



CLEAN WATER

ANNUAL REPORT 2015



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Clean Water Initiative

The Surfrider Foundation was founded in 1984 by a handful of visionary surfers in Malibu, California, who were tired of getting sick from surfing in polluted water. Since then, improving coastal water quality has remained one of our top priorities.

Surfrider's [Clean Water Initiative](#) strives to reduce ocean pollution so it is safe to surf, swim and play in the ocean. To meet this goal, 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.



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The Threats

Water quality at the beach is threatened by pollution from urban and agricultural runoff, sewage spills and overflows, and waste discharged into the ocean by industry, sewage treatment plants and power plants.

The urbanization of our coasts has also altered and polluted the natural water cycle. Rooftops, pavement and other impervious surfaces in urban and residential areas not only prevent rain from soaking into the ground but also direct polluted runoff straight towards the ocean. At the same time, we are wasting valuable freshwater by using it once, mixing it with our 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.](#)



Surfrider's Approach

Everyone should have access to clean water to surf, swim and play in. The Surfrider Foundation is taking a multi-tiered approach to tackle ocean pollution problems. We are testing the waters for bacteria and toxins, raising public awareness and providing integrated solutions to ocean pollution, solutions that restore healthy watersheds, protect local water supplies and keep pollution from reaching the ocean.

Through a large network of volunteer chapters, the Surfrider Foundation is educating communities on how we can all work together to protect clean water. We advocate for strong laws and adequate funding to monitor and protect water quality, and we offer alternatives to development and energy projects that will cause pollution.

One of our priority campaigns for 2016 is to ensure continued funding for the BEACH Act, which provides federal grants to coastal states to run their beach water quality monitoring and public health protection programs. Without this federal assistance, we will have less information available to determine where it is safe to go into the water, and in some states beach water testing programs could stop completely. [You can join us in asking Congress](#) to continue to support healthy beaches.

OUR PROGRAMS



Blue Water Task Force

The Blue Water Task Force (BWTF) is Surfrider's volunteer-run, water testing, education and advocacy program which provides valuable water quality information to beach communities, identifies problems with beach and coastal water pollution, and works in local communities to raise awareness of pollution problems and implement solutions. Over the past 20 years, the BWTF has grown into a network of over 30 labs that are providing you with the information you need to know if a day at the beach will make you sick.

surfrider.org/blue-water-task-force



Ocean Friendly Gardens

Our volunteers help local communities create Ocean Friendly Gardens (OFGs), that conserve water and wildlife habitat with native plants, restore soil to sponge up rainwater and filter out pollution and ultimately reduce the amount of polluted runoff reaching the ocean. Through this program we are also educating landscape professionals and advocating for positive change to government policy. By planting Ocean Friendly Gardens across the country, our extensive chapter network has prevented more than 13 million gallons of urban runoff from polluting our coastal waters and the ocean.

surfrider.org/programs/ocean-friendly-gardens

This annual report tracks the progress of our BWTF and OFG programs during the calendar year of 2015 and presents case studies of how Surfrider Chapters are using these programs to protect public health, identify water quality concerns and bring together local communities to find and implement solutions.



BLUE WATER TASK FORCE

Since the inception of the Blue Water Task Force program over 20 years ago, Surfrider volunteers have been out in their communities testing the water quality at the beach. Our chapter-run, BWTF labs measure bacteria levels at ocean and bay beaches and in freshwater sources, and compare them to the national water quality standards meant to protect public health in recreational water. All water quality data is posted on [Surfrider's BWTF webpage](#) and shared via social media, email and community presentations.

Most chapter water testing programs are designed to fill in the gaps and to extend the coverage of state and local agency beach programs. Our chapters are testing beaches that are not covered by the agencies, and we are monitoring potential sources of pollution such as stormwater outlets and rivers and creeks that discharge onto the beach.

The BWTF is in operation year-round, providing public health protection through the off season, when lifeguards leave the beach and health officials stop collecting water samples, but surfers continue to surf and be exposed to potentially polluted water. When our BWTF results demonstrate real water quality concerns,

our chapters use their data to build community awareness and to motivate local governments and stakeholders to take action to identify and fix the sources of ocean pollution.

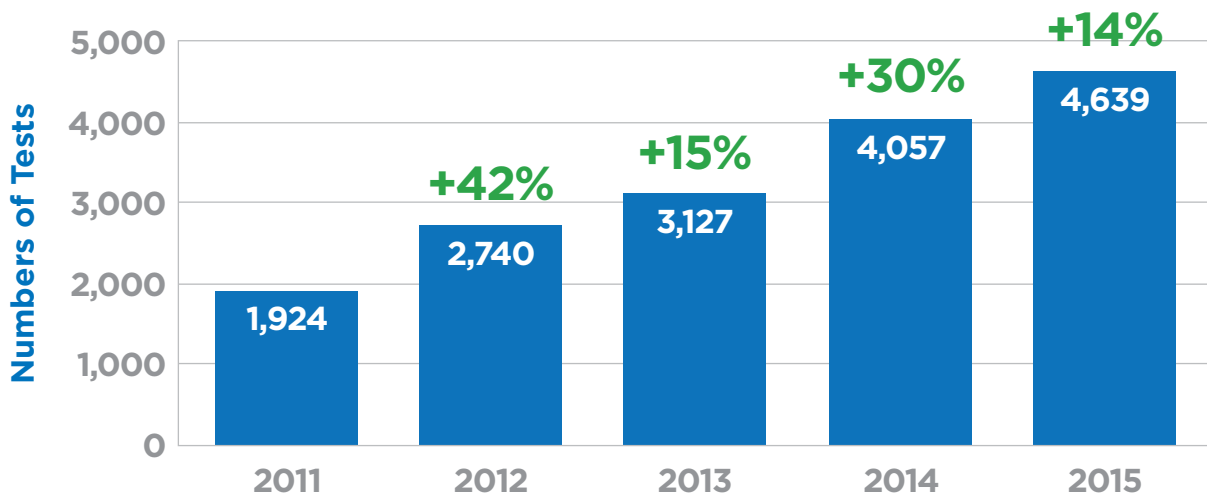


2015 PROGRAM ACTIVITY & RESULTS

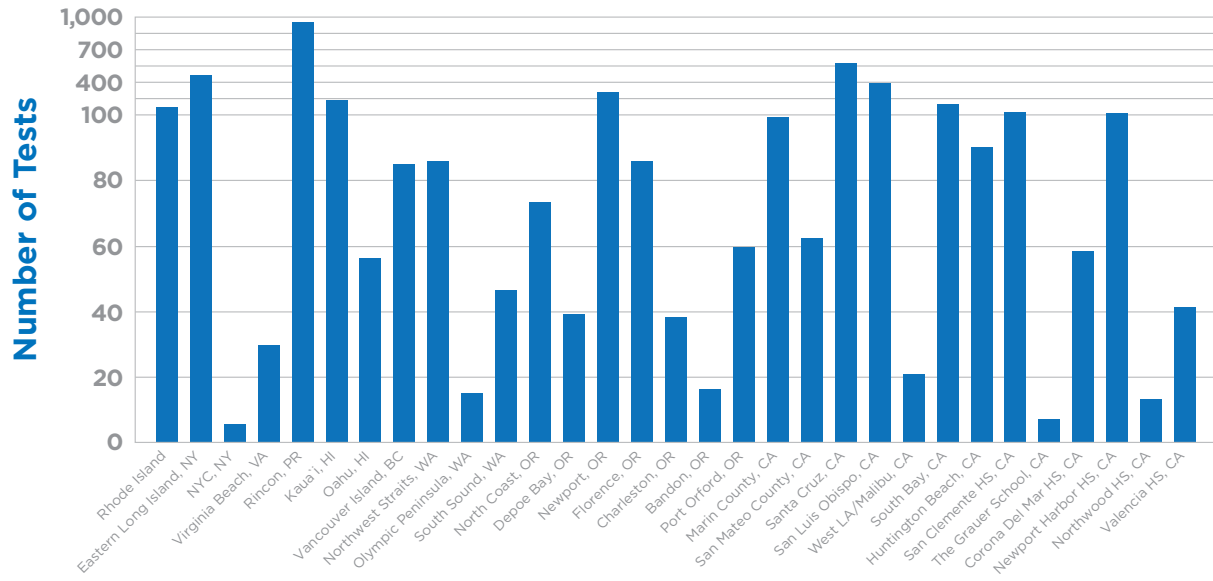


Annual Growth in Water Testing: 2011-2015

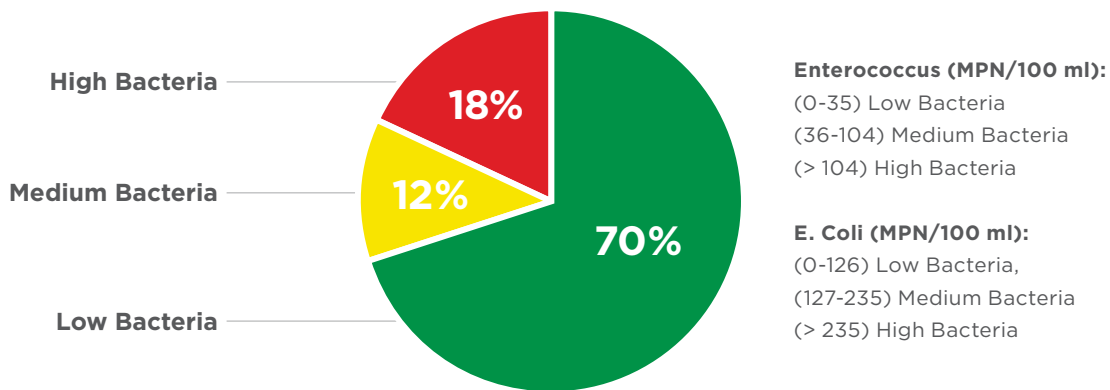
During 2015, we saw continued growth of this successful chapter-run program. There were 31 BWTF labs that processed 4,639 water samples collected from 317 distinct sampling sites.



Water Samples Collected by the BWTF in 2015 (4,639 total)



Bacteria Levels Measured by the BWTF in 2015



We welcomed four new labs into the program: Oahu, HI; Olympic Peninsula, WA; North Coast, OR; and The Grauer School, CA. The Rincón Chapter in Puerto Rico put out a massive volunteer effort last year running nearly 1000 water tests with approximately 120 chapter, community, and student volunteers participating in their program during the calendar year. The Rincón BWTF reached hundreds more with their weekly water quality reports and through presentations given at local schools, universities and scientific conferences.

The collective results from all the participating BWTF labs have remained relatively constant since we began compiling an annual report in 2011. Of the 4,639 water test results reported in 2015, 70% indicated low bacteria levels, 12%

indicated medium bacteria levels, and 18% measured high bacteria levels that exceed the national water quality standards set by the EPA to protect public health in recreational waters.

The majority of the water samples that failed to meet health standards were collected 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. Keep reading to learn how Surfrider chapters are using their Ocean Friendly Gardens program to address this source of pollution in their local communities.



OCEAN FRIENDLY GARDENS

Building healthy soils and reviving the natural water cycle by applying CPR.

Surfrider's Ocean Friendly Gardens Program offers simple and natural solutions to the water quality problems created by [stormwater](#) and [urban runoff](#). By applying [CPR \(Conservation, Permeability and Retention\)](#) to our landscapes and hardscapes, we can restore the natural water cycle and other beneficial functions of watersheds to protect local water supplies and prevent pollution from reaching the ocean. These same solutions also reduce flooding and sequester carbon.

The OFG method takes a watershed approach, considering every site as a mini-watershed to apply CPR.

- **Conservation** of water, energy and wildlife habitat by using climate-appropriate plants, ideally native plants.
- **Permeability** through healthy, living soil and hard surfaces directed to soil to filter pollution and let water soak in.
- **Retention** of rainwater as the first source of irrigation, to recharge groundwater and support stream flows, and to reduce flooding and erosion of streams and creeks.





Before



After

Creating healthy, living soil is the foundation of CPR. Soil organisms such as worms create spaces for water to gather, and they incorporate organic matter like leaves into the soil. Microorganisms further decompose it into plant available food, while also filtering pollutants. A fungus that forms a symbiotic relationship with almost all woody plants attaches to the roots and acts like a “soil internet” to bring that water and food to plants (some plants also pull nitrogen from the air). This carbon remains locked up in the soil unless

it is disturbed for development, agricultural, or other purposes.

In addition to changing landscapes, OFG is also applied to parking strips, streets and parking lots. Permeable pavement and curb cuts can let rain water flow into vegetated areas rather than into storm drains and into local waterways. Surfrider promotes changing municipal codes to make it easy and inexpensive to create curb cuts and green streets.

PROGRAM COMPONENTS

Each Surfrider chapter designs and implements their OFG program to best utilize their available resources and meet local needs. There are online resources available to explain the various program components such as the [OFG Activist Toolkit](#).



Talks

Chapter volunteers present to community groups and schools on the impacts of traditional landscaping and the benefits of OFG. Chapters have also contracted with landscape professionals to teach classes that provide greater detail and instruction. In addition, chapters partner with other like-minded non-profits and government agencies for community outreach and to teach classes.



Walks

Lawn Patrol, taking its name from dawn patrol, or the early-morning check of waves, is a neighborhood walk. Participants start at an existing OFG and review the principles and practices implemented, then walk the neighborhood to assess additional properties, identifying both successful and problematic landscape features. Educational flyers can be left at conventionally landscaped properties to offer suggestions for making the yard more Ocean Friendly.



Workdays

Chapters hold Garden Assistance Parties (GAPs) to create examples of OFGs and spark change in neighborhoods. The workday host agrees to: create a design that applies CPR; gather all materials ahead of time; ask neighbors and friends to join; provide lunch; and pay it forward. Because Chapters are made up of volunteers, they typically limit the size of the area to around 500 square feet. A [map of OFG locations](#) is posted online.

Additionally, GAPs offer a training opportunity for landscape professionals to incorporate OFG principles into their business practices. Water agencies have co-sponsored these workdays because they are a great venue for the agencies to offer education, training and to develop a model for their landscape retrofit rebate programs. Such partnerships have also begun the conversation about funding workforce training programs to scale up change.



Policy Change

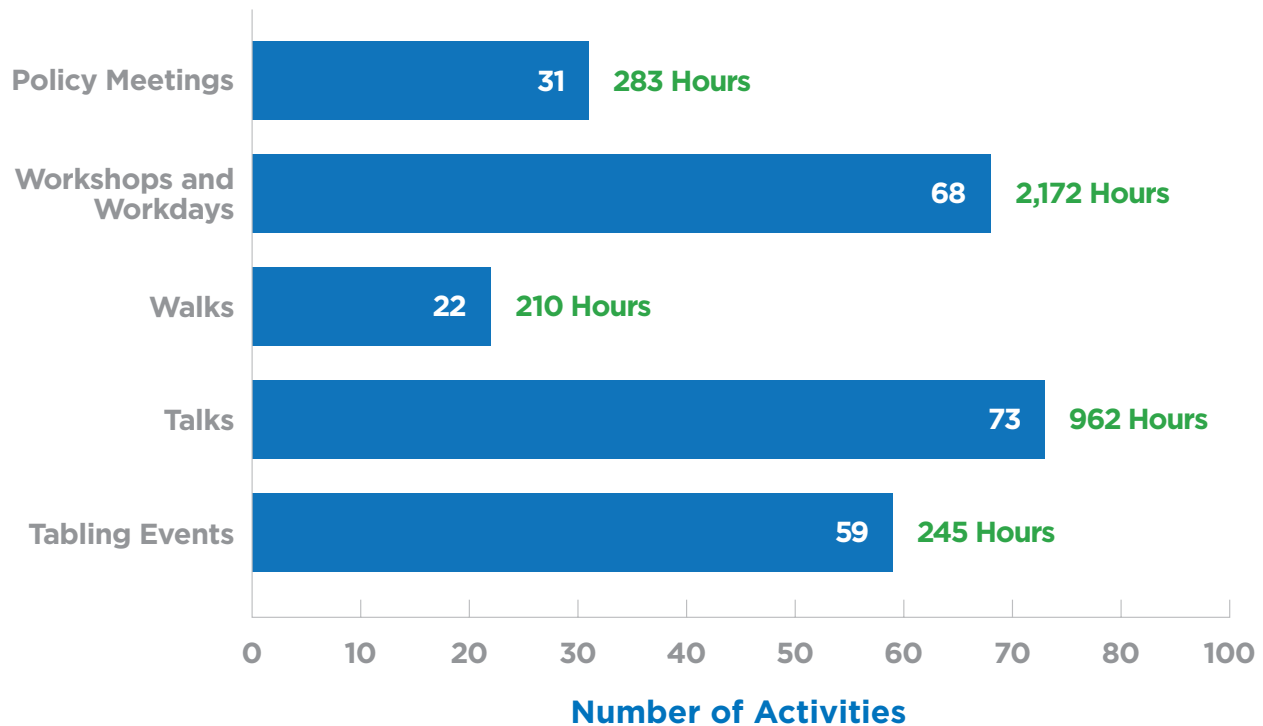
Chapter activists are also advocating for local policies to promote or require CPR and the watershed approach. Chapters are working with water supply and water quality agencies that offer landscape rebates programs to require CPR as a condition of the rebate. More fundamentally, by bringing different water and landscape-related agencies together—water supply, water quality, flood control agencies and others—we have begun the conversation on how we can all work together to restore the beneficial functions of the natural water cycle on a watershed scale. Surfrider has worked

hard to convince agencies of the value of incorporating the watershed approach into their programs and policies, and we are beginning to see the watershed approach incorporated into municipal programs and proposed statewide legislation in states like California.

2015 PROGRAM ACTIVITY & RESULTS

During 2015, Surfrider chapters and activists held 253 events, and clocked nearly 4,000 volunteer hours to educate the public on the problems created by urban runoff and traditional landscaping practices and to instruct and explain the value of applying CPR to our yards with Ocean Friendly Gardens.

253 Activities Over 3,872 Volunteer Hours



3,872 volunteer hours x \$22 per hour*
\$85,184 of value

*Hourly wage according to www.independentsector.org

CASE STUDIES

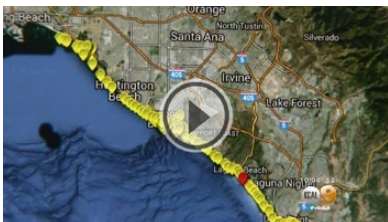
The following case studies describe how four chapters are implementing their clean water programs to raise awareness about water pollution issues in their communities and to advocate for solutions.

Huntington Beach, California

Detecting problems and offering solutions for clean water



The Huntington Beach/Seal Beach Surfrider Chapter has really made a splash with its Clean Water programs this past year. First, the 5th grade students who run the chapter's [Blue Water Task Force lab](#) at Pegasus school recorded high bacteria levels at their Brookhurst Street sampling site in Huntington Beach State Park following heavy El Niño rains this winter. CBS Los Angeles picked up [the students' story](#), providing great media exposure for the joint water testing program and the dangers of surfing and swimming in ocean water polluted by stormwater runoff.



[See the video coverage by CBS Los Angeles on the high bacteria levels after heavy El Niño rains.](#)

Chapter leaders Jeff Coffman (Vice-Chair) and Greg Goran's (OFG Coordinator) persistence also finally paid off after months of outreach and communication with the Southern California Edison (SCE). SCE agreed to transform their power substation in Huntington Beach to meet Ocean Friendly Garden criteria. Previously, the site was comprised of 36,000 square feet of turf grass that used 2 million-plus gallons per year of drinking water for irrigation and created runoff. A combination of contouring the property to drain water to low spots, creating healthy, living soil to sponge up the water, and using climate appropriate plants (local natives) will allow the garden at maturity to rely on rainwater for irrigation. This will reduce runoff by 90%, decrease flooding and create wildlife habitat. A drip irrigation system was installed to help get the plants established, which in and of itself reduced water use by 65%.

Jeff, who is also a volunteer member of the City of Huntington Beach's Environmental Board, and Greg, brought the OFG concept to the sub-station staff initially and provided support and expertise as the project was implemented. In addition, Jeff's company, [Clean Green Technology](#), was hired by SCE to install a [filter](#) and plants in the bio-swales to help further remove metals, hydrocarbons and other pollutants.

This OFG project was designed by the company [Site Design Studio](#). A great, interpretive sign was installed at the site that highlights the project's 'biophilic design' that supports the instinctive bond between people and nature by mimicking and revealing natural systems in the landscape. Overall it was a banner year for this chapter. Check out what they are up to this year on their [chapter website](#).



Virginia Beach, Virginia

Inspiring conservation and creativity in school communities



After spending the last two years getting their [BWTF water testing program](#) up and running, the [Virginia Beach Chapter](#) decided to launch their Ocean Friendly Gardens Program with a garden project at Seatack Elementary School. The chapter formed an OFG committee, including two members of the executive committee and a chapter volunteer who is a horticulturist at the Norfolk Botanical Garden and was able to provide guidance on plant selection and garden design. The committee also found a local teacher who was willing to champion the installation of an OFG at Seatack Elementary School.

The school site offered great visibility for the garden, plus it had serious existing drainage issues that needed correction. Construction of the garden took about five hours, with 35 kids and 20 adults participating, including students, parents, teachers and chapter volunteers. Signs were created and posted in the garden to educate the community, and a second rain barrel

was installed and painted by fifth graders to illustrate how CPR can help protect the ocean.

The new garden has become a central point for the school and has been integrated into the curriculum to educate students on watersheds, rain barrels, conservation, and the ocean. Fifth grader Anjel Calderon stepped up as a true leader of this school project. He worked in the garden during the summer, weekends, during special team projects and during the morning Garden Breakfast Club. The Seatack Elementary School OFG also made the front page of the local newspaper, [The Virginian-Pilot](#). Gifted Resources Teacher, Marie Culver, states: “An ocean-friendly garden is a really cool thing because it can help our waterways.”



Anjel tells the story of how working in the Ocean Friendly Garden gave him the confidence to become a leader in his school.



A former school librarian that returned to Seatack Elementary to help plant the garden remarked, “It was bushes before; it was very overgrown. Now it’s an amazing ocean garden.”

The Seatack Elementary School OFG also inspired the creation of an ocean-themed sculpture, Ocean Dance, by local artist Debra Chako. Funded by a sustainability grant, the artist incorporated local fish made by 5th graders into her design. A large assembly was held to dedicate the sculpture with the entire student body, teachers past and present, community leaders and members of the Virginia Beach Chapter and First Colonial High School Surfrider Club in attendance. The chapter was presented with a plaque honoring the partnership between Surfrider and the school.

After the installation of this successful garden, OFG volunteer and horticulturist Alexandra Cantwell has continued to promote the principles of CPR through short talks at garden center expos and [classes at Norfolk Botanical Garden](#), making the connections between how homeowners treat their yard and the health of the Chesapeake Bay. Ocean Friendly Gardens are also sprouting up at other local schools, with two additional gardens already installed and another one being planned for Fairfield Elementary School by a local student for his senior project.

Newport, Oregon

A decade-long collaboration of citizen science, government and youth to protect clean water and healthy beaches



The [Surfrider Chapter in Newport, Oregon](#) started out as a volunteer water monitoring program 15 years ago and has since grown into an effective and well-respected voice in their community for positive change. The Newport Chapter is providing credible data and information to state and local agencies, elected officials and other stakeholders to solve water quality problems and to protect healthy beaches.

The [BWTF lab in Newport, Oregon](#) is located at the Oregon Coast Aquarium. Surfrider volunteers collect water samples from local beaches and upstream waterways, and a dedicated group of youth volunteers process the samples at the aquarium and enter the results online.

Back in 2005, the chapter first approached the City of Newport with their concerns of a potential health risk at the beach. Their water quality data was showing consistently high bacteria counts at Nye Beach and in Nye Creek. The city responded by posting warning signs at the creek, and the Oregon State Beach Monitoring Program started sampling Nye Beach and the Nye Creek outfall for the first time. Chapter volunteers continued to show up at City Council meetings asking the city to investigate the cause of the pollution. But

nothing really happened until the aquarium youth volunteers, under the guidance and mentorship of the chapter, made a similar presentation in 2007 asking the city to find and fix the source of pollution into Nye Creek. The kids were harder to say no to, and the city conducted smoke and dye testing in their storm drains and discovered several mis-connections. Seven properties were discharging directly to the stormwater system instead of the city sewer, and these were immediately fixed.

Although, water quality improvements were soon realized in the creek, the chapter continued to work with the youth volunteers and the city to address the impacts of both stormwater runoff and aging infrastructure throughout Newport. This included a multi-year effort to map the City's sewer and stormwater infrastructure and successfully advocating for revisions to the municipal code to mandate best management practices for sewer, stormwater and other non-point source pollution controls. In 2013, the city established a new stormwater utility and an opt-out incentive program for residents and businesses that disconnect from the system and instead install green infrastructure to prevent rainwater from leaving their property. [Learn more](#) about the chapter's early successes in affecting positive change in their community.



To further address stormwater, the chapter installed an Ocean Friendly Garden at Newport City Hall.



This video does a great job of documenting the installation, function and maturation of this OFG.

While Newport has enjoyed good water quality at their beaches in recent years, the State Beach Program detected a very high spike in bacteria in Nye Creek during the fall of 2015. The state called on Surfrider to confirm their test and once verified, the city asked the chapter to conduct further testing to help them figure out where the pollution was coming from. To answer this call for help, the chapter partnered with the aquarium, and with funding from the Oregon Community Foundation, developed an internship program for a local high school student to perform strategic sampling throughout Newport’s stormwater system to hone in on the problem areas. Leland Wood, who already had several years experience working in the BWTF lab at the aquarium, was selected as Newport’s first [Blue Water Scholar](#), and he worked alongside city engineers, Surfrider volunteers and aquarium staff throughout the winter to perform the testing.

While the partners have yet to find the major source of bacteria for recent pollution events, this collaboration has provided a lot of valuable information that has been able to eliminate certain areas of Newport’s stormwater and sewer infrastructure and prioritize others for further investigation. [Read more about Blue Water Scholar program.](#)

And so the journey continues, but thus far the Newport BWTF program tells an amazing story of transformation as a city is made aware of a new pollution problem, is convinced of the necessity of finding and fixing the sources of pollution, and after a decade of collaboration, begins turning to the chapter to ask for assistance in finding and fixing the sources of pollution when new issues arise.

Kaua'i, Hawaii

Citizen science and advocacy applied to protect public health and clean water at the beach



The [Kaua'i Chapter](#) began its BWTF water testing program seven years ago with the intent of providing more information to the community on where it is safe to swim and surf. The Hawaii Department of Health (HDOH) monitors water quality at life-guarded beaches on Kaua'i, and the chapter tests 27 surf breaks, estuaries, and popular freshwater recreational sites. The Kaua'i BWTF makes their data publicly [available online](#) and emails their monthly results to chapter volunteers and HDOH and EPA staff. They also publish an annual water quality report in their [local paper](#), and the chapter's BWTF coordinator, Dr. Carl Berg, gives frequent talks in the community to build public awareness of local water quality issues. Dr. Berg also mentors Kaua'i Community College student internships and projects and helps local high school students with their science fair projects.

Because the chapter's water quality data has shown overwhelming evidence of chronically high bacteria levels at the mouths of several island streams, the chapter has been asking HDOH to post warning signs at these beaches for several years now. Families with children prefer the warm, calm waters of these streams as they flow across the beach, but they have no idea how polluted the water is in these increasingly dangerous recreational waters.

A few years ago, the chapter was successful in getting a sign posted at the mouth of the Hanalei River and worked in cooperation with the HDOH to identify and fix failing cesspools in the watershed. Unfortunately, HDOH has not been willing to post any further signs at any other beaches on Kaua'i, even when bacteria levels nearly always exceed the state water quality standard of 130 cfu enterococcus.



In 2015, the streams at seven of the beaches the chapter tests failed to meet the state bacteria standard over 90% of the time they were tested. Four of those streams failed health standards every single time. The most egregious site is the Waiopili Stream that exceeded health standards 100% of the time, with an average bacteria level in 2015 that exceeded 10,000 cfu enterococcus, up from an average count of 9,000 measured in 2014. That is 77 times greater than the health

standard! Alarming, the chapter frequently sees children playing in the same exact spot that they sample, with their parents completely unaware of the health risk.

Because the public health situation at the beach in Kaua'i has become so dire this past year and HDOH has not been willing to work with the chapter to protect public health and to find and fix the sources of pollution, the chapter's campaign grew into a state and national campaign in 2015. The [Oahu Chapter](#) re-established their BWTF water testing program to determine if they have similar sites on Oahu where surfers and swimmers might unknowingly be exposed to dangerous levels of pollution. Surfrider began promoting our [Ocean Illness Form](#) across the state to gather information on any illnesses contracted in the ocean or upstream waters popular with paddlers.

Surfrider also issued an action alert nationwide to allow state residents and visitors alike to make their request to HDOH to post signs at the beach when bacteria levels are high. A close review of HDOH posting practices revealed that not only is the state ignoring the citizen-generated data on Kaua'i, but they also don't post signs at the beach when their own water quality data fails to meet health standards, unless there is a known human source such as a sewage spill. [Learn more](#) about this campaign or [participate in the action alert](#).

Thus far, Surfrider's efforts have not resulted in any improvement in the state's public notification procedures. However, a flurry of media attention generated by our campaign motivated the state to finally release a sanitary survey performed on the Waiopili Stream nearly two years ago. Unfortunately, HDOH has used this document to try to justify their position not to post signs at the beach rather than making a conscientious effort to identify the real sources of pollution. HDOH falsely concluded that the stream is not used recreationally and that there are no direct human sources discharging into the stream. This is despite evidence in their own report that shows the presence of

human genetic markers in the stream and at the receiving Gillin's Beach, and thousands of wastewater injection wells and cesspools and a sewage sludge application site in the adjacent area that was in use for 11 years until the state permit was pulled in 2014. Read Surfrider's assessment of HDOH's sanitary survey [here](#) and media coverage of this issue [here](#).

The Kaua'i Chapter has since released its own [user study](#) of one of the contaminated streams on the island that was performed by a community college student this past winter. During the study period an average of 6.7 people were observed every hour in the mouth of the [Nawiliwili Stream](#) where it discharges onto the popular Kalapaki Beach. During the same time period all [water test results](#) reported exceeded the state water quality standard demonstrating that there indeed is a public health concern.

Another community organization, Friends of Mahaulepu, has also gotten fed up with the State's inaction and has gone ahead and posted a sign at the mouth of the Waiopili Stream warning beachgoers of the contamination. The sign did not last long at the beach, but the Friends vowed in their [local newspaper](#) to continue their efforts until the state takes appropriate action themselves to protect public health.

Since sound science and reason have not yet swayed HDOH to post warning signs, Surfrider has been doubling up on our efforts to build community awareness and communicating with EPA to make them aware of the egregious failure of HDOH to protect public health at the beach. If the water crisis in Flint, Michigan has taught us anything, it should be that the responsibility for protecting public health lies with us all—the community, state and local government, and the federal agencies responsible for enforcing environmental and public health standards.



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YOUR CONTINUED SUPPORT.

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