfrider do meet national health standards. Of the samples that failed to meet these standards, the majority were taken from freshwater sources that drain the landscape or at beaches near these freshwater outlets.

This is consistent with trends seen across the country. The Natural Resources Defense Council's [Testing the Waters](#) Report continues to identify polluted stormwater runoff as the largest known source of beach pollution. In developed coastal watersheds rain typically flows off of paved and manicured city, residential and agricultural landscapes. Urban runoff picks up contaminants as it flows downstream through the watershed and into the ocean.



*Testing the outflow of the Almendras River in Rincón, PR. photo: Steve Tamar*



*Urban runoff flowing through the streets and into a stormdrain which drains to the ocean. photo: Shutterstock*

In 2012, two BWTF labs detected fewer high bacteria levels in their water samples than during the previous year. This is a trend we would like to continue to see, but would need more long-term data to confirm. It is possible that the trend detected in Oregon is beginning to show the results of the combined efforts of the Chapter, City and State to find and fix the sources of pollution in Newport as well as install and promote stormwater best management practices.

Beach water quality in Northwestern Puerto Rico

where the Rincón Chapter tests is highly dependent upon the amount of rainfall washing pollutants off the land as well as local wind directions which can either work to push polluted plumes back against the land or help pull them out to sea. It is possible that weather patterns alone could be responsible for their decreased high bacteria rate during 2012. The chapter intends to continue to implement their comprehensive beach water testing program, providing some of the only available information to the public on the safety of the water at their local beaches.

# Solutions

The BWTF helps chapters identify water pollution problems so they can begin to educate their communities and work towards solutions. The Surfrider Foundation's [Clean Water Program](#) offers a suite of complimentary programs, campaigns and tools that chapters and activists can use to help solve water pollution problems and to educate communities about the many benefits of responsible land and water management.

[Ocean Friendly Gardens](#) (OFG) educates and assists people in taking action in their yards, where they work and in public spaces to prevent pollution and runoff. By applying CPR- Conservation, Permeability and Retention – OFGs allow rainwater to soak into the soil, filtering out pollutants that could go to waterways and the ocean, reducing flooding and erosion, and providing plants a source of water to draw from during dry periods. Surfrider currently has over a dozen chapters with active OFG programs located up and down the west coast and slowly spreading to the east.

On a larger scale, [Know Your H2O](#) (KYH2O) educates communities on how we mismanage and waste

water resources, and presents solutions for integrated land and water management. Surfrider Foundation's animated movie "[The Cycle of Insanity: The Real Story of Water](#)" is shown across the country to help chapters begin dialogues in communities about the various challenges and solutions relating to water management.

Ocean Friendly Gardens, treatment wetlands, green streets and other [low impact development](#) applications are some of the tools that chapters are advocating for to restore the natural cycle of water in developed areas to protect water quality, improve sediment transport for natural beach replenishment, restore coastal habitat and adapt to sea level rise. Chapters are also running KYH2O campaigns to take the "waste" out of our outdated wastewater (sewage) treatment systems by eliminating ocean discharges and cleaning up the water for safe and beneficial use.

Contact your local Surfrider Chapter to get involved in the Blue Water Task Force or any of the other Clean Water Programs, or visit us online at [Surfrider.org](#).



*An Ocean Friendly Garden thrives in a suburban community.*

# Case Studies

The following case studies describe how three different chapters are implementing their water testing programs, raising awareness about water pollution issues in their communities and advocating for solutions.

## Solving a Bacteria Pollution Problem in Bellingham, Washington

The [Northwest Straits Chapter](#) in Washington State began sampling the beach at Larrabee State Park in 2004. Since then their BWTF water testing program has grown to cover three distinct sampling sites at six different beaches in the Bellingham area. Their lab is housed at Western Washington University (WWU), and dedicated student volunteers help collect and analyze water samples on a monthly basis. Each year, one deserving college student becomes the Blue Water Task Force Coordinator and is responsible for managing all of the sampling logistics and lab work.

Chapter volunteers also collect weekly water samples for the [Washington State Department of Ecology's BEACH Program](#) during the summer months from Wild Cat Cove at Larrabee State Park. These samples are processed at an accredited laboratory, and if any fail to meet water quality standards, the Surfrider volunteers go back out and re-sample.

Wild Cat Cove is a very popular ocean recreation site, and the adjacent beach and campground at [Larrabee State Park](#) welcome millions of visitors every season. Consistently high bacteria levels over the years, however, have threatened continued public use of this beach and led the chapter to beseech its partners in the State and County to find out where the pollution was coming from.

In 2009, the [Whatcom County Health Department](#) performed dye tests to locate and fix failing septic systems in the surrounding area, including one residence whose septic system was discharging directly into their rainwater downspout.

Bacteria levels during the summer of 2010, however, did not improve as expected. Surfrider and their local partners investigated several other potential sources,



*Wildcat Cove at Larrabee State Park in Washington State.  
photo: Eleanor Hines*



*Student volunteers processing water samples at WWU lab  
photo: Skyler McVaugh*

including discarded crab carcasses during crab season and eel grass in the wrack line, but could not find a clear solution. Faced with an impending permanent beach closure, the Chapter undertook a massive education and outreach program during the summer of 2011 with the help of four WWU interns. Spending over 300 hours each at Larrabee State Park during summer weekends and holidays, these interns taught campers about park water quality issues and the natural environment and how their behavior can affect both while observing camper behavior throughout the park.

Meanwhile the State and Whatcom County further investigated the bacterial pollution up one of the streams in the park and found a site on one creek branch that both gave extremely high bacteria counts and showed obvious evidence of raccoons, with ripped and discarded food bags strewn about. What appeared to be happening is that with easy access to camper food items, the local raccoon population has grown, and their use of this damp, muddy creek site has polluted the stream with fecal matter straight down to Wild Cat Cove.

This discovery finally provided some real direction in how to control the bacteria problem. With support from the Marine Resource Committee the Chapter expanded their outreach program in the park, managing the efforts of 13 interns who visited the park on a daily basis during the summer of 2012. In addition to expanding their beach walks and guided hikes, they were also able to target some education resources and tactics towards encouraging campers to keep their food items secure and out-of-reach of raccoons. They found that most campers were visited by these animals almost immediately upon arrival at their campsites.

This year the Chapter will continue their education and outreach program while supporting the State and County in their efforts to verify the source of pollution and implement some short-term solutions such as a “Scoop the Poop” effort and the installation of a [mycoremediation](#) project which installs fungi in the stream to decrease coliform bacteria loads. The Chapter is hoping that their outreach program will continue to give park visitors a greater appreciation

for the natural environment of the park and will lead to changed camper behavior, less readily available food for the overgrown raccoon population, and ultimately improvements in water quality.

[Visit the BWTF Coastal Blog](#) to read this story told in the words of the NW Straits Chapter Chair and learn more about their efforts to investigate the sources of bacterial pollution and their impressive summer outreach program at the park.



*A summer intern holds up her find on a guided beach walk  
photo: Eleanor Hines*

## Providing year-round beach water quality data in Rhode Island

The Rhode Island Chapter partners with the University of Rhode Island's (URI) Watershed Watch program to implement its water testing program. Watershed Watch supports volunteers from local municipalities, NGOs and community groups across the state to monitor water quality in RI's lakes, ponds, streams and coastal waters. Scientists at URI provide training, equipment and supplies to all participating volunteers and run a state-certified lab for sample analysis.

The Rhode Island Chapter makes up the ocean branch of this watershed program, collecting samples from 15 ocean beaches across the state on a monthly basis. After analysis at the URI lab, the resulting data are then posted on the [Watershed Watch](#) and BWTF websites, shared with the [Rhode Island Department of Health's Beach program](#), and sent out in a quarterly newsletter to all Watershed Watch volunteers state-wide.

Over the years, there have been close to 50 Surfrider volunteers involved in this program. In 2013, Watershed Watch celebrates its 25th anniversary, and the Rhode Island Chapter begins its 14th year of water testing. This successful partnership is providing the only source of water quality data at RI's ocean beaches outside of the narrowly defined summer beach season when the State monitors water quality at licensed bathing beaches only. As surfers are in the water year-round and often away from life-guarded beaches, BWTF data is filling a real need to provide water quality information to ocean users across the state.

Rhode Island is one of 15 coastal states that depends solely on its [federal BEACH grant](#) to fund its beach water monitoring program. With this source of funding threatening to go away, volunteer water testing data such as the BWTF is producing in RI will become more and more valuable.



*A few brave souls enjoying a winter swell at Bonnet Point  
photo: Philip Chiaradio*



*Water samples rest in the snow at Fenway Beach, RI  
photo: Philip Chiaradio*



*A BWTF volunteer all suited up to collect water samples  
photo: Ingrid Lindfors*

## Students taking charge in West Los Angeles, California

The West LA/Malibu Chapter supports two local high schools through its Teach and Test Program. Originally funded by a CA State Whale Tale Grant, the Heal the Bay Surfrider Club runs a water testing lab at Santa Monica High under the guidance of their Marine Biology teacher. This club has been collecting and testing weekly water samples from three local beaches since 2009. Two of their sampling sites have known pollution issues, including the Santa Monica Pier and a storm drain that discharges polluted runoff and trash directly onto the beach. Their third site acts as a control and is located at a beach where the students like to hang out and surf. Club members collect and process the water samples during their lunch period and go back to the lab the next day to read and record their results.

The Heal the Bay Surfrider Club at Santa Monica High has done a really good job of getting their water quality results out into their local community to raise awareness of local water pollution issues. In

addition to posting their data on the Surfrider BWTF website, they also have 'Safe to Surf' water quality boards set up at 10 local businesses and shops that are updated according to their weekly results. They also frequently send out press releases when their testing reveals alarmingly high bacteria levels as is often the case at their storm drain site after fall and winter storms flush the landscape. Club members have also presented their results and study design at the LA County Science Fair and Surfrider's West Coast Chapter Summit, and are featured in a [video](#) produced by the Green Observers Foundation.

In addition to their weekly sampling, the students host and participate in different events throughout the school year including an end-of-the-year program celebration, beach cleanups, and paddle-outs to support plastic bag bans. They also host a mentorship program for area middle school students and their teachers, where they are introduced to water testing methodology and local water pollution issues.



*Santa Monica High students presented their 'Safe to Surf' water quality board at Surfrider's West Coast Summit in Ventura, California. photo: Mara Dias*



*Garbage, bacteria and other 'First Flush' pollutants pooling on Santa Monica Beach after heavy rains. photo: Samohi Heal the Bay Surfrider Club*

In 2012, the West LA/ Malibu Chapter set up its newest water testing lab at Palisades High School, after being approached by several student surfers who wanted to test the water at their local beach after years of hearing reports of their friends and other surfers getting sick from swimming in polluted water. Also members of their school's Heal the Bay Surfrider Club, these students collect and process weekly water samples from a State beach that is impacted by the Temescal Canyon storm drain. Two of the students completed an analysis of their 2012 data for their AP Environmental Studies class and compared their bacteria results with local rainfall patterns and

with the results of their neighboring program at Santa Monica High. They also spoke at a LA County Board of Supervisor's hearing in support of a local initiative to control stormwater runoff and to protect beach water quality.

Palisades High intends to continue to test their beach throughout 2013 building a baseline of water quality information before a new stormwater separator and detention tank comes online to service the Temescal Canyon storm drain this fall. Their data next year should speak to the new system's effectiveness.



*Palisades High student Jack Wyman collecting a water sample. photo: Holly Wyman*



*The massive Temescal Canyon Storm Drain discharges directly into the surf at Will Rogers State Beach. photo: Holly Wyman*



## Improving Water Quality One Sip At A Time

Water is an integral component to Emergen-C vitamin drink mix, which is why Alacer is committed to protecting and improving water quality. In 2009, the triple berry-flavored Emergen-C Blue ‘splashed’ onto the scene and forged a partnership with the Surfrider Foundation. For every box of Emergen-C Blue sold, 20 cents goes directly to the Surfrider Foundation to support their water quality efforts. As of 2011, those funds directly support the Blue Water Task Force, presented by Emergen-C, which helps raise awareness about the need for clean water by alerting communities about water quality issues in their area. Since its launch, the Fund has contributed more than \$100,000 to the Surfrider Foundation.

The Surfrider Foundation is proud to be partnered with Emergen-C. Their support of our Blue Water Task Force program allows beachgoers across the country to access accurate and timely water quality information so that they may swim and surf safely and with confidence.





For any inquiries regarding this report or the Blue Water Task Force program,  
please contact [mdias@surfrider.org](mailto:mdias@surfrider.org)