CLEAN WATER REPORT

2017

SURFRIDER FOUNDATION

CONTENTS

IN MEMORY OF PAUL HERZOG

BY MARA DIAS, WATER QUALITY MANAGER

Last year, Surfrider lost a great leader and friend with the passing of Paul Herzog. Paul was Surfrider's national Ocean Friendly Gardens Program Coordinator since the program's inception in 2009. He poured boundless energy, passion and knowledge into promoting Ocean Friendly Gardens as a way to revitalize our landscapes, watersheds and coastal waterways. Paul was a firm believer in the endless possibilities of applying CPR—Conservation, Permeability, and Retention—to build healthy soils, conserve and protect clean water, and even to tackle the effects of climate change. His light certainly shined bright, and that was apparent to everyone who had the pleasure of working alongside him. His earnest spirit and drive to solve our global environmental challenges will be sorely missed among Surfrider's network of dedicated staff and volunteers across the country who are working hard to make their communities more Ocean Friendly. Through these efforts, Paul's legacy lives on. This report is dedicated to Paul's memory and all the lessons he taught us about creating beautiful and healthy spaces to nurture our families, our souls and our environment.

CLEAN WATER INITIATIVE

The Surfrider Foundation was founded in 1984 by a handful of visionary surfers in Malibu, California, who were concerned about the environmental threats posed by escalating development and pollution at their favorite surf break. Since then, improving coastal water quality has remained one of Surfrider's top priorities.

Surfrider's Clean Water Initiative strives to protect water quality in local waterways and reduce 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 water pollution problems and advocating for solutions to protect public health and clean water.

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The Walrath Family

Kate W. Cassidy Foundation

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.

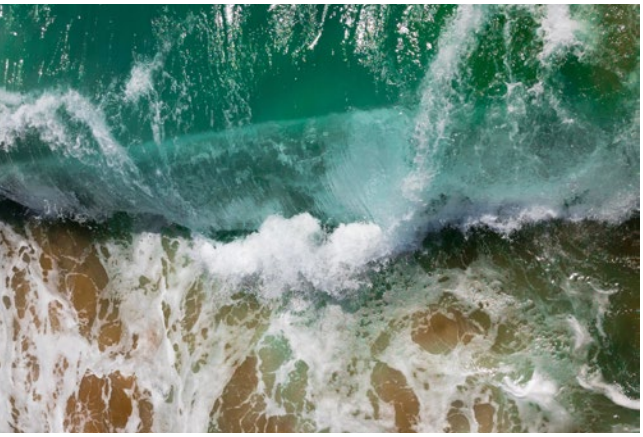
The urbanization of our coasts has also altered and polluted the natural water cycle. Rooftops, pavement and other impervious surfaces in urban and residential areas not only prevent rain from soaking into the ground but also direct polluted runoff straight towards the ocean. At the same time, we are wasting valuable fresh water 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 restore healthy watersheds, protect local water supplies and keep pollution from reaching the ocean.

Through a large network of volunteer-led 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.

The goal of one of our priority national campaigns is to protect public health and clean water through proper implementation of the Clean Water Act and to advocate for adequate funding for the Environmental Protection Agency (EPA). EPA programs and health safeguards are critical to ensuring that the water that flows down to the beach is clean and free from pollution and that beachgoers have the information they need to avoid getting sick at the beach. Unfortunately, the EPA has been targeted for massive budget cuts by the President's Budget for fiscal year 2019, and the administration has simultaneously taken multiple actions to roll back protections afforded under the Clean Water Act. You can join us in asking Congress to stand up for clean water!



OUR PROGRAMS

This annual Clean Water report tracks the progress of our Blue Water Task Force and Ocean Friendly Gardens programs during the calendar year of 2017 and presents case studies that show 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

The Blue Water Task Force (BWTF) is Surfrider's volunteer-run, water testing program. Operating through a national network of over 40 labs, BWTF citizen scientists are providing critical water quality information to protect public health and clean water.

surfrider.org/blue-water-task-force

Ocean Friendly Gardens

Ocean Friendly Gardens (OFG) is Surfrider's sustainable landscaping and education program that provides beautiful, natural solutions for water pollution problems caused by urban runoff. By planting native, climate-appropriate plants, building healthy soils, and carefully shaping landscapes to slow down and retain rainwater, Ocean Friendly Gardens are transforming landscapes and hardscapes to reduce urban runoff, filter out pollutants, and conserve water and wildlife habitat.

surfrider.org/programs/ocean-friendly-gardens

BLUE WATER TASK FORCE

Since the inception of the Blue Water Task Force program nearly 25 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 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, rivers and creeks that discharge onto the beach.

The BWTF is in operation year-round, providing public health protection through the offseason 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.

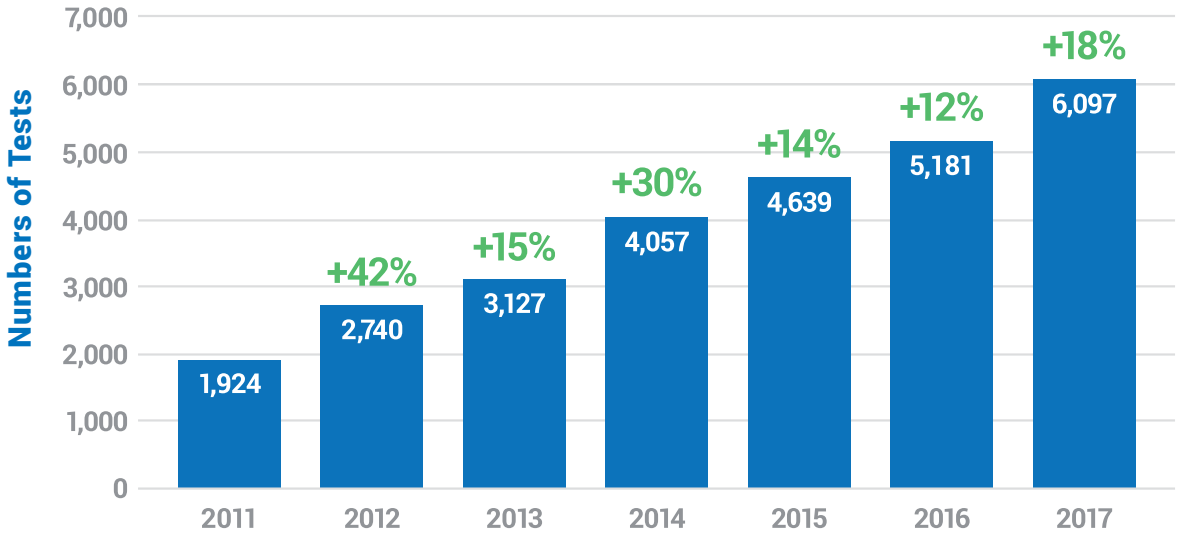
Two such BWTF chapter campaigns realized great success in 2017. In Washington, the Northwest Straits Chapter was able to celebrate the removal of what was considered a permanent advisory sign at Wild Cat Cove in Larrabee State Park last summer because of improved water quality conditions. For over a decade, the chapter worked hard to bring together local stakeholders to investigate the sources of bacterial pollution at this beach and to implement solutions throughout the watershed, including fixing some failing septic systems, fencing raccoons out of the stream, and launching a massive public education program in the campground. In turn, water quality has improved and now area residents and visitors are able to enjoy this beautiful recreation spot once again.

In Oregon, volunteers with the North Coast BWTF have worked with local partners to build community awareness of high bacteria levels in the outflow of stormwater that discharges from the Ecola Court outfall on Cannon Beach. Unfortunately, this stream of calm, fresh water attracts children playing at the beach, whose parents may be unaware of the potential health risk. Armed with citizen-generated data, Surfrider was successful in convincing the City of Cannon Beach to identify several problems in its sewage and stormwater infrastructure that will be fixed to improve local water quality conditions. Read more about this victory for clean water in the North Coast, Oregon case study at the end of this report.

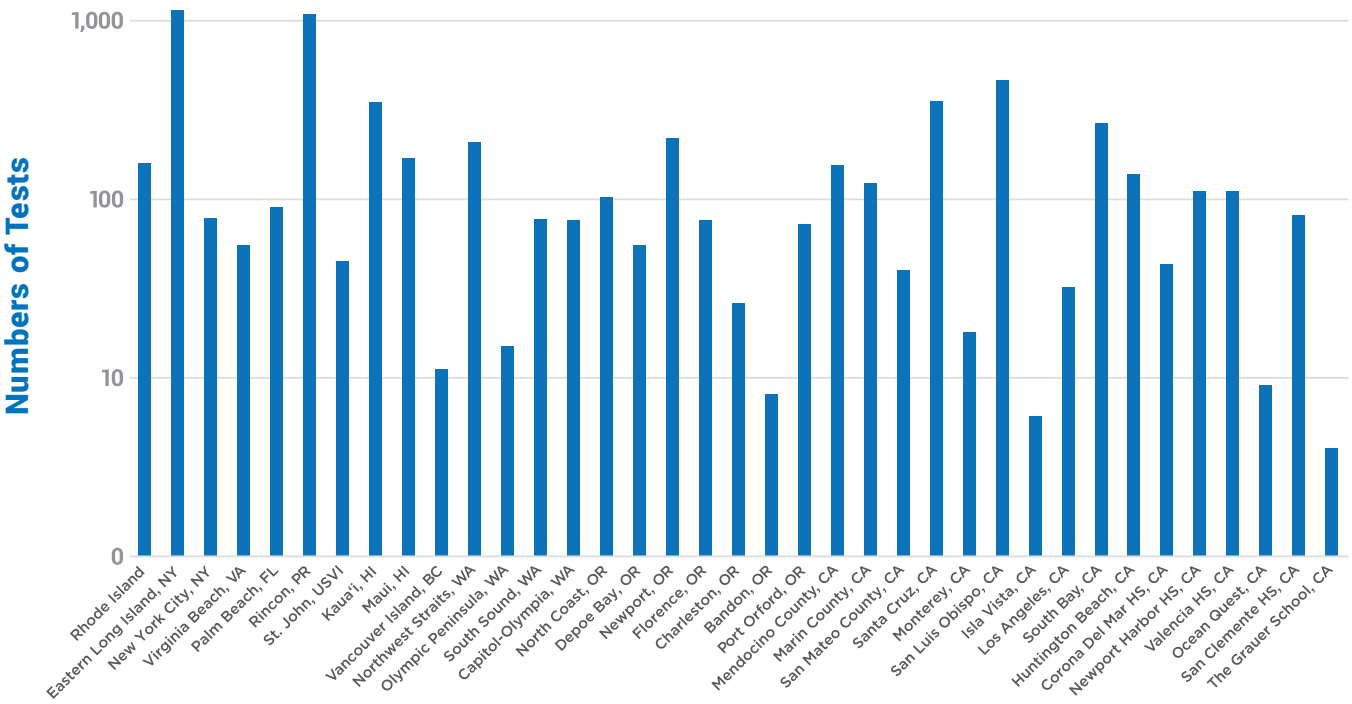
2017 PROGRAM ACTIVITY & RESULTS

Annual Growth in Water Testing: 2011-2017

During 2017, we saw continued growth of this successful chapter-run program. There were 40 BWTF labs that processed 6,097 water samples collected from 446 distinct sampling sites.



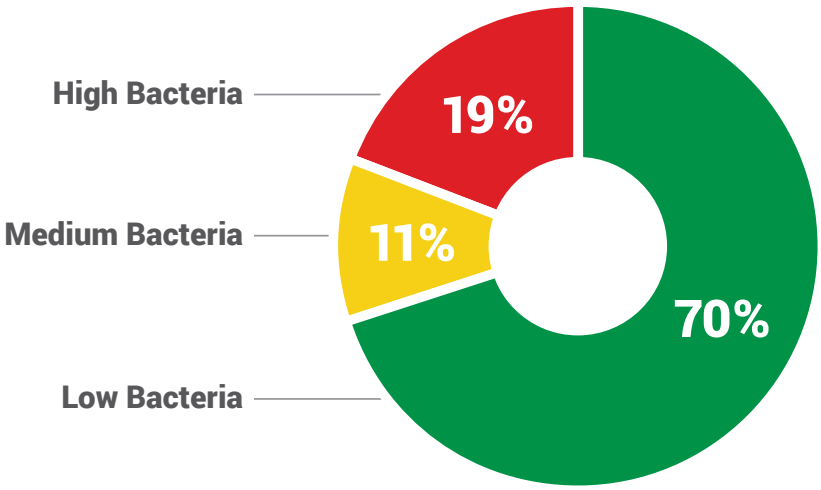
Water Tests Performed by the BWTF in 2017 (6,097 total)



In 2017, Surfrider's BWTF efforts increased across the nation. The Maui Chapter in Hawai'i and the Monterey Chapter in California both initiated new BWTF programs. The New York City and Isla Vista chapters relaunched their programs after a temporary hiatus in testing during 2016. In addition, the Mendocino Chapter started uploading water quality data onto Surfrider's website after several years of testing in collaboration with the Mendocino County Health Department.

Following the devastation that Hurricanes Irma and Maria brought to the Caribbean region, a new BWTF program was established in St. John in the U.S. Virgin Islands during the fall of 2017. The Rincón Chapter also expanded their BWTF program in Puerto Rico to meet community concerns of polluted fresh water. A case study on how the BWTF program responded to these hurricanes is available at the end of this report.

Bacteria Levels Measured by the BWTF in 2017

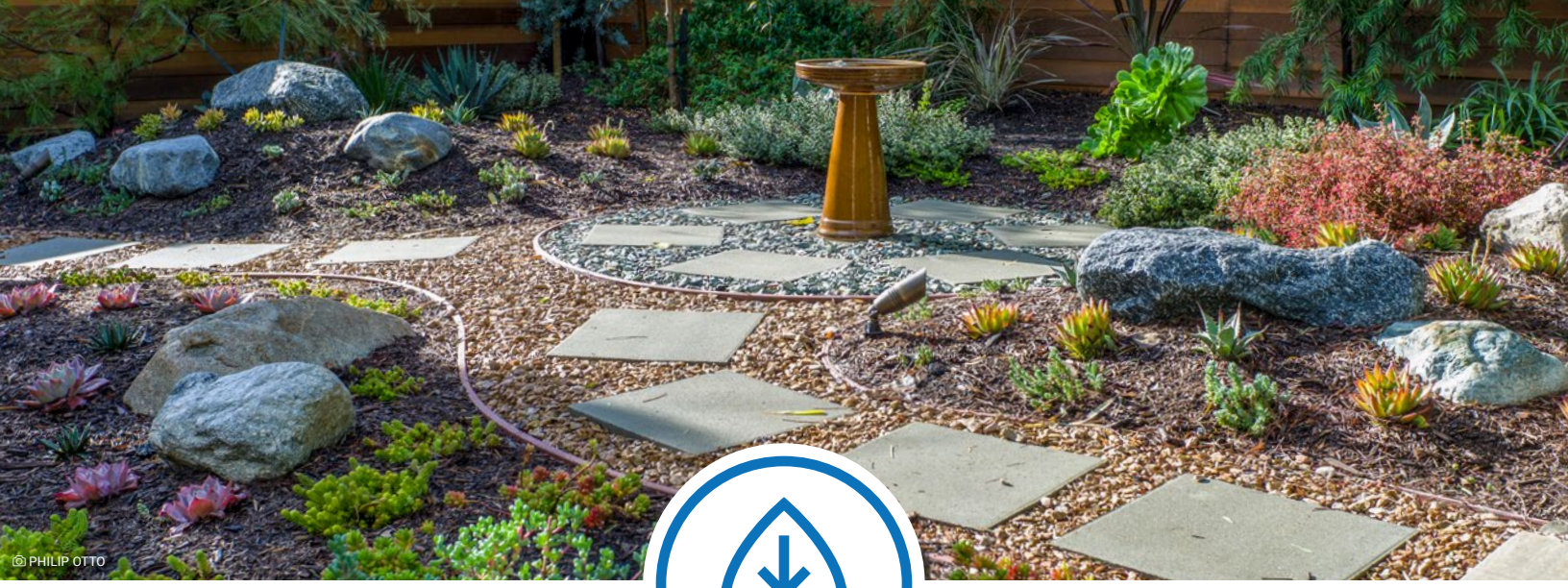


Enterococcus (MPN/100 ml):
(0-35) Low Bacteria
(36-104) Medium Bacteria
(> 104) High Bacteria

E. Coli (MPN/100 ml):
(0-126) Low Bacteria
(127-235) Medium Bacteria
(> 235) High Bacteria

The collective results from all the participating BWTF labs have remained relatively constant since we began compiling an annual report in 2011. Of the 6,097 water test results reported in 2017, 70% indicated low bacteria levels, 11% indicated medium bacteria levels, and 19% measured high bacteria levels that exceed the national water quality standard 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

Applying CPR to Revive Healthy Watersheds and Protect Clean Water

Surfrider's Ocean Friendly Gardens program offers simple and beautiful 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 native or climate-appropriate plants.

Permeability through healthy, living soil to filter pollution and let water soak in.

Retention of rainwater as the first source of irrigation to reduce flooding, recharge groundwater and support local stream flows.

A Surfrider volunteer cutting a curb to allow water from the street to flow into a newly constructed Ocean Friendly Garden.

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). Plants also take carbon from carbon dioxide in the air (known as photosynthesis) and use the carbon to feed its development and secrete what they do not use into the soil. This carbon remains locked up in the soil unless it is disturbed for development, agriculture, or other purposes.

In addition to changing landscapes, the OFG method is also applied to parking strips, streets and parking lots. Permeable pavement and curb cuts can let rainwater flow into vegetated areas rather than into storm drains and local waterways.

PROGRAM COMPONENTS

Each Surfrider chapter designs and implements their OFG program to best use their available resources and meet local needs. There are online sources available to explain the various program components such as the OFG Activist Toolkit.

Talks and Tabling

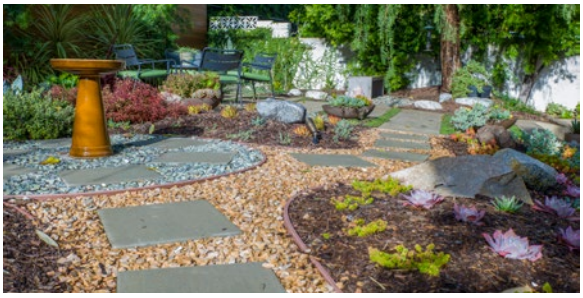
Chapter volunteers present to community groups and schools on the impacts of traditional landscaping and the benefits of OFG. Chapters have also contracted with landscape professionals to teach classes that provide greater detail and instruction. In addition, chapters partner with other like-minded nonprofits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

Neighborhood Walks

During Lawn Patrol neighborhood walks, participants start at an existing OFG to review the principles and practices implemented, and then walk the neighborhood to assess additional properties and identify 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. Workdays are also a great training opportunity for do-it-yourselfers and landscape professionals to incorporate OFG principles into their business practices. A map of OFG locations is posted online.



Policy Change

Chapter activists advocate for local policies to promote or require CPR and the watershed approach on both existing and new development. As a result of Surfrider's advocacy, multiple agencies that deal with landscapes (water supply, water quality, flood control, etc.) have also changed the way they operate to implement a more holistic approach towards water management.

2017 PROGRAM ACTIVITY

During 2017, 23 Surfrider chapters ran Ocean Friendly Gardens programs to educate the public about the problems created by urban runoff and traditional landscaping practices and to provide training on how to apply CPR to our landscapes and hardscapes using the watershed approach. Surfrider helped install 52 OFGs, transforming both public and residential spaces to become Ocean Friendly.

Here are some beautiful highlights from across Surfrider's chapter network.

A) Summer blooms of Hibiscus Palustris bring beauty to a functioning bioswale in the central village green of East Hampton, NY.
B) Native plants in full bloom bring beauty to City Hall in Newport, Oregon.
C) A monarch butterfly stops for a break at the Folly Beach Community OFG in South Carolina during its fall migration south.
D) Surfrider O'ahu joins forces with Permablitz Hawai'i to install OFGs that produce fruits and vegetables.
E) An OFG is sculpted with stone, mulch and native plants to create beauty and conserve water in Oceanside, CA.

CASE STUDY

MAUI, HAWAIʻI

Generating Data to Inform Safe Recreation and Protect Clean Water on Maui's North Shore

Last March, the Surfrider Foundation Maui Chapter volunteers performed their first sampling run to launch their new Blue Water Task Force (BWTF) water quality monitoring program. The chapter has also teamed up with Professor Donna Brown and her marine biology students at the University of Hawaiʻi Maui College to conduct monthly testing of 18 beaches and streams along the North Shore of Maui. The science students are gaining valuable, real-world experience by participating in the BWTF program, and the chapter is benefiting from the professional oversight of Professor Brown and the use of her lab space.

The Maui Chapter chose its BWTF sampling sites to complement the beach monitoring program run by the Hawaiʻi Department of Health (HDOH), which provides weekly monitoring of 10-15 beaches islandwide. The chapter is testing beaches that are popular for ocean recreation, in addition to stream mouths that discharge onto the beach. While these discharges are potential sources of pollution, especially during Brown Water Advisories, the same areas are also used recreationally for wading and paddling.

Through the efforts of the BWTF programs on Kauaʻi and Oʻahu, Surfrider has formed a positive working relationship with HDOH in recent years. Surfrider's BWTF programs provide notice to HDOH of beaches and recreational waters that are showing signs of chronic pollution, and we have worked together to develop signage and outreach materials to inform the public of potential health risks of polluted waters. The new BWTF program in Maui builds on this collective success by providing citizen-generated water quality information to inform safe beachgoing and ocean recreation on Maui's North Shore. Read more about Surfrider's efforts to work together with the state to provide public health protection at Hawaiʻi's beaches here.

The Maui Chapter was also motivated to start their BWTF program because major changes in land use are expected as 36,000 acres of former sugarcane agricultural land are coming out of production in the watershed that leads down to the popular North Shore beaches. While the Maui Chapter successfully joined forces with the Protect Peʻahi Coalition in 2016 to preserve 267 acres of former sugar cane fields, the fate of tens of thousands of acres is still uncertain. The Maui Chapter wants to ensure that future management decisions for the former sugarcane land do not put the North Shore beaches or local water quality at risk. New potential uses being considered include residential and resort development, more conservation efforts and other

forms of agriculture, including organic gardening and cattle farming. To inform this decision making, the chapter's BWTF program is building a baseline record of water quality information to help the local community and elected officials make sustainable choices for the future of their North Shore community.

During the first year of testing, most of the Surfrider Maui Chapter's test results have demonstrated safe water quality conditions. However, one site where high bacteria levels have been problematic is Maliko Bay. The bay is a popular launching spot for downwind stand-up paddleboarding and for boats and jet skis going to the iconic surf spot, Pe'ahi (also known as Jaws). Many fisherman and divers favor this beach as well, as do families with children who play in the water near the launch site. When the chapter measured extremely high bacteria levels at Maliko Bay in December, the BWTF volunteers alerted the Department of Health. The state performed follow-up testing to confirm the chapter's results, and they worked together to ensure the site was posted with warning signs where recreational users would see them and be warned of the health risk.

Concerned about sustained high levels of bacteria at Maliko Bay this winter, the chapter is now supporting an internship for one their student volunteers, Amy Frate, to conduct a pollution source assessment study. Under the direction of her professor, Dr. Meagan Jones at University of Hawai'i Maui College, Amy will perform extensive testing within the Maliko Gulch watershed to identify bacteria hotspots. There are a number of potential sources of pollution in this watershed, including stormwater runoff, cesspools, a household dump site, a pig farm, and herds of feral goats and pigs.

Across the state, cesspools are one of the biggest contributors of pollution to ground and surface waters. Surfrider has supported recent legislation to ban new cesspools in Hawai'i and create incentives to replace them with better septic systems. However, additional community outreach and planning is needed before more solutions are in the ground. The Maui Chapter hopes that their watershed study will provide useful information to build community awareness of the pollution problem at Maliko Bay and also generate the political will to identify and fix the problems. The chapter is proud to be doing their part to help ensure that surfers, swimmers and paddlers have the information they need to safely spend time in the water at local beaches. With only one year out of the gate for this new program, the chapter's accomplishments are thus far impressive. Visit the BWTF website to view a map of Maui's sampling sites and all of their data.

A Surfrider volunteer collecting water samples for testing in Maliko Bay.

A sign warns of high bacteria levels at Maliko Bay.

CASE STUDY

NORTH COAST, OREGON

Solving Pollution Problems and Inspiring the Next Generation of Coastal Stewards

After a decade of water quality monitoring, the North Coast Blue Water Task Force (BWTF) in Oregon has developed into a powerful citizen science program that effectively works with community members, local schools, state programs and county institutions to solve problems and protect clean water.

The North Coast BWTF began sampling in 2008 to provide the community with water quality information along the North Coast of Oregon. The program, supported by the Surfrider Portland Chapter, is run by passionate volunteers who work closely with high school students to meet community concerns and needs.

Both the state's Beach Monitoring Program and Surfrider's BWTF data have identified one of the North Coast's sampling sites, Ecola Court at Cannon Beach, as one of the most polluted stormwater outfalls on Oregon beaches. Bacteria levels exceed the health advisory limits 50% of the time when this site is tested. The public health risk is also high as Ecola Court outfall pipe is near the primary beach access to Cannon Beach for locals and tourists. Children also splash and play in the shallow stream of stormwater that discharges onto the beach. On a busy day in the summer, the health of tens of thousands of beachgoers could be at risk from the polluted water that discharges from this stormwater outfall pipe.

Fortunately, after a decade of testing and advocacy, the North Coast BWTF and local leaders of the Ecola Watershed Council scored a victory for clean water and successfully convinced the city of Cannon Beach to perform a full analysis of its sewer and stormwater infrastructure to identify potential sources of pollution. As Surfrider activists had worked with the cities of Newport and Coos Bay on similar sewer and stormwater infrastructure testing, the BWTF emphasized that a similar process would help determine the culprit of high bacteria in Cannon Beach. Using smoke and dye testing techniques, the city of Cannon Beach uncovered several infrastructure failures, such as sewer misconnections, broken sewer lines and pump station failures that were contributing to the pollution on the beach. More importantly, the Cannon Beach City Council has since voted to approve funding for a major capital improvement project to start fixing the problems identified in the city's

sewer and stormwater systems. It was a long road, but thanks to the perseverance of Surfrider's North Coast BWTF volunteers and their local partners, Cannon Beach is well on its way to becoming a clean, healthy beach!

Beyond the success they've achieved in addressing the pollution problems at Cannon Beach, the North Coast BWTF program continues to evolve to meet community needs and concerns. Last year, the water testing lab was relocated from the State Park at Nehalem Bay to Seaside High School. The improved facilities not only provide a better learning atmosphere, but the space also helps to increase the students' engagement in the water quality monitoring program. Students are now able to collect samples from three additional coastal rivers, including the Necanicum, Neacoxie and Neawana. Since the lab was moved to the high school, approximately 95 students and 12 local citizen volunteers have been trained to collect and process water quality samples. View a map of all of the North Coast BWTF sampling sites and their results on the BWTF website.

One of the most incredible benefits resulting from the North Coast BWTF volunteers working alongside Seaside High School students is the ability to take a number of lifelong residents of Seaside to the beach and building a strong connection between the students, their local beaches and the ocean. As Surfrider's roots within the community deepen, the North Coast BWTF looks forward to continuing to work collaboratively to protect clean water and to inspire the next generation of coastal stewards.

Above: Seaside High School students collecting water samples and data.

CASE STUDY

WILMINGTON, NORTH CAROLINA

Engaging Youth to Tackle Stormwater Runoff with Ocean Friendly Gardens

Not only is polluted stormwater runoff one of the largest sources of water pollution in North Carolina, but it's also the top cause of swim advisories and beach closures nationwide. Ocean Friendly Gardens (OFG) can be a great solution to reduce local impacts of runoff, and both the Cape Fear Chapter and the nearby University of North Carolina Wilmington Surfrider Club have successfully applied their OFG programs to address the water quality problems caused by stormwater pollution.

In 2018, the Surfrider Foundation Cape Fear Chapter completed two OFG projects that engaged local youth and students in creating solutions for stormwater runoff. The chapter first rehabilitated an existing rain garden that captures runoff from a 20,000 square foot parking lot at Gregory Elementary, a Title I magnet school in Wilmington. With the help of local runoff capture experts, Rain Storm Solutions, the Gregory Elementary PTA, and a group of 20 volunteers, the garden was revived in just one day! This was achieved by removing the compacted soil and debris from the garden and creating a spillway with impermeable fabric and river rocks. The volunteers then mulched and pruned the existing trees and planted new native plants.

The Gregory Elementary OFG is now a beautiful example of how gardens can be maintained to capture and soak up rainwater and prevent stormwater runoff from occurring.

The Cape Fear Chapter and Rainstorm Solutions again teamed up to install a rainwater catchment system to provide irrigation and outside water for Dreams of Wilmington, a non-profit youth development center. The project was designed to capture the majority of runoff from the center's rooftop and included the installation of gutters, downspouts and two large 750 gallon cisterns connected to outside faucets. The resulting pressurized water that this system delivers is sufficient to meet all of the center's outdoor water needs, including irrigation of a large garden that provides fresh fruits and vegetables to the community. Read local media coverage of this great project and collaboration here: portcitydaily.com

Over on the UNC Wilmington campus, Surfrider student club leader Miles Abernathy galvanized an amazing crew of Surfrider volunteers, Eco Club members and UNC faculty from the Sustainability Committee to install a large Ocean Friendly Garden. This OFG captures runoff from a newly

renovated parking lot that added over half an acre of impervious surface to the campus. Runoff from the parking area is now directed into this new OFG, where it can soak into the ground instead of running straight into the already-impaired Bradley Creek that flows across campus. Check out this beautiful video documenting the installation of the garden on campus last spring.

This year, the UNC Wilmington Surfrider Club and the Cape Fear Chapter will continue their efforts to protect clean water. At the university level, the student club will host more work days, develop signage and expand outreach opportunities on campus. The Cape Fear Chapter will be partnering with the City of Wilmington Heal our Waterways program to hold a rain garden workshop, transform a residential yard and install an OFG in a public space. The chapter is working to secure locations that will further help improve water quality in Bradley Creek.

In addition to working within the same watershed, another special connection between the two Surfrider OFG groups in North Carolina is that the Cape Fear OFG Coordinator, Abby Perry, first motivated club leader Miles Abernathy to get involved with the Surfrider Foundation as his faculty club advisor at Cape Fear Community College. It is inspiring to see Abby's influence blossom as former students grow into conservation leaders that are ready to tackle pollution problems at the coast.

Lower Photo: Elementary students help prepare the soil for planting.

CASE STUDY

VENTURA COUNTY, CA

Conserving Water and Protecting Local Water Quality with Ocean Friendly Gardens

Similar to most coastal communities across the country, the beaches in Ventura County are affected by urban runoff. Both rain and misdirected irrigation wash oil, lawn chemicals, animal waste and other contaminants into storm drains and ultimately to the ocean. However, Ventura is somewhat unique in Southern California as it does not import fresh water from Northern California or the Colorado River as other counties in the region do. Instead, Ventura County relies solely on local groundwater and surface reservoirs for its water supply. As a result, water conservation is extremely important to their community, especially during times of drought.

The Surfrider Foundation Ventura Chapter's Ocean Friendly Gardens (OFG) program aims to both protect water quality and conserve local sources of fresh water. Chapter volunteers achieve this by promoting sustainable landscaping techniques that capture rainwater and remove pollutants from runoff. OFG techniques reduce local impacts of runoff by allowing water to instead soak into the ground to recharge underground aquifers and restore local stream flows.

The chapter's highly active program is run by a three-member OFG committee, which meets on a monthly basis to plan and organize workdays, fundraising events, and educational and outreach opportunities. In 2017, the chapter installed four gardens that were dedicated as memorials to Paul Herzog, Surfrider's Ocean Friendly Gardens Coordinator, who lived and worked in Ventura. Paul's influence to make the City of Ventura more Ocean Friendly can clearly be seen in the continued efforts of the chapter's OFG program and all their local partners that work together to support clean water.

The Ventura OFG program incorporates many education and outreach events into their annual work plan to amplify the OFG message of applying CPR—Conservation, Permeability and Retention—to our landscapes and hardscapes to revitalize coastal watersheds. Chapter volunteers speak with the public and distribute educational information at various community events, and the OFG Committee Chair gives more in-depth presentations to diverse audiences such as the local rotary club, community councils and school groups.

The chapter has also created a Lawn Patrol flyer to support a self-guided tour of more than 22 OFGs that have been installed so far in the City of Ventura. Last May, the chapter hosted a successful OFG tour and dinner in the Eichler

neighborhood with co-sponsor Slow Food Ventura County. The tour was a great way to build community for the chapter and to raise awareness of how much beauty and function Ocean Friendly Gardens can add to residential yards. The chapter is looking forward to hosting another successful tour in 2018!

The chapter will also be partnering with the City of Ventura's Turf Removal Rebate Program this year to install two OFGs—one at the Ventura High School and another at the local community college. The chapter's OFG committee is also working with the city on their residential curb cut program to install gardens in road parkways. These projects direct runoff away from storm drains and into vegetated swales that will sponge up the water and allow it to soak into the ground.

Another big project for the chapter this year is to restore the Paul Herzog memorial garden located at the Ventura Botanical Gardens that was destroyed by fire last year. The Thomas Fire that swept across Ventura and Santa Barbara Counties in December 2017 was a tragedy for many, but it also presents a new opportunity to revegetate the landscape in a way that can both protect community safety and local water resources. To meet this need, the Ventura Chapter's OFG program is coordinating with a natural resources advisor at the University of California Cooperative Extension to make recommendations for landscaping in Fire Hazard Zones that are both Ocean Friendly and fire resistant. These recommendations will be shared with other Surfrider chapters that are dealing with similar climate conditions. Look for these forthcoming recommendations and other local OFG happenings to be posted on the Ventura County Chapter's Ocean Friendly Gardens Facebook page.

Garden tour participants learn how an OFG captures and soaks up rain.

Volunteers working hard as they plant an Ocean Friendly Garden in memory of former OFG Program Coordinator Paul Herzog.

CASE STUDY

RINCÓN, PUERTO RICO & ST. JOHN, USVI

Providing Critical Water Quality Information in Post-Storm Conditions

Over the last decade, the Surfrider Foundation Rincón Chapter's Blue Water Task Force (BWTF) has built an incredible reputation for providing credible and consistent water quality information. Since Hurricanes Maria and Irma pummeled the Caribbean last fall, the chapter's efforts have raised the bar even higher for a small group of volunteers taking charge to protect public health and clean water.

After Hurricane Maria hit Puerto Rico, the almost complete absence of government-run water quality testing programs was a rallying call-to-action for the Rincón BWTF. Although chapter volunteers were experiencing the same difficult post-storm conditions as the rest of the island, they were able to restart their water quality monitoring program by partnering with other local groups to empower communities to generate their own water quality information and protect their health.

Because of electrical shortages and interruptions in water treatment in post-storm conditions, Puerto Rico and other island nations in the Caribbean saw an increase in water-borne diseases and infections. Compounding the increased health risk is the fact that it took government agencies in Puerto Rico up to three months after Hurricane Maria landed to restart their water testing programs, which are still not operating at full capacity. Even today, there are far too many households without access to basic necessities such as clean drinking water and electricity.

To meet this critical need, the Rincón Chapter banded together with the Costa Salud Community Health Center and RBC Maria Relief to get their lab equipment, which requires electricity, back up and running. The chapter pulled its first water quality samples at the beach in mid-October, only three weeks after the hurricane hit. Bacteria levels at the beach have been predominantly safe since then, although there have been some localized pollution problems caused by failing and damaged sewage infrastructure and stormwater runoff.

The chapter also started testing streams, springs and other community sources of fresh water that were being used as drinking and household water. The volunteers are using EPA-approved methods to test for fecal indicator bacteria at sites located close to Rincón at the coast. In rural communities located further inland, more basic tests are

being used that don't require a lab facility with electricity. Through this work, the chapter has not only identified a number of sources of water that were not suitable for drinking or bathing, but they have also trained others to do the testing.

In addition, Surfrider volunteers are talking to people in these communities about health issues from exposure to polluted water and are helping to direct the installation of water filtration systems to secure access to clean potable water during emergencies and power failures. For example, BWTF test results from a freshwater spring located close to a school in the relatively impoverished neighborhood of Maricao revealed extremely high bacteria levels that were literally off the charts as they exceeded the maximum bacteria level our tests can measure. The Rincón Chapter has since gone back to this school with aid workers to talk to the teachers and students about health risks from contaminated water and to give a demonstration on proper use of water filters. The chapter is also working with a local teacher to build the capacity at the school to monitor important community sources of water. Stay current with Surfrider Foundation Rincón's efforts to test new sources of water and train community volunteers on Facebook.

STEVE TAMAR

Local law enforcement and volunteers working together to monitor water quality from runoff sources after Hurricane Maria.

The neighboring island of St. John in the US Virgin Islands, also experienced severe devastation from Hurricanes Irma and Maria. To help protect the community from contaminated water, Surfrider coastal defenders partnered with a local organization, Love City Strong, to start a BWTF water quality testing program. This new program is monitoring water quality at public beaches and is providing critical information on the levels of bacteria in drinking sources across the island, including private rain cisterns. Volunteers have also secured donated Sawyer water filtration systems from the organization, Waves for Water, and have provided training to island residents on their proper use and installation.

Visit the BWTF website to view a map of the regularly monitored sites in Puerto Rico and St. John.


COLLEEN HENN

Steve Tamar of Puerto Rico's Rincón chapter processing and recording data from water samples collected after Hurricane Maria.

Some of the Surfrider Foundation HQ team gathered to construct an Ocean Friendly Garden in honor of Paul Herzog at Surfrider HQ.

WAVES OF IMPACT

BY PETE STAUFFER, ENVIRONMENTAL DIRECTOR

The last time I saw Paul Herzog was in a parking lot in Irvine, California. It was Earth Day and Paul and I had been invited to address several hundred Vans employees on the topic of environmental stewardship.

No doubt, the event could have easily become a rote exercise—a chance for staff to escape their cubicles for a few minutes of sunshine. But when Paul addressed the crowd, something amazing happened: people paused to reconsider the environment around them and the opportunity to make positive change.

"We're in a watershed," Paul proclaimed defiantly. It was a seemingly odd statement, with concrete and asphalt all around us. But no one laughed or challenged his point. That was one of Paul's gifts: his earnest passion and sharp intelligence could reach even the most resigned and distracted of audiences.

The Surfrider Foundation is lucky to attract incredibly talented people to its network, but Paul was something special. For him, the Ocean Friendly Gardens program was more than just a vocation, it was a higher calling that spoke to his deepest beliefs about our role as stewards of the planet.

Many of us in the conservation movement gravitate to protecting the pristine—the unadulterated ecological gems that have *mostly* yet to succumb to human impact. But, Paul took a different approach. Where others saw a lost cause—an urbanized landscape or polluted stream—Paul saw an opportunity to bring a watershed back to life. I think that speaks volumes about the kind of person he was.

Even though we have lost Paul, I will always remember the wonderful things about him. His contributions will live on in the many communities and people he touched.

THANK YOU FOR YOUR CONTINUED SUPPORT.

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