







The Surfrider Foundation is a non-profit grassroots environmental organization dedicated to the protection and enjoyment of our world's ocean, waves and beaches through a powerful activist network.

Mara Dias

Water Quality Manager
Blue Water Task Force
surfrider.org/blue-water-task-force

Surfrider Foundation P.O. Box 6010 San Clemente, CA 92674-6010

949.492.8170 mdias@surfrider.org

For more information on our campaigns and programs, visit **surfrider.org**

Contents

- **2** Executive Summary
- **3** Clean Water Initiative
- **5** BWTF Program Overview
- 6 2014 Program Activity & Results
- 10 Discussion of Results
- 11 Case Studies

Thank You to Our Sponsors:

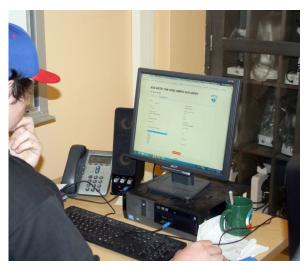
















Executive Summary

Over its 30-plus-year history, the Surfrider Foundation has been protecting our ocean, waves and beaches for our enjoyment through a powerful activist network. Through the Clean Water Initiative, Surfrider chapters and activists are building awareness of water pollution problems and advocating for solutions that can protect local water supplies and prevent pollution from reaching the ocean.

The Blue Water Task Force (BWTF) is the Surfrider Foundation's volunteer 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 2014, there were thirty BWTF labs conducting water testing programs and using Surfrider's website to display and share their results. The Virginia Beach Chapter and the Vancouver Island Chapter in Canada both established new labs during 2014.

Two new school labs also started testing this past year; Bandon High School supported by the Coos Bay Chapter in Oregon, and Northwood High School supported by the Newport Beach Chapter in California. Total testing was up 30%, with a total of 4,057 water tests performed during 2014, in comparison to 3,127 water tests performed in 2013. Surfrider also started tracking the number of distinct sites sampled. In 2014, BWTF volunteers collected water samples at 293 sampling sites, 45 sites more than the previous year.

The significant growth in the BWTF program during 2014 can be attributed to both the newly established labs and the increased sampling efforts of several of Surfrider's larger, already-established water testing programs as they expanded coverage to previously untested beaches or to investigate sources of pollution up in the watershed.

Consistent with previous years' results, most of the water samples (68%) collected by Surfrider during 2014 were relatively clean and measured very low bacteria levels. Twelve percent of the BWTF results indicated medium bacteria levels, and 20% 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 urban, 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, Surfrider 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 four different Surfrider 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 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.

Learn more at www.surfrider.org/blue-water-task-force



Clean Water Initiative

The goal of Surfrider's Clean Water Initiative is to reduce ocean pollution so it is safe to surf, swim and play in the ocean. Surfrider chapters and activists are building awareness of local water pollution problems and advocating for solutions that can protect local water supplies and prevent pollution from reaching the ocean.

Chapters support the Clean Water Initiative by engaging with their communities through clean water programs: Blue Water Task Force (BWTF), Ocean Friendly Gardens (OFG) & Rise Above Plastics (RAP). They also run campaigns against projects that will cause pollution and advocate for wise management of our land and water resources.

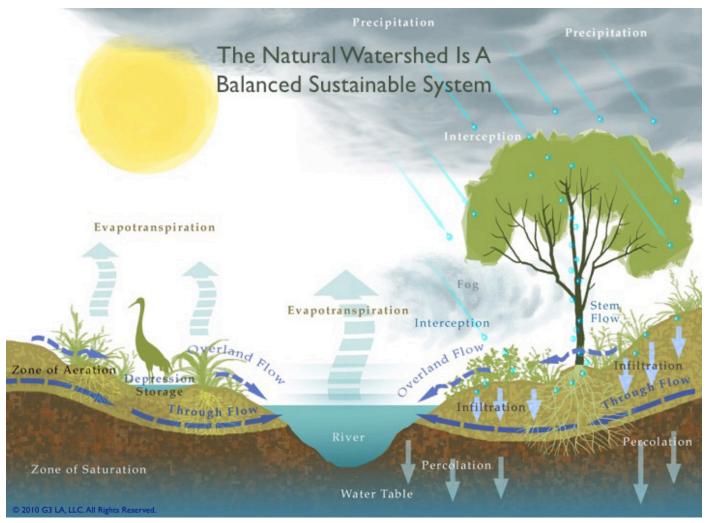






What is the problem?

The urbanization of our coasts has altered and polluted the natural water cycle. In undeveloped, natural areas, rainfall is absorbed by soil and plants, percolates through the soil to underground aquifers or flows into local streams. Rooftops, pavement and other impervious surfaces in urban and residential areas prevent rain from soaking into the ground and instead direct polluted runoff straight towards the ocean. At the same time, we are wasting valuable freshwater by using it once, mixing it with waste, and then discharging it, partially treated, into the ocean. This is threatening the long-term security of our water supply and polluting our coastal waters. Watch the short film The Cycle of Insanity to learn more.



A watershed is a geographic area in which all sources of water, including rainfall, snow melt, streams, rivers, lakes, wetlands, and ground water, all drain to a common surface water body, generally the ocean in coastal areas.

Protecting Clean Water throughout the Watershed

The Surfrider Foundation advocates for solutions that can restore the water cycle and natural functions of coastal ecosystems to protect local water supplies and prevent pollution from reaching our ocean, waves and beaches. This watershed-based approach also helps support resilient and healthy coastal communities and economies.



(1) Water Quality Monitoring

Testing the water at the beach lets us know where it is safe to swim and surf, and helps identify pollution problems so they can be fixed.

Ocean Friendly Gardens

Applying CPR - Conservation, Permeability and Retention – to your garden conserves water, creates habitat for wildlife, filters and reduces runoff from your landscape, and absorbs carbon dioxide.

3 Green Streets

Capturing rainwater in vegetated areas next to streets and paved parking lots allows water to soak into the ground, which recharges groundwater supplies, reduces flooding and prevents polluted runoff from reaching the beach and ocean.

(4) Reuse & Recycle Water

Recycling wastewater reduces ocean discharge from sewage treatment plants while creating a local, reliable and safe fresh water supply. Greywater from our homes can also be re-used for yard irrigation.

5 Watershed Restoration

Natural rivers and creeks maintain stream flows for wildlife and transport sand to our beaches. Wetlands are natural sponges, filtering out pollution and reducing flooding by helping water soak into the ground for our use later.

BWTF Program Overview

The Blue Water Task Force (BWTF) is the Surfrider Foundation's volunteer 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, Surfrider 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.

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 other 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.

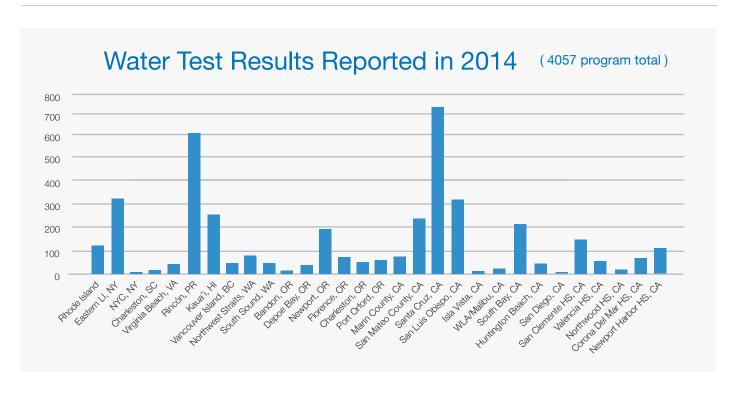
Surfrider's diverse membership is motivated by their common love for the ocean and a strong desire to protect our beaches for everyone's enjoyment. The BWTF provides a vehicle for volunteers to participate in science and to motivate coastal communities to take action to clean up our watersheds and improve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





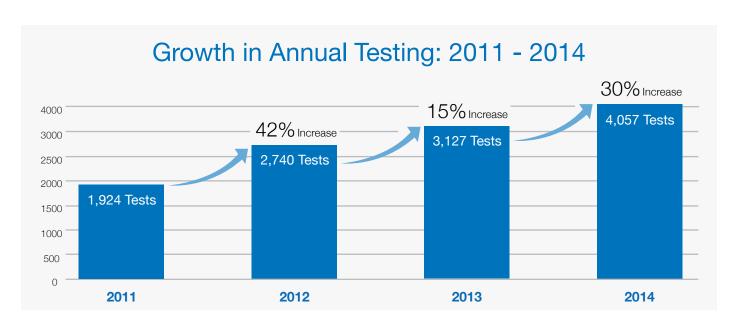
2014 Program Activity & Results

This report covers all water testing data generated by the BWTF program during the 2014 calendar year.



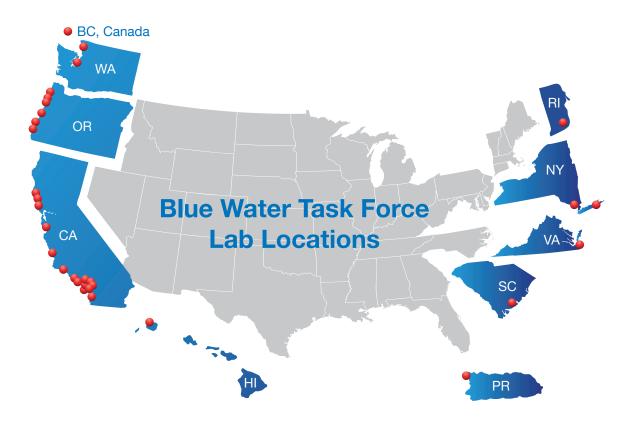
In 2014, 30 water testing labs entered data for a total of 4,057 water samples into Surfrider's BWTF website. Each lab listed above is associated with a Surfrider chapter or distinct group of activists, with the exception of the school-based programs in Southern California. The West LA/Malibu Chapter supports two local high school (HS) labs, and the Valencia, Northwood, 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 751 samples collected in 2014. The Rincón Chapter in Puerto Rico reported 603 test results. The labs in Eastern Long Island, NY and San Luis Obispo, CA reported 329 and 322 water test results respectively. The San Mateo County and South Bay Chapters in California and the Kaua'i Chapter in Hawaii processed over 200 water samples each, and four 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 30 labs reporting BWTF data in 2014, up from 28 labs in 2013. The 4,057 water quality results reported in 2014 show a 30% increase from the 3,127 results reported in 2013. We also started tracking the number of distinct sites sampled this past year. In 2014, BWTF volunteers collected samples at 293 sampling sites, 45 sites more than the 248 that were sampled in 2013.

The map below shows the location of all BWTF labs collecting and recording water quality data during 2013.

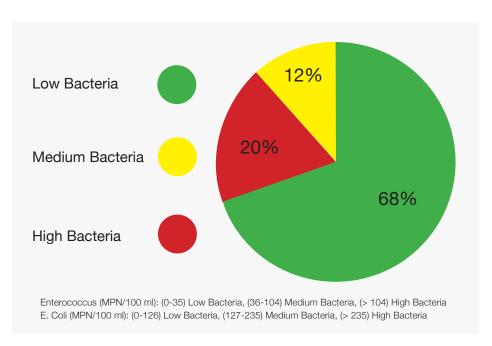


Bacteria Levels Measured by the BWTF in 2014

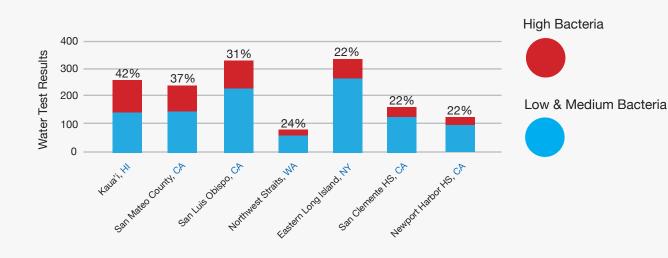
The collective results from all the participating BWTF labs have remained relatively constant since we began compiling an annual report in 2011.

Of the 4,057 water tests reported in 2014, 68% indicated low bacteria levels, 12% indicated medium bacteria levels, and 20% measured high bacteria levels that exceed the national water quality standards set by the EPA to protect public health in recreational waters.

High bacteria levels measured over the past four years have fluctuated very little from 21% in 2011, 18% in 2012, 16% in 2013, and now 20% in 2014.



Lab High Bacteria Rates



The chapters whose high bacteria rates were 20% or greater and who entered data for more than 50 water samples during 2014 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 2014, the Kaua'i Chapter's high bacteria rate was 42%, up slightly from 39% in 2013. The Kaua'i Chapter tests 24 surf breaks and freshwater streams on a monthly basis. The surf breaks generally test clean, but most of the streams they sample have chronic bacteria pollution problems. In fact, six of their sampling sites exceeded bacteria standards 90 – 100% percent of the time last year. Four of these sites are in streams, and two are surf breaks located where these polluted streams flow into the ocean.

Also contributing to their high bacteria rate this past year is that their regularly scheduled, monthly sampling event in November coincided with wet, stormy weather, which often creates polluted conditions at the beach and prompts the State to issue Brown Water Advisories. During November, 12 out of the 21 sites they sampled produced high bacteria levels above health standards. Even sites that normally test clean produced high bacteria counts. Read more about the Kaua'i BWTF program and the Chapter's campaign to convince the State Department of Health to post signs to warn the bathing public of dangerous bacteria levels at the beach or in the recreationally-used streams on Surfrider's Coastal Blog.





The San Mateo County Chapter, located on California's central coast, recorded a high bacteria rate of 37%. Nearly all of the Chapter's high bacteria counts came from three sampling sites. Two of these problematic sites are located where chronically polluted urban streams discharge into the ocean. Unfortunately, it is where streams like these flow across the beach that children enjoy splashing around in their relatively calm and shallow waters. The other site that generated a lot of high bacteria counts is located at Capistrano Beach in Pillar Point Harbor which, in addition to receiving two major sources of freshwater, is also plagued with sluggish water exchange with the rest of Half Moon Bay.



The San Luis Obispo (SLO) Chapter, also from California's central coast, recorded a high bacteria rate of 31%, up slightly from 28% in 2013. During 2014, the Chapter undertook a watershed study, adding six sampling sites up in the San Luis Obispo Creek watershed, to better asses the bacteria load that the Creek is carrying down to Avila Beach. Eightysix of their 101 samples that produced high bacteria counts were collected from the SLO Creek watershed. Read more about what this Chapter is doing to raise community awareness and assess their local water pollution problems on their BWTF Local Info webpage.



The Northwest Straits Chapter in Washington measured a high bacteria rate of 24% in 2014, which falls right in the middle of their high bacteria rate of 27% measured in 2013 and 20% in 2012. Nearly all of their high bacteria samples were collected from rivers and creeks near the City of Bellingham and their receiving bay beaches. One beach site, Wild Cat Cove at Larrabee State Park, tested cleaner than it has in the past. It seems the Chapter's efforts to educate campers and assist the State Park with raccoon management strategies are finally paying off as bacteria levels decreased significantly during the summer of 2014. Learn more about the history of bacteria pollution at Larrabee State Park on the Northwest Straits Local Info webpage.

The Eastern Long Island Chapter in New York, and the labs at San Clemente and Newport Harbor High Schools in Southern California all recorded a high bacteria rate of 22%. The Eastern Long Island Chapter detected most of their high bacteria counts in samples collected from an enclosed bay beach on Lake Montauk or from a creek discharging onto that beach. The San Clemente students test four ocean beaches that receive significant drainage from steep upland watersheds. The Newport Harbor students sample in the estuaries of Newport Bay and at beaches close to where the Bay and the Santa Ana River empty out into the ocean.



Although the BWTF lab at Valencia High School recorded high bacteria rates above 30% for the previous two years, their high bacteria rate dropped to only 3% in 2014. Valencia High School tests during the months of February and March in freshwater lakes in the area surrounding their school in Southern California. Dry conditions during their testing period likely influenced the relatively low bacteria levels they measured in 2014.

Discussion of Results

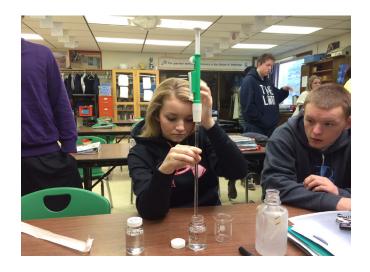
The Blue Water Task Force continues to grow every year, providing water quality information to beach-goers and building community awareness of local pollution problems.

The Blue Water Task Force program continues to grow both in number of water tests performed and number of labs in operation. During 2014, four new BWTF labs were established: Virginia Beach, Virginia; Vancouver Island, Canada; Bandon High School, Oregon; and, Northwood High School, California. Two existing labs did not test in 2014, Mater Dei High School in Southern California and North Coast, Oregon.

The number of water tests recorded during 2014 increased 30% from the amount of tests performed in 2013 (from 3,127 in 2013 to 4,057 tests in 2014). The increase in testing, however, can only partially be explained by the fact that there were more labs testing. During 2014, several larger, already established water testing programs added new sampling sites to expand coverage to previously untested beaches or to investigate sources of pollution up in the watershed. Both the Santa Cruz and San Luis Obispo Chapters undertook comprehensive watershed studies in 2014. The BWTF programs in Kaua'i, Rincón, and Eastern Long Island added new ocean beaches and freshwater sources to their sampling plans, and the San Mateo County Chapter increased the frequency of their testing from the previous year. These six labs account for 89% of the program's growth, or 824 of the 930 additional test results reported in 2014.

The cumulative results from 2014 show that most samples collected by Surfrider do meet national health standards. The 20% high bacteria levels measured in 2014 show a slight increase from the 16% high results reported in 2013, but remain very close to the program's four year average of 19% of samples exceeding health standards.

Another trend apparent again this year, is that the majority of samples that produced high bacteria counts were collected from freshwater sources such as rivers, creeks and marshes influenced by stormwater runoff or at beaches near these freshwater outlets. This is to be expected, as stormwater runoff is the largest source of beach pollution reported every year. In developed coastal watersheds rain typically flows off of paved and manicured urban, 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. Exposure to polluted water can cause gastrointestinal illness, eye and ear infections, staph infections and other skin rashes. This is why beach water quality monitoring and public notification programs like the Blue Water Task Force are so critical for protecting public health at our beaches.







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

Santa Cruz, California

Building a 20-year record of water quality data for local beaches and driving campaigns to solve beach pollution problems

The Santa Cruz Chapter was one of the first Surfrider chapters to establish a BWTF water testing program back in 1993. In fact, they were performing beach water quality tests before CA State law AB411 went into effect requiring local health agencies to start monitoring beach water quality.

For the past 20+ years, the chapter has been building a historical record of water quality at area beaches and freshwater outlets from Natural Bridges State Park in Santa Cruz down to Manresa State Beach in Watsonville, CA. There are currently twelve BWTF volunteers in Santa Cruz that collect water samples from 17 local beaches every week. Samples are processed at the chapter's lab located at the Santa Cruz Yacht Harbor.

The chapter has done a great job of getting their water quality results out into the community using many different platforms. A map of their sampling sites and their BWTF data is posted directly onto their chapter website. They have created a Facebook page dedicated solely to their BWTF program that is updated every week with their most recent results. They have also driven the development of a new BWTF data widget that any chapter can use to promote their water testing program with their local partners or sponsors. A local surf report, santacruzewaves.com, displays the chapter's water testing results with this widget right next to the surf cams for Steamer's Lane and other local surf breaks.

The chapter has been doing more than just providing valuable water quality information. Motivated by years of reporting high bacteria levels at Cowell Beach near the popular downtown wharf area, the chapter decided to start investigating the possible sources of pollution. Cowell Beach has received a failing water quality grade for five 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 list.

In collaboration with the Coastal Watershed Council, the County and City of Santa Cruz, and the Regional Water Quality Control Board, the chapter conducted a

comprehensive watershed study of the San Lorenzo River from October 2013 to September 2014. The aim of this study was to locate bacteria hot spots and identify sources of pollution in this river that discharges into the ocean right next to the popular beaches located in downtown Santa Cruz. The results of this study will be presented soon, but bacteria data can be viewed now on the BWTF website.

The chapter has also been participating in a Cowell Beach Working Group with other environmental groups and local agencies to find and implement pollution solutions. The Working Group has already prompted changes in the management of the Neary Lagoon outfall that empties onto Cowell Beach. A gate has been installed at the lagoon, and a diversion pump to block foul water from reaching the beach is in the works. The Group has also recommended a new citywide sewer lateral inspection program. Area sewer mains were replaced in recent years, but they want to ensure laterals connecting homes and businesses to the system are in good working order. A full suite of recommendations from the Working Group is expected soon.

Read more about the Chapter's efforts to solve the water pollution problems at Cowell Beach and to finally take this popular beach off the Beach Bummer list on their website.





Marin County, California

Engaging local students in citizen science and community advocacy

The Marin County Chapter partners with two local high schools to conduct their BWTF water testing program. Since 2007, the student scientists of the Branson School Water Quality Team, have been running a BWTF lab at their school under the supervision of a faculty advisor. Surfrider volunteers have been collecting weekly water samples at Bolinas and Stinson Beach and Bay Front Park in Mill Valley and delivering them to Branson School where dedicated student volunteers process the samples in the lab and record the results online.

The students alert the Surfrider chapter if any high results are recorded, and the BWTF Coordinator in turn sends notice to the county health department. Water quality measured at the ocean beaches is generally very good, but often, nearly 40% of the time, samples collected from Bay Front Park located on Richardson's Bay in Mill Valley, fail to meet bacteria standards for recreational exposure. The chapter has been sharing their data with local authorities to advocate for finding and fixing the local sources of pollution and to warn against proposed projects that will increase public exposure to this bacterial pollution. Read more about the chapter's community advocacy here.

In June 2014, the Marin County Civil Jury released a review of the county's sewer systems where they called out the Marin County for neglecting to properly maintain and repair their aging sewage infrastructure, which is particularly susceptible to leaks and spills during rain events. The grand jury recommended that local sewer agencies adopt new rules that require sewer hook ups, or laterals, to be tested and repaired when homes and business properties are sold, and further that agencies need to consider financing tools to provide incentives for fixing leaking sewer lines.

Due in part to the increased community awareness of the pollution problems in the Bay generated by the chapter and the Branson School BWTF, the City of Mill Valley is now considering a new sewer lateral inspection ordinance to meet the recommendations of the grand jury. The City also operates a Cash for Sewers grant program that assists homeowners with the cost of lateral inspections and replacements.

The Marin County Chapter also engages its student scientists in other Surfrider events throughout the year, like beach cleanups. On March 23, 2014 a Surfrider-hosted beach clean up at Stinson Beach was the Branson School Community Service Event of the Month, and students received community service credit for attending this beach cleanup.

In January of 2015, the Marin County Chapter established a new water testing lab at Tamalpais High School. With help and advice from the Branson School water testing volunteers, Tamalpais High Environmental Science students are now out collecting and processing weekly water samples from three new sites at Coyote Creek in Mill Valley, Waldo Point Harbor in Sausalito, and Blackie's Pasture in Tiburon, CA.

The chapter is excited to bring the Blue Water Task Force program into this new public high school, exposing the students to the science and methodology of water quality monitoring, local water pollution issues, and Surfrider's mission to protect and enjoy our ocean, waves and beaches.







South Sound, Washington

Activating volunteers, educating students and informing local management

The South Sound Chapter, based in Tacoma, Washington, started its BWTF water testing program in 2011, when they established a partnership with a science teacher at the Tacoma Public School's Science and Math Institute (SAMI). The chapter secured surplus lab equipment from the State, donated it to the school, and uses chapter funds to purchase the equipment and supplies needed to collect and test water samples for bacteria levels.

The South Sound BWTF currently monitors six public beaches around the Tacoma area. Chapter volunteers collect water samples from their designated beach, and deliver them to the high school, where the teacher and his students process them in the lab and post the results on the BWTF website. The program provides a hands-on citizen science experience for chapter volunteers, and an educational experience for the students.

In 2013, a new chapter BWTF coordinator expanded the number of beaches sampled, and began coordinating with the Tacoma-Pierce County Health Department's Swimming Beaches program and the Washington State Department of Ecology's BEACH Program to ensure that the chapter sampling protocols align with the agency programs.

During the summer recreation season, the County Health Department monitors high-use beaches weekly or bi-weekly, and posts results online. The chapter adjusted its sampling schedule during 2014 to help the County extend its regular beach testing program into the colder months, when they do not generally test but recreational users such as divers and paddlers are still very active. The chapter alerts the State and County when the BWTF program detects high bacteria levels at their sampling sites, and the County goes back out, retests, and issues swimming advisories and beach closures if the results still exceed health standards. The program provides a nice collaborative opportunity for an educational institution, Surfrider volunteers, and local health agencies to work together to provide better protection for beachgoers and water recreational enthusiasts in Tacoma.







Virginia Beach, Virginia

A successful first year of providing year-round water quality information to surfers and other ocean recreationists

The Virginia Beach BWTF is one of the new programs to start testing last year. The chapter established their water quality testing lab during the spring of 2014, and they set up their sampling plan to compliment the State beach monitoring program. The Virginia Department of Health conducts weekly water testing at public beaches in the Chesapeake Bay and Atlantic Ocean during the swimming season of May through September. The State tends to concentrate their efforts at bay beaches that have known bacteria problems. The Chapter is providing year round water quality information at four ocean beaches important to surfers.

The chapter did a great job during their first year running this program to raise awareness amongst their membership and the larger beach community on the importance of beach water testing programs and the potential risks to public health from exposure to polluted water. They used their Facebook social media site for better program engagement by announcing their sampling events and sharing their results online. They also posted health advisories on Facebook when they were issued by the Department of Health and let their followers know when the advisories were taken down and it was safe to get back in the water.

During their 2015 planning meeting, the Virginia Beach Chapter renewed its commitment to the BWTF by dedicating the resources necessary to continue the program. The Chapter also plans to expand the program to additional area beaches once a funding commitment is realized later this year.











Thank You For Your Support.