SURFRIDER FOUNDATION

BLUE WATER TASK FORCE

2013 ANNUAL REPORT

Executive Summary

The Blue Water Task Force (BWTF) is the Surfrider Foundation's volunteer-run, water testing, education and advocacy program. In addition to providing valuable information on whether it is safe to recreate in the ocean, Surfrider Chapters are using this program to educate students and the public about water quality issues and to motivate local governments and stakeholders to take action to identify and fix sources of ocean pollution.

In 2013, there were twenty-eight BWTF labs conducting water testing programs and using Surfrider's BWTF website to display and share their results. Four new labs were established by the New York City and Eastern Long Island Surfrider Chapters in New York, the Charleston Chapter in South Carolina, and one located on the North Coast of Oregon. Total testing was up 15% from the previous year, with a total of 3,127 water tests performed during the 2013 calendar year.

Most water samples collected by Surfrider (73%) were relatively clean and measured very low bacteria levels. Eleven percent of the BWTF results indicated medium bacteria levels, and 16% indicated the presence of high bacterial levels considered unsafe for swimming, surfing, or other recreational exposure.

The majority of the water samples that failed to meet health standards were taken from freshwater sources such as rivers, creeks and marshes that are influenced by stormwater runoff or at beaches near these outlets. This is consistent with national trends, which show that stormwater runoff is the number one cause of beach closures and swimming advisories in the United States. 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, where it can present a health risk to swimmers, surfers and other recreational users.

Armed with their BWTF data, chapters are raising public awareness of local water quality issues and bringing together stakeholders to investigate and solve water quality problems caused by urban runoff and other sources of pollution. The case studies included in this annual report, describe how three different chapters are taking on new water quality challenges and bringing together local interests and governing bodies to investigate and solve water pollution problems. Surfrider Chapters across the country are also implementing other Surfrider clean water programs, such as Ocean Friendly Gardens, to demonstrate how every coastal resident can take action to protect clean water and clean beaches in their communities.

High school students collect water samples in Santa Monica, CA. photo: Ben Kay

Students learn proper laboratory techniques. photo: Ben Kay

A volunteer braves the cold winter weather in NY to collect a water sample. photo: Jay Levine

Working together to prepare a sample. photo: Kyle Lishok

Program Overview

The Blue Water Task Force (BWTF) is the Surfrider Foundation's volunteer-run, water testing, education and advocacy program. Since the program's inception over 20 years ago, BWTF volunteers have been out in their communities testing the water quality at their beaches. In many cases, even before state and local government water quality monitoring programs were established. As the coverage of government-run beach programs increased with the passage of the federal BEACH Act in 2000, Chapters began designing their BWTF programs to fill in data gaps and compliment the agency programs. To do this, many chapters test beaches that are not covered by state beach monitoring programs. Most chapter water testing programs also extend year-round, during the "off" season, when lifeguards leave the beaches and health officials stop collecting water samples, but surfers continue to surf and be exposed to potential pollution events.

BWTF labs measure bacteria levels at ocean and bay beaches and freshwater, upland 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 and shared through chapter websites and social media platforms. With the support of program sponsors, Emergen-C Blue® and Volkswagon Think Blue, chapter use of Surfrider's online, data-sharing platform continues to grow, and four new BWTF labs were established in 2013.

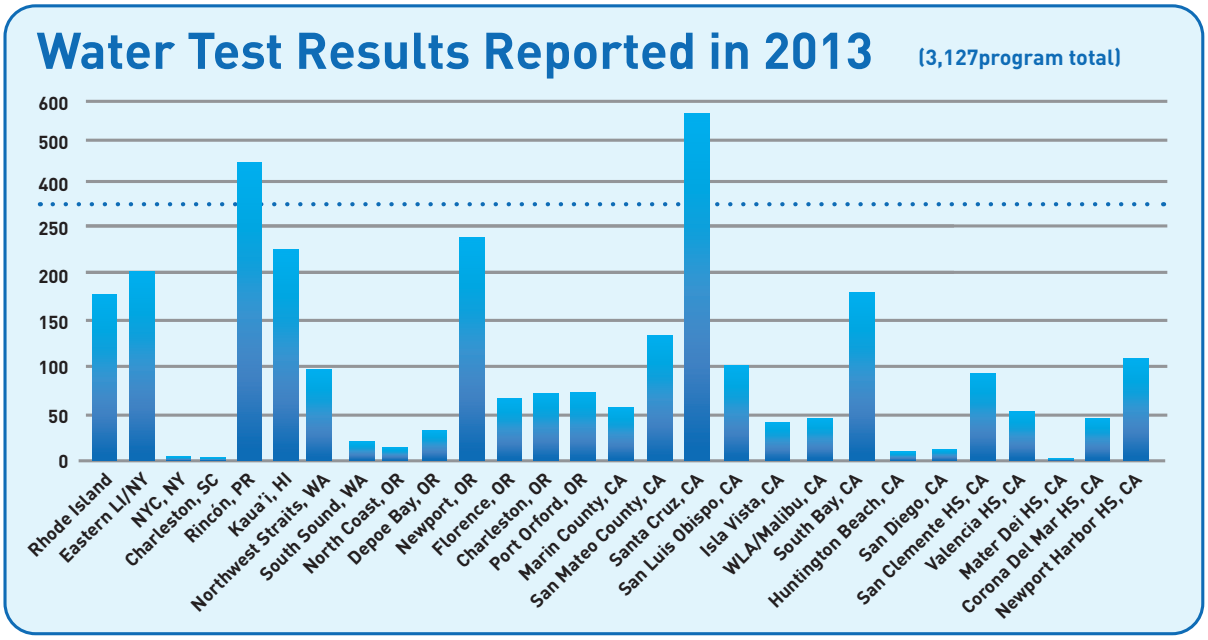
The BWTF is a very diverse program. Each Surfrider chapter is able to design and implement their water testing program to best utilize their available resources and meet local needs. Some chapters collect water samples at local beaches and run their own water testing labs. Other chapters partner with 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, and are educating students about local water quality issues and promoting a coastal stewardship ethic.

In addition to improving the public's knowledge of local water quality conditions, BWTF volunteers often become advocates for the beaches and watersheds they monitor and will present their data to local decision makers when water quality issues are discovered. Many Surfrider chapters have been quite successful at integrating their BWTF citizen science program into local management efforts aimed at solving beach pollution problems.

Surfrider's diverse membership is motivated by their common love for the ocean and a strong desire to protect our beaches for everyone's enjoyment. The BWTF provides a vehicle for volunteers to participate in science and to motivate coastal communities to take action to clean up our watersheds and improve the water quality at our beaches.

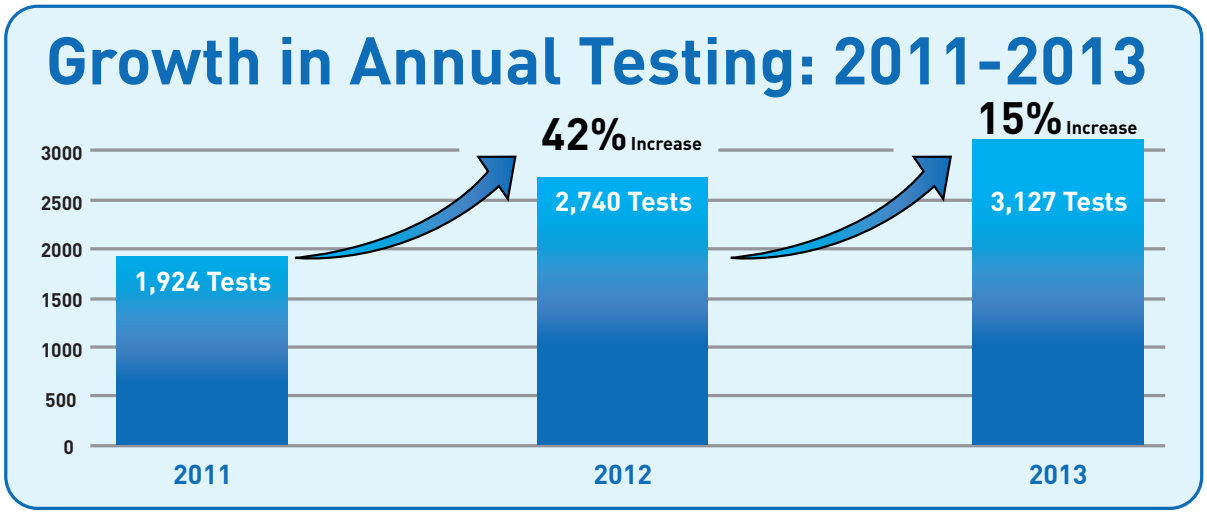
2013 Program Activity & Results

This report covers all water testing data entered into the Surfrider Foundation's BWTF website during the 2013 calendar year.



In 2013, 28 water testing labs entered data for a total of 3,127 water samples into Surfrider's BWTF website. Each lab listed above is associated with a Surfrider Chapter or distinct group of activists, with the exception of the school-based programs in Southern Canlifornia. The West LA/Malibu Chapter supports two local high school (HS) labs, and the Valencia, Mater Dei, Corona del Mar, and Newport Harbor HS labs are all part of the Newport Beach Chapter's Teach and Test program.

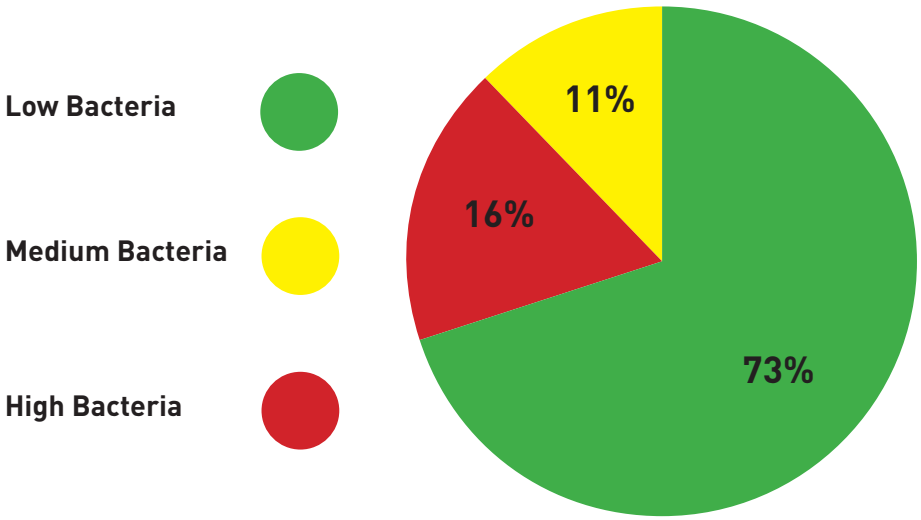
The Santa Cruz Chapter in California showed the most activity with 579 samples collected in 2013. The Rincón Chapter in Puerto Rico reported 441 test results. The labs in Eastern Long Island, Kaua'i and Newport, OR all reported over 200 test results each, and five other labs processed over 100 water samples over the course of the year.



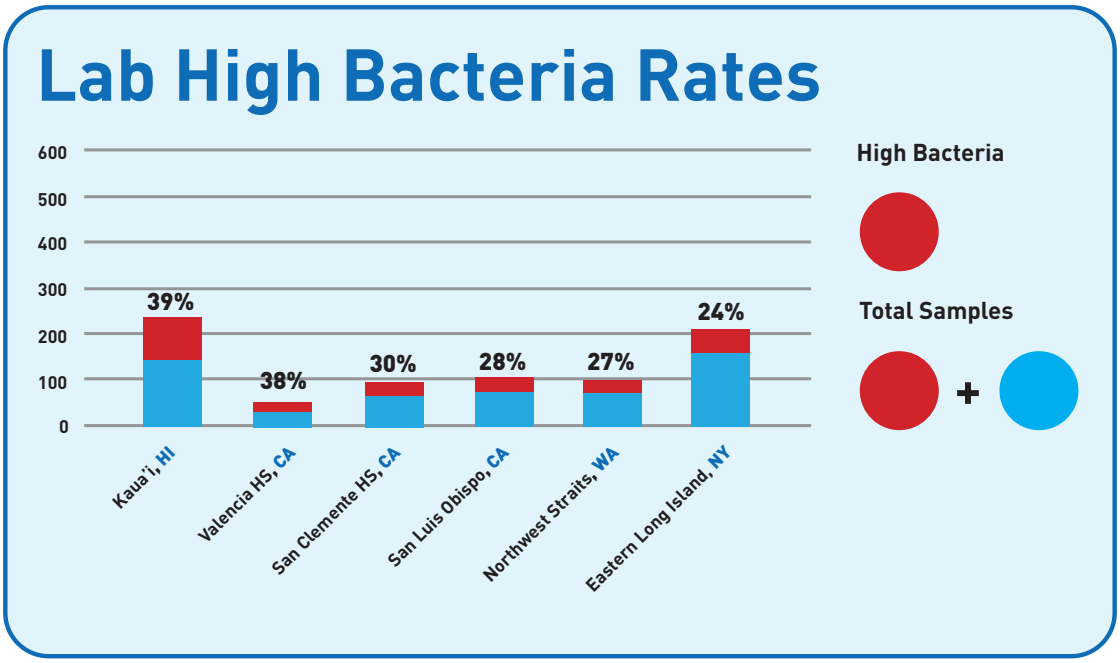
The Blue Water Task Force program continues to grow both in number of water tests performed and number of labs in operation. There were 20 labs reporting BWTF data in 2011, 23 BWTF labs in 2012, and 28 labs in 2013. The 3127 water quality results reported in 2013 shows a 15% increase from the 2740 results reported in 2012. The map below shows the location of all BWTF labs collecting and recording water quality data during 2013.

Bacteria Levels Measured by the BWTF in 2013

The collective results from all the participating BWTF labs have remained relatively constant since we began compiling an annual report in 2011. Of the 3,127 water tests reported in 2013, 73% indicated low bacteria levels, 11% indicated medium bacteria levels and 16% measured high bacteria levels that exceed the national water quality standards set by the EPA to protect public health in recreational waters. There has been a slight drop in high bacteria levels measured over the past three years from 21% in 2011, to 18% in 2012 and now 16% in 2013.



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 2013 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 Kaua'i Chapter in Hawaii had the highest bacteria rate of all the BWTF labs. In 2013, the Kaua'i Chapter's high bacteria rate was 39%, up from 29% in 2012 and 31% in 2011. The Kaua'i Chapter tests 21 surf breaks and freshwater streams on a monthly basis. The surf breaks generally test clean, but many of the streams they sample have chronic bacteria pollution problems. In 2013, Kaua'i dropped two of their sampling sites at surf breaks that nearly always tested clean, possibly accounting for the increase in their high bacteria rate. Also contributing to their high bacteria rate this past year could be that one of their regularly scheduled, monthly sampling events coincided with the end of a particularly bad storm in November. A Brown Water Advisory was issued by the State, and the Chapter's test results revealed high bacteria levels at nearly all of their sampling sites.

Thirty-eight percent of Valencia High School's 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 in Southern California. Valencia had a similar high bacteria rate of 34% in 2012 and is beginning to demonstrate real water quality concerns in the lakes they are monitoring.

San Clemente High School, also in Southern California, recorded a high bacteria rate of 30%, down from 42% in 2012, and up from 22% in 2011. These students test weekly at four ocean beaches that receive significant drainage from steep upland watersheds. All four beaches that they test produced roughly the same number of high bacteria counts throughout the year.

The San Luis Obispo Chapter, located on California's central coast, recorded a high bacteria rate of 28%. During 2013, the Chapter monitored the water quality at Avila Beach Pier and at the mouth of the San Luis Obispo Creek, which discharges onto the beach nearby. The Creek mouth accounted for a large majority of the high bacteria counts measured by the Chapter, failing to meet health standards nearly half of the time it was sampled. Read more about what this Chapter is doing to assess the chronic water pollution problems in their community in their case study at the end of this report.

A rainbow shines behind Dr. Carl Berg as he prepares to sample a murky stream in Kaua'i. photo: Kaua'i Chapter

Fluorescing wells in these IDEXX Quanti-trays indicate high bacteria levels. photo: Steve Tamar

BWTF volunteers sample a wetland area in Montauk, NY. photo: Jay Levine

The Northwest Straits Chapter in Washington saw their high bacteria rate increase for the third year in a row, from only 5% in 2011, to 20% in 2012 and 27% in 2013. Two thirds of their high bacteria samples were collected from rivers and creeks and their receiving bay beaches near the City of Bellingham. Their remaining high bacteria levels were measured at nearby, semi-enclosed bay beaches where storm-water runoff and stagnant water conditions in the summer can contribute to local pollution problems.

One of the program's newest labs, the Eastern Long Island Chapter in New York, measured a high bacteria rate of 24%. From June to December of last year, they processed 202 water samples, and with very few exceptions, nearly every high bacteria level they measured was collected from an enclosed bay beach or from a freshwater source discharging onto that beach. They also tested a storm outfall pipe that discharges onto an ocean beach on five separate occasions, and it failed to meet health standards all five times.

The Surfrider chapters in South Bay, CA and Rincón, Puerto Rico have had some of the program's highest bacteria rates in the past, but both missed the 20% cut-off this year with rates of 19% and 17%, respectively.

Discussion of Results

The Blue Water Task Force program continues to grow both in number of water tests performed and number of labs in operation. During 2013, two labs stopped testing (Sonoma County and the Esperanza HS program), but seven new labs started entering their data onto the BWTF website, including four newly established labs: New York City and Eastern Long Island in New York; Charleston, South Carolina; and North Coast, Oregon. Three labs that were already in operation began using the website to display and share their data including Santa Cruz, San Luis Obispo, and Huntington Beach, all located in California.

The cumulative results from 2013 show that most samples collected by Surfrider do meet national health standards. There has even been a slight decrease in high bacteria measured program-wide over the past three years from 21% in 2011 to 16% in 2013. Additional years of reporting will reveal if this is a true trend indicating a change in beach water quality condition or if it is a result of new 'clean' sites being added by the new BWTF water testing labs coming online in the last two years.

Of the water samples that failed to meet bacteria health standards, the majority were taken from freshwater sources such as rivers, creeks and marshes that are influenced by stormwater runoff 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, where it can present a health risk to swimmers, surfers and other recreational users.

The Chapters that are most often finding high bacteria levels in their water samples, are usually sampling in areas that are influenced by urban runoff. Both the Kaua'i and Northwest Straits Chapters' high bacteria rates did increase in 2013. This could be attributed to the chapters changing their sampling plans to cover beaches with more severe water quality problems or new, emerging threats that need to be identified and addressed. Fortunately both Chapters are fully engaged with local environmental and local authorities to do just that. Learn more from their BWTF Local Information pages: Kaua'i and Northwest Straits.

Nye Creek outfall discharging urban runoff directly onto the beach in Newport, Oregon. photo: Charlie Plybon

Volunteers sample a stream in Rincón, Puerto Rico with a severe bacteria pollution problem. photo: Steve Tamar

Solutions

The BWTF helps chapters identify water pollution problems so they can begin to educate their communities about water quality issues and work towards solutions. Every year, the chapters that are running water testing programs take on new water quality challenges and become the catalyst that brings together stakeholders to investigate and solve local water pollution problems.

For example, in 2013, the Santa Cruz Chapter, spurned on by years of reporting high bacteria levels at Cowell Beach near the popular downtown wharf area decided to start investigating the possible sources of pollution. Cowell Beach has received a failing water quality grade for four years in a row from Heal the Bay's Beach Report Card and, likewise, has had a continued presence at the top of their Beach Bummer's list. The Chapter is currently conducting a comprehensive watershed study of the San Lorenzo River that discharges into the ocean in downtown Santa Cruz in collaboration with the Coastal Watershed Council, the County and City of Santa Cruz, and the Regional Water Quality Control Board. The aim of this study is to locate bacteria hot spots and identify their sources so management agencies can focus remediation strategies to clean up this watershed and ultimately see real water quality improvements at Cowell Beach.

In addition to the BWTF, chapters are running other complimentary, clean water programs to help solve pollution problems at the beach. Know Your H2O is Surfrider's freshwater management program aimed at preventing pollution from entering the ocean. Through this program, Surfrider activists are educating their communities and advocating for comprehensive and integrated approaches for water and land management to reduce downstream pollution and to support vital and healthy coastal communities and ecosystems.

Through conservation, using climate appropriate plants, implementing low impact development, and capturing and reusing 'waste' water, water pollution entering the ocean can be reduced and our drinking water supply can be protected. The Surfrider Foundation's animated movie "The Cycle of Insanity: The Real Story of Water" is shown across the country to help chapters begin a dialogue in their community about the various challenges and solutions relating to water management.

Surfrider's Ocean Friendly Gardens (OFG) program is reviving watersheds and oceans by applying CPR – Conservation, Permeability, and Retention – to coastal landscapes and hardscapes. OFGs utilize rainwater as a source of irrigation, creating permeable soil, and conserving water, energy and wildlife habitat with the use of native plants. Instead of directing water off properties as quickly as possible, OFGs allow the soil and plants to sponge it up, filtering and using the water for irrigation, and eventually directing it to recharge groundwater and maintain normal stream flows.

Ocean Friendly Gardens, natural wetlands, green streets and other low impact development applications are some of the best management practices (BMPs) that chapters are advocating for to restore the natural cycle of water in developed areas. Surfrider volunteers are leading neighborhood walks, community talks, and neighborhood workdays to promote these natural stormwater solutions in their communities. By restoring natural coastal habitats, improvements in water quality and increased sediment transport for natural beach replenishment, can be realized while providing protection against sea level rise at the same time.

The comprehensive and integrated approach for solving ocean water pollution problems that is at the core of Surfrider's clean water programs can perhaps best be seen in action in Ventura, California. For the past two decades, the Ventura Chapter has been identifying problems and promoting solutions for clean water throughout the Ventura River watershed. Their pro-

active urban watershed program is affecting real improvements in water supply protection, water quality, habitat and recreation by taking advantage of numerous opportunities to restore and enhance ecosystem function throughout the watershed. Read Surfrider's Coastal Blog to learn more.

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. photo: Paul Herzog

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.

San Luis Obispo, California

The San Luis Obispo (SLO) BWTF began 2013 as a small water testing program with two volunteers who conducted weekly sampling at two sites. Throughout the year, the Chapter's BWTF Coordinator built a team of dedicated water samplers and testers that are out monitoring eleven sites on a weekly basis. Their lab is set up at the Central Coast Aquarium in Avila Beach, conveniently located for most of their sampling sites near the mouth of the San Luis Obispo Creek.

The Chapter is monitoring popular ocean beaches where there are known water quality concerns and within the freshwater creeks that discharge onto these beaches. They've also set up their sampling schedule to compliment the SLO County Health Department's beach monitoring program. The County samples on Mondays, and the Chapter tests every Thursday.

In 2013, the SLO BWTF team developed an illustrated training manual and worked with the County to assure their lab was up to adequate quality control specifications. The manual can be downloaded from SLO's BWTF Local Info page. Monthly program updates are also posted on the SLO Chapter's website.

The Chapter has also begun to reach out into the community to increase public awareness of the chronically polluted water conditions that they have been measuring at some of their local beaches. The Chapter is acting as a catalyst to bring together local agencies, stakeholders and research institutions to seek funding to perform a source-tracking watershed study at Old Port Beach. Situated between Avila Beach and the Port San Luis/Harford Pier, this beach is regularly monitored by the County, but often fails to meet bacteria health standards. There are several possible sources of bacteria at this beach including human and dog activity on the beach, sea birds, commercial fishing and processing activities at and near the Harford Pier, and a large resident population of seals and sea lions.

The Chapter has also just started their own watershed study in the San Luis Obispo Creek. Over the last year, 50% of the samples they collected at the mouth of the Creek in Avila Beach exceeded bacteria health standards. The Chapter has added 4 new sites within the last 2.5 miles of the Creek and will sample all Creek sites weekly for a 30-week period from April to October, 2014. The goal of this watershed study is to begin compiling data that will allow the Chapter to determine how far up the creek the high bacteria levels extend and to help zero in on the source or sources of pollution.

Avila Beach, California. photo: shutterstock.com

Port Orford, Oregon

The Port Orford Blue Water Task Force is a collaborative effort between the Curry County Surfrider Chapter, the Redfish Rocks Community Team (RRCT) and the Port Orford/Langlois School District. The RRCT is the community liaison for the Redfish Rocks Marine Reserve and Marine Protected Area, and its membership represents the City of Port Orford, commercial fishing, recreational fishing, port, local business, recreation, conservation, watershed council, and scientific interests. The main goal of the Port Orford BWTF program is to expand upon other local monitoring efforts and to provide citizen-science opportunities in and around the Red Rocks Marine Reserve.

Community volunteers, students, teachers and staff from participating organizations collect water samples from popular recreational beaches and important ecological areas within the Port Orford Stewardship Area and bring their samples to Pacific High School where they are processed by students. The Oregon Department of Environmental Quality only conducts their beach water testing program during the summer months, and the Chapter's BWTF program augments that program by providing monthly water quality data from November through June.

The Port Orford BWTF program reaches over 60 students during the school year. Students at both Driftwood Elementary and Pacific High School are trained in water quality collection and analysis and educated on the importance of water quality for ecological and recreational health. Students are taken out of the classroom to explore the local sources of point and non-point pollution and how their water testing program can help track those sources over time. Participation in the BWTF program provides both the students and community volunteers with experience in a hands-on science project with real world applications. Visit the Port Orford BWTF Local Info page to learn more about this program and to download their inaugural Annual Report for the 2012/2013 school year.

The Red Rocks Marine Reserve in Port Orford, WA.
photo: Pete Stauffer

Mr. Betz's science class from Driftwood Elementary.
photo: Charlie Plybon

Eastern Long Island, New York

Last summer the Eastern Long Island (ELI) Chapter joined forces with a local partner, the Concerned Citizens of Montauk (CCOM), to begin water quality testing at some of the most popular swimming and surfing beaches on Eastern Long Island. CCOM is a like-minded, locally based environmental non-profit organization that works to preserve and protect the unique environment and ecology of Montauk, NY.

The main purpose of this BWTF program is to raise public awareness of local water quality challenges. It covers a variety of coastal waters, including popular ocean and bay beaches, their freshwater inputs, and a large coastal pond located right in the middle of downtown Montauk. Volunteers from both partner organizations collect samples weekly during the warmer summer and fall months and monthly during the colder winter and spring seasons. They also sample after major rain events and process their samples at a water testing laboratory located at the CCOM office. This joint water testing program was one of the most prolific within the program during 2013 with 202 water test results reported on the BWTF website.

Besides their regularly scheduled testing, the BWTF volunteers have hosted sampling events for local high school students introducing them to field sampling and laboratory techniques as well as local water quality issues.

This young water testing program has already achieved some success in motivating local change. Three of their sites are located at an enclosed bay beach on Lake Montauk that once had an officially designated bathing area, but has since been closed due to water quality concerns. Unfortunately, this beach is still favored by families with small children because of its calm water conditions. The Chapter's water quality data have demonstrated that the bacteria levels at this beach and in the two freshwater creeks that flow into the Lake nearby, often exceed health standards, and they have convinced the Town to develop permanent signage to be posted at the beach warning of the chronically polluted conditions. The Town is also considering their data as they conduct a watershed study for Lake Montauk that will assess local water quality conditions and sources of pollution. The Chapter and CCOM hope that the increased public awareness generated by the new beach signs and watershed study will also generate the political will to find and fix the sources of bacteria pollution into Lake Montauk, which they suspect will likely end up being residential septic systems located too close to the water.

An aerial view of a crowded summer's day on Ditch Plains Beach in Montauk, NY. photo: Dalton Portella

Teamwork in the lab. photo: Mara Dias

Program Sponsors

The Surfrider Foundation is proud to be partnered with Volkswagen of America, Inc. and 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.

Think Blue.®

Das Auto.

Volkswagen has a major objective: ecological sustainability. The automaker, aiming to become the leading eco-conscious car brand worldwide, is committed to making efficient and sustainable mobility accessible to everyone. Volkswagen refers to this as its “Think Blue” initiative.

Volkswagen understands that achieving its goals takes much more than just building efficient cars. The company firmly believes to achieve something you have to view the bigger picture, beginning with yourself.

This is where Surfrider comes in. Volkswagen of America, Inc. partnered with the Surfrider Foundation in 2012 to increase awareness and encourage individuals across the country to make positive changes in their lives to help ensure our nation’s oceans, waves, beaches and waterways are clean and healthy—today, tomorrow and for years to come. Volkswagen works with Surfrider Chapters around the country to educate its fans about the Foundation’s clean water programs and campaigns while providing them with the tools and resources necessary to combat the variety of sources of water pollution. Click here to learn more about Volkswagen’s Think Blue initiative.

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In 2009 when Alacer introduced the triple berry-flavored Emergen-C Blue a partnership with the Surfrider Foundation was forged. For every box of Emergen-C Blue sold, 25 cents goes directly to Surfrider Foundation’s clean water initiative. These funds directly support the Blue Water Task Force, which helps raise awareness about the need for clean water by alerting communities about water quality issues in their area.

As an added bonus, Emergen-C provides our chapter network with complimentary product support for events throughout the year.

Click here to learn more how you can get involved.

For any inquiries regarding this report or the Blue Water Task Force program, please contact mdias@surfrider.org