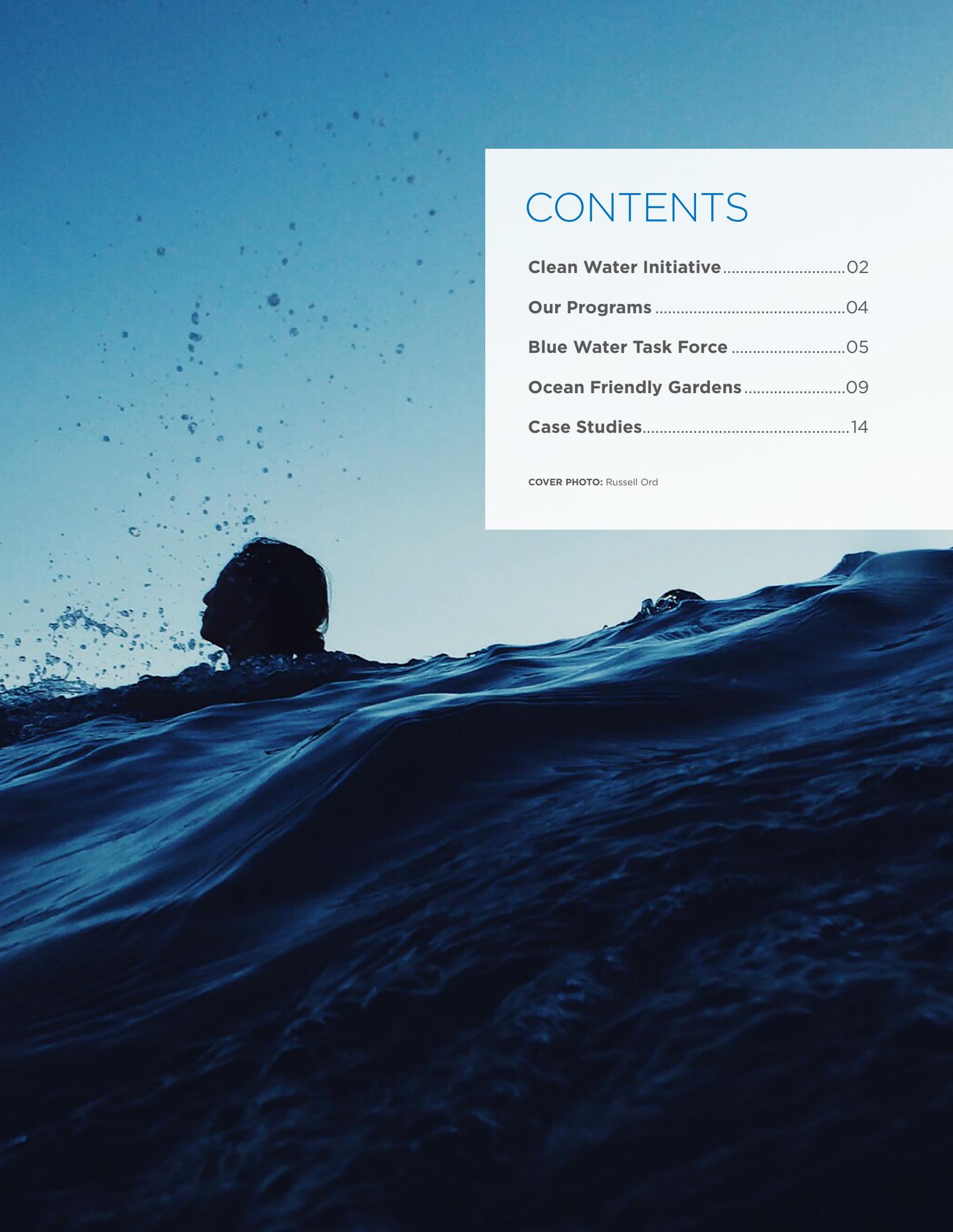


# CLEAN WATER REPORT

2016



# CONTENTS

<b>Clean Water Initiative</b> .....	02
<b>Our Programs</b> .....	04
<b>Blue Water Task Force</b> .....	05
<b>Ocean Friendly Gardens</b> .....	09
<b>Case Studies</b> .....	14

**COVER PHOTO:** Russell Ord



# 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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Thank You to Our Sponsors:



**West Basin Municipal  
Water District**

**San Diego Sustainable  
Landscapes Program**

**Fond Group**

**The Walrath Family**

**Los Angeles Department  
of Water and Power**



## The Threats

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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

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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 2017 is to ensure that the Environmental Protection Agency (EPA) maintains adequate funding, staffing and authority to continue to meet its mission of protecting public health and clean water. EPA programs and safeguards are critical to ensure 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. You can [join us in asking Congress](#) to stand up for clean water and reject the debilitating budget and staffing cuts proposed by the new administration.



# OUR PROGRAMS

This annual report tracks the progress of our Blue Water Task Force and Ocean Friendly Gardens programs during the calendar year of 2016 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

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The Blue Water Task Force (BWTF) is Surfrider's volunteer-run, water testing program. Operating through a national network of 35 labs, BWTF citizen scientists are providing critical water quality information to protect public health at the beach, raising awareness of local pollution problems and bringing together communities to implement solutions.

[surfrider.org/blue-water-task-force](http://surfrider.org/blue-water-task-force)



## Ocean Friendly Gardens

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Our volunteers help local communities create Ocean Friendly Gardens (OFGs) that achieve multiple benefits: conserve water, energy and wildlife habitat with climate adapted plants; revive soil health to sponge up rainwater and filter out pollution as well as absorb carbon from the air; and shape landscapes to retain rainwater and reduce the amount of polluted runoff reaching the ocean. By planting Ocean Friendly Gardens across the country, our extensive chapter network has prevented more than 15 million gallons of urban runoff from polluting our coastal waters and the ocean.

[surfrider.org/programs/ocean-friendly-gardens](http://surfrider.org/programs/ocean-friendly-gardens)



## 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.

Two such BWTF chapter campaigns realized great success in 2016. In Hawai'i, the Department of Health (HDOH) posted a warning sign where a heavily polluted stream discharged onto the beach after the Kaua'i Chapter's BWTF data revealed chronically high bacteria levels. Surfrider is now working with HDOH to improve their public notification program state-wide to better warn beach-goers of polluted water at the beach.

In California, the Santa Cruz Chapter has been documenting high levels of bacteria at the popular Cowell's Beach for 5 years and using their data to support a community effort to find and fix the sources of pollution. Measures taken to keep birds from roosting under the Santa Cruz pier during the summer of 2016, seem to have made a big impact on lowering pollution levels in the water, and the chapter intends to continue to monitor the site to ensure this trend continues and/or investigate other potential sources of pollution.

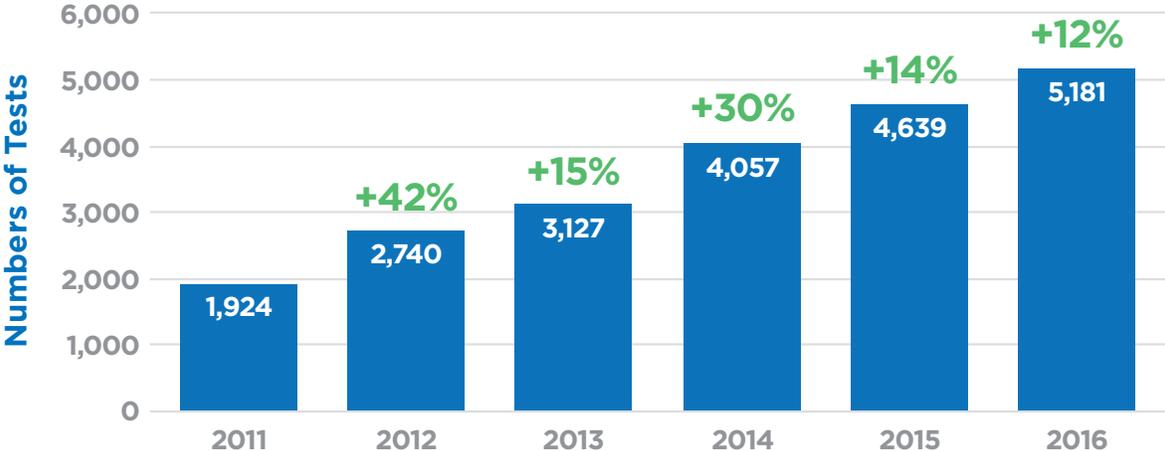
# 2016 PROGRAM ACTIVITY & RESULTS

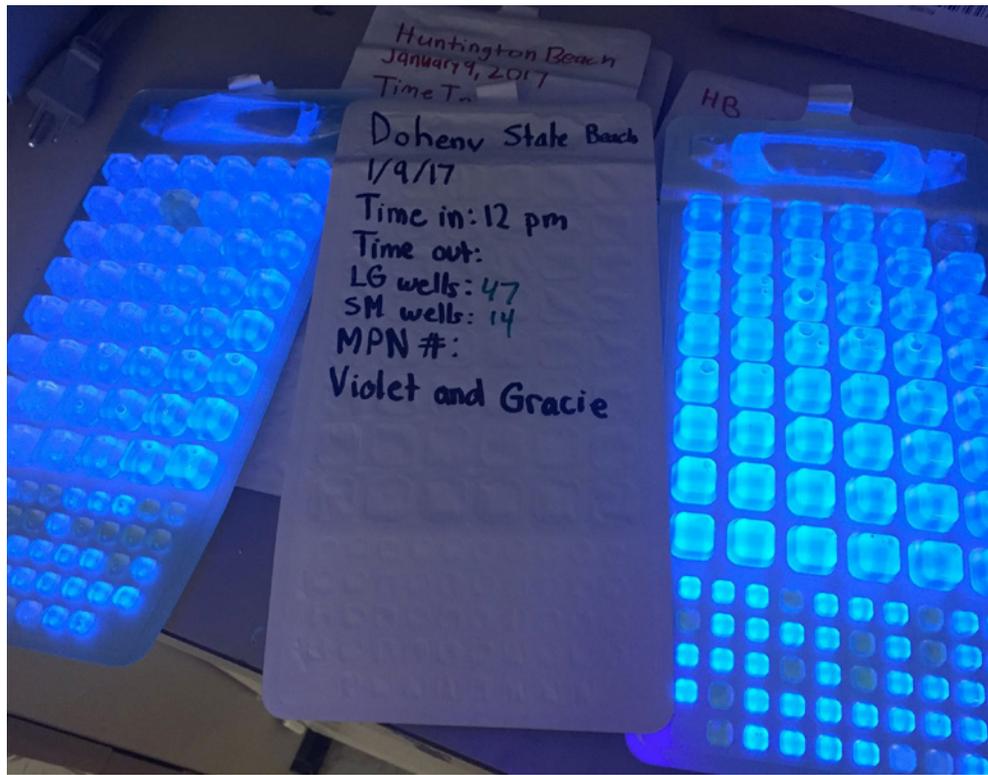
## Blue Water Task Force Water Testing Lab Locations



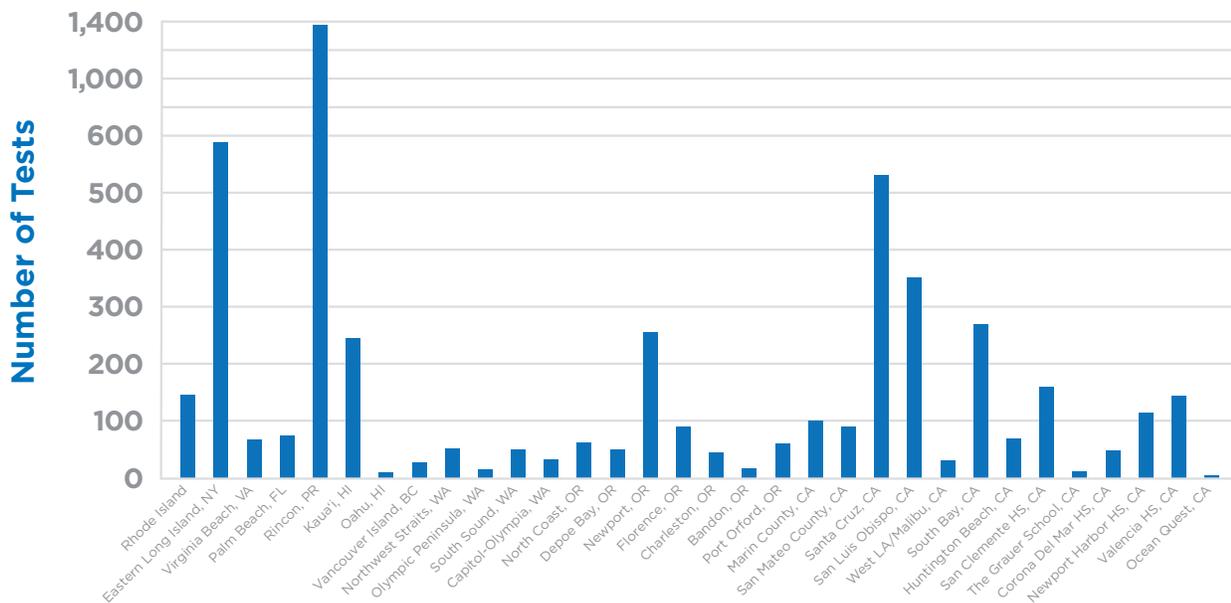
## Annual Growth in Water Testing: 2011-2016

During 2016, we saw continued growth of this successful chapter-run program. There were 35 BWF labs that processed 5,181 water samples collected from 339 distinct sampling sites.





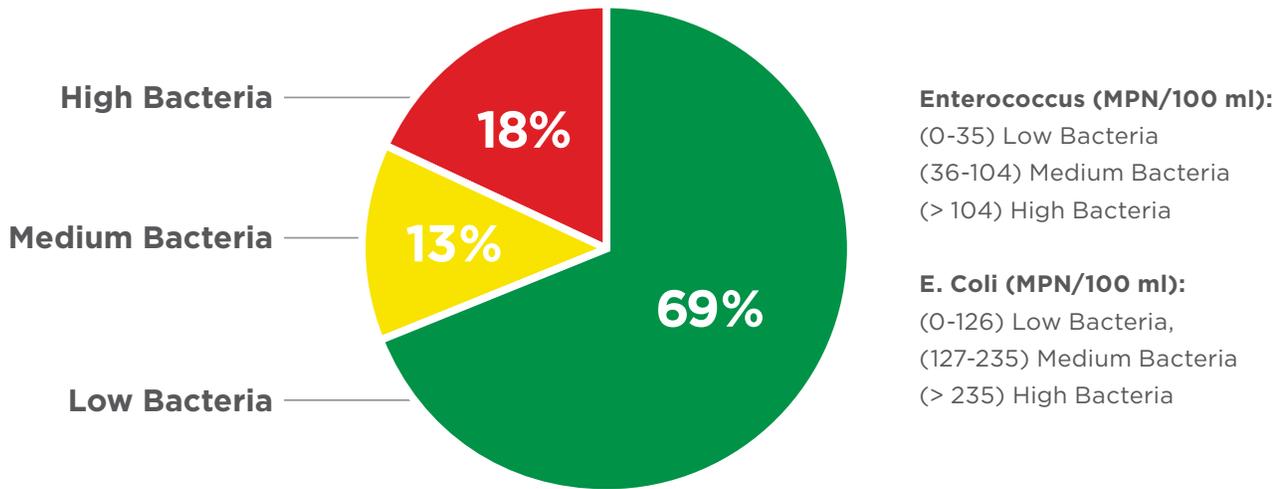
## Water Samples Collected by the BWTF in 2016 (5,181 total)



Three new BWTF programs started testing during 2016: Palm Beach, FL; Capitol-Olympia, WA; and Ocean Quest in Newport Beach, CA. Two existing programs also expanded to launch additional labs, the Eastern Long Island Chapter set up a second lab in Southampton, NY, and Marin County launched a new program

with an oceanography class at Marin Academy. The Rincón Chapter in Puerto Rico put forth another massive volunteer effort running 1,372 water tests during 2016 and accounting for 26% of the national program's activity. Case study on the Rincón Chapter is provided at the end of this report.

## Bacteria Levels Measured by the BWTF in 2016



The collective results from all the participating BWTF labs have remained relatively constant since we began compiling an annual report in 2011. Of the 5,181 water test results reported in 2016, 69% indicated low bacteria levels, 13% indicated medium bacteria levels, and 18% 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

Building Healthy Soil 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.

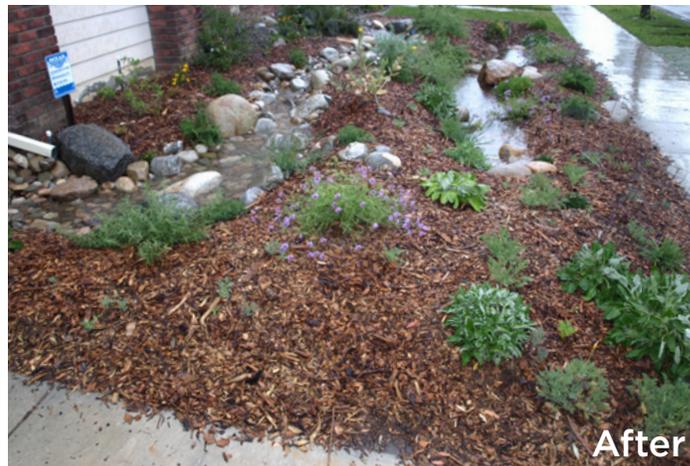


Creating healthy, living soil is the foundation of CPR. Soil organisms such as worms create spaces for water to gather, and they incorporate organic matter like leaves into the soil. Microorganisms further decompose it into plant available food, while also filtering pollutants. A fungus that forms a 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 pull carbon from carbon dioxide in the air (known as photosynthesis), and use the carbon to feed its development and secrete what it does 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, 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.



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



# 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 and Tabling

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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

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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

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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

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Chapter activists are also advocating for local policies to promote or require CPR and the watershed approach. We have worked hard to convince the multiple agencies that deal with landscapes (water supply, water quality, flood control, green waste, etc.) that there is value in a holistic approach. In addition, we have encouraged these agencies to collaborate, leveraging their resources and regulatory muscle to reinforce a common message.

In many instances, local governments are already promoting or requiring the watershed approach. Under federally mandated stormwater permits, new development is commonly required to retain the first inch or two of runoff from a typical storm, often by contouring the land to slow, spread and soak in water on-site. In addition, many states have rebate programs for 'rain gardens', which typically apply CPR. States with older cities are doubly interested in rainwater retention because their combined sewer and storm drain systems can get overwhelmed by only a small amount of rain. This sends untreated sewage through storm drain pipes into coastal waters where it puts public health at risk.

But it is only recently that some states like California have started to encourage retrofitting *existing* landscapes as well. The West LA/Malibu Chapter helped lead the effort to require recipients of the city of Los

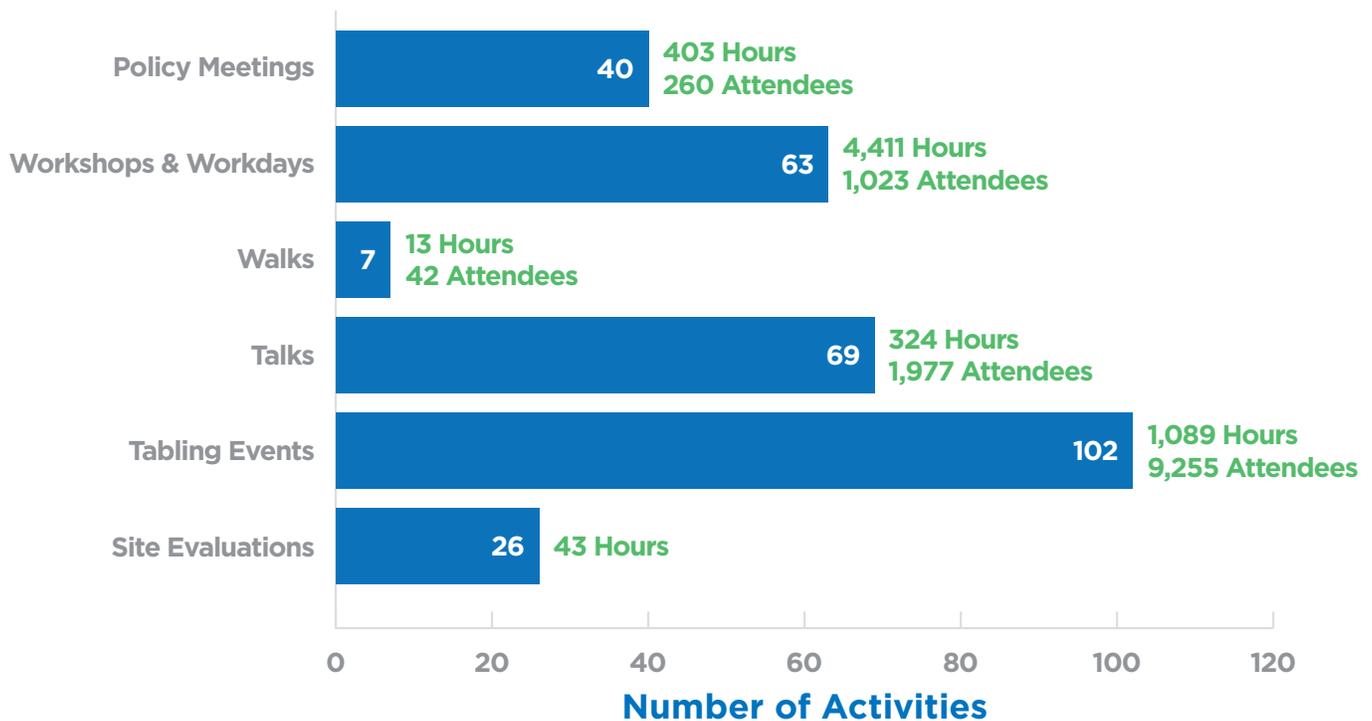
Angeles' Department of Water and Power turf replacement rebate to follow the watershed approach. The San Diego Chapter is also a partner in the state grant-funded Sustainable Landscapes program that offers a rebates for San Diego County residents who follow the watershed approach. The effort in San Diego is a first-of-its-kind partnership in California between water supply and water quality agencies, non-profit organizations and an association of compost producers. In addition, Surfrider received a grant for work in 2017 to leverage the LA and San Diego successes and expand the requirement of the watershed approach to the remaining coastal counties in Southern California.

Surfrider chapters have also been involved in legislative efforts. The West LA/Malibu and South Bay Chapters endorsed successful initiatives in Los Angeles County. One funds park development and the other transit expansion, both with requirements for retaining rainwater. Lastly, California chapters supported a statewide bill to provide a rebate for following the watershed approach and requiring workforce training at conversions of public sites. The bill garnered significant support, but stalled due to lack of state funding. A similar bill has been submitted in the state senate this year, that moves away from providing a rebate and, instead, would require state grant programs to follow the watershed approach.

# 2016 PROGRAM ACTIVITY & RESULTS

During 2016, Surfrider chapters and activists held 307 events, and clocked nearly 6,300 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. 25 chapters conducted OFG programs and were directly or indirectly involved in installing 35 gardens.

## 307 Activities Over 6,283 Volunteer Hours



**6,283 volunteer hours x \$23.07 per hour\* = \$144,949 of value**

\*Hourly wage according to [independentsector.org](http://independentsector.org)

Ocean Friendly Gardens have prevented over  
**15 MILLION GALLONS**  
of urban runoff from polluting our coastal  
waters and the ocean.

# 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.

## Sebastian Inlet, Florida

### Restoring Natural Shorelines With Ocean Friendly Gardens



The Surfrider Foundation Sebastian Inlet Chapter is restoring the shore for cleaner surf and sea level rise adaptation. In Florida, the Indian River Lagoon (IRL) has made international news recently for all the wrong reasons. The once magnificent 156 mile long coast estuary is plagued by fish kills, algal blooms, polluted discharges from Lake Okeechobee, and habitat loss from development—a veritable death by a thousand cuts.

One of the major causes of these environmental problems is the overabundance of nutrients in the water. Nitrogen and phosphorous, largely from septic systems, cesspools, agriculture and residential fertilizers, are over-fertilizing many of Florida's coastal waterways and causing environmental havoc in the form of [harmful and toxic algae blooms](#). The Sebastian Inlet Chapter has been working to decrease and

eliminate fertilizer inputs into the watershed to improve water quality and allow the ecosystem to recover. Moving the public's view in this direction requires a lot of education, and the chapter is leading by example through engagement in restoration efforts at multiple levels. They have a board seat on the [Brevard Indian River Lagoon Coalition](#), an advocacy group modeled after the successful Chesapeake Bay Foundation. They are also advocating for fertilizer ordinances and increased funding directed at IRL restoration.

During 2016, the chapter also completed two Ocean Friendly Gardens (OFG) projects to restore natural shoreline habitat in partnership with local municipalities and other non-profits. The first project occurred at Ryckman Park in Melbourne Beach, the oldest beach community in Brevard County. The project was dubbed

“Restore The Shore.” It was co-led by the chapter’s OFG coordinator, Bill DeLuccia, and Nichole Perna, Assistant Land Manager with [Brevard’s Environmentally Endangered Lands Program](#). They worked every step of this project: from the conception and coordination with the town to get approval, to final design, selection of plants, and even doing the site prep work in the days just before the event. More than 150 volunteers turned out on a beautiful, hot, Saturday morning and completely transformed the park’s shoreline from irrigated and fertilized turf grass into native plant beds. The native plants and healthy soils in these gardens filter runoff before it goes into the lagoon and don’t require any fertilizers or irrigation beyond what is provided by local rainfall. The plants also provide native habitat important to the ecosystem’s recovery and restoration. Among our volunteers were Jim Simmons, the mayor of Melbourne Beach, and Dr. Duane De Freese, the executive director of the [Indian River Lagoon National Estuary Program](#).

opportunity to replace turf grass with native plants, and provide maximum visibility for residents who wish to follow the example and do their part to help the estuary.



This time, Bill DeLuccia was able to work together with his good friend (and frequent surf buddy) Nick Sanzone on organizing this project. Nick runs the MRC’s habitat restoration program, and he and Bill did a great job. In addition to the environmental benefits they provide, the shoreline buffers are beautiful!



The chapter partnered with the City of Satellite Beach and the Marine Resources Council to install a second OFG demonstration garden at the Satellite Beach City Hall. The mayor of Satellite Beach, Frank Catino, is also the dean of local inshore light tackle and fly fishing guides, and he spends a lot of time out on the water in the lagoon. Perhaps more than any other local government figure, he understands how important it is to the local economy to save the IRL. The city hall location provided an

The chapter learned a lot of lessons that will make future OFG projects easier to install, such as the importance of keeping these projects volunteer-friendly. This is done by having some of the prep-work completed in advance. That way, when volunteers arrive on-site, the plants are ready to go in and results are easy to see quickly. Division of labor is also important. Kids are great at putting in plants, but shoveling and hauling mulch are adult jobs. The chapter looks forward to working with more communities to demonstrate how we can all become more Ocean Friendly and help prevent pollution from getting into the Indian River Lagoon.

**PHOTOS:** James Kilby of Kilbyphoto LLC

## West Los Angeles/Malibu, CA

### Educating Homeowners and Advocating for Positive Changes to Public Policy



For the second year in a row, the [Ocean Friendly Gardens Program of the Surfrider Foundation's West Los Angeles/Malibu \(WLAM\) Chapter](#) was part of a partnership that received a large water conservation grant from the Los Angeles Department of Water and Power (LADWP). In 2016, the chapter partnered with [SELVA International](#), the [Neighborhood Council Sustainability Alliance \(NCSA\)](#), Mack Consulting, UCLA's Landscape Architecture program and [Venice Youth Build](#) (a career-training program for at-risk youth). Through this partnership, they installed five Ocean Friendly Gardens (OFGs) and conducted [community-based social marketing](#) research on the impediments and solutions to implementing landscape conversions.

The chapter recruited a group of five enthusiastic homeowners from four city council districts to host hands-on workshops. The workshops were similar to traditional OFG workdays, known as 'Garden Assistance Parties,' but they were longer (six hours each) and were run by a paid workshop leader. Two workshops were conducted at each of the homes. The first session covered how to remove turf grass,

create simple swales and basins to collect rainwater from a rain gutter downspout, and build soil through sheet mulching. The second workshop focused on designing and installing gardens with California native plants. Nearly 150 people attended these OFG workshops, including ten Venice Youth Build members, who provided assistance with the workshops after receiving training by SELVA professionals.



The social marketing research conducted during these workshops revealed several important findings. For example, it indicated that the most motivating factors to change a landscape are saving water and preventing pollution. The biggest roadblocks preventing people from



converting their yards to OFGs are perceived expense and time needed to complete a project. The workshops helped to increase awareness that landscapes can be transformed to OFGs with minimal expenses and time involved. It was also determined that educational programs have a multiplying effect, meaning that those who attend more programs are more likely to convert their gardens.

In response to the workshops and marketing research, SELVA developed a collaborative, non-profit consulting and landscaping service called EcoGardens. EcoGardens offers low-cost, OFG-oriented services to Los Angeles residents. They offer free resources, including four native plant design templates, to help residents cut the cost and time needed for landscape conversions. As an incentive for participating in the workshops, all attendees were given discount coupons for EcoGardens' professional landscape services.



The majority of workshop participants ranged in age from 50-70 years old, mostly retired or semi-retired, and were looking to save water and learning how to do-it-yourself. The team discussed potential ways to expand to new audiences, including possible instructional videos on how to convert yards to Ocean Friendly Gardens and what to ask for when hiring a professional.

The positive impact of the workshops continued throughout last year. For example, the Surfrider Foundation West LA/ Malibu Chapter's Ocean Friendly Gardens Program achieved a related policy victory in 2016, when the Green LA Coalition (led by Surfrider and G3/Green Gardens Group) convinced the LA Department of Water and Power to change their turf replacement rebate requirements to follow OFG-type standards, or the watershed approach. After several meetings with agency staff, the recommendation went to the agency's Board of Commissioners and passed with a 3-2 vote. This will be a helpful measure to support the mayor's plan to generate 50% of the city's water needs with local water supplies and to prevent polluted runoff from reaching area beaches.

## Eastern Long Island, NY

### Building Community Support for Solving Water Pollution Problems by Engaging Local Partners and Students



The rural beauty of Eastern Long Island draws many visitors to the coast, but the population swells during the busy summer months, adding increasing pressure to infrastructure and water quality issues in local communities. Therefore, the [Surfrider Foundation ELI Chapter](#) is working with local partners, students and other organizations to protect public health and clean water across the East End.

The most visible and alarming symptom of water quality degradation has been the recent proliferation of toxic algal blooms in local pond, lakes and bays. These blooms are largely caused by excessive nitrogen coming from septic systems that don't properly treat wastewater and by fertilizers that are applied to agricultural fields and residential lawns. The blooms wreak havoc on local fisheries and aquatic ecosystems, and pose serious health risks in recreational waters.

During 2013, the Eastern Long Island Chapter joined forces with another NGO, the [Concerned Citizens of Montauk](#), to test bacteria levels at local ocean and bay beaches and freshwater ponds, lakes and creeks. The resulting water

quality information is shared to inform local management decisions in the Town of East Hampton and to provide safety information to beachgoers. The Suffolk County Department of Health monitors life-guarded ocean and bay beaches during July and August only, so the chapter's year-round Blue Water Task Force (BWTF) program was designed to fill



in the subsequent data gaps. As interest and support for their water testing program grew, the chapter also launched a second BWTF lab with help from another local partner, the [Peconic Baykeeper](#), to cover sites further west in the town of Southampton. [Dr. Chris Gobler](#) is

allowing the chapter to process water samples out of his lab at the [Stony Brook University School of Marine and Atmospheric Sciences](#). Dr. Gobler has performed extensive research on water quality, harmful algal blooms, and their causes and impacts here on Long Island, and the chapter is excited to share lab space with him. The chapter and their partners are currently monitoring 38 sites on a weekly basis during the summer, and monthly from October through May in the towns of [East Hampton](#) and [Southampton](#).

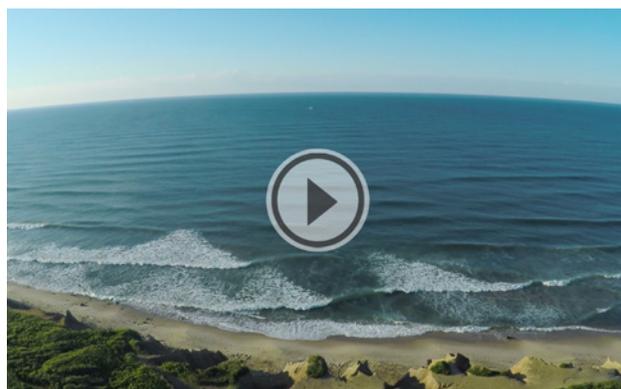


The chapter also launched its [Ocean Friendly Gardens](#) program during 2016 with the support of three family foundation grants and the [FOND Group](#) marketing agency. A demonstration garden was installed in a highly visible location in the central green of the Amagansett Square shopping center, with design and installation donated by [Marders Nursery and Landscaping](#). The garden captures the roof runoff from one of the retail buildings and showcases how native and climate appropriate plants can be used to build beautiful landscapes that support clean water. The chapter is also planning to complete a second OFG project in partnership with East Hampton Village and the [Ladies Village Improvement Society](#). Three bioswales have been designed by [Piazza Horticultural](#) to collect and filter road runoff in the central Village Green before it enters the adjacent surface waters of Town and Hook Ponds. Last fall the village altered the grading of the green to improve

drainage, and the chapter plans to install the bioswales later this spring once all adjustments to grading are completed.

In order to maximize the impact of their programs, the chapter also started hosting [clean water workshops](#) this past year, bringing interested adults and children to the beach to get their hands wet to collect their own water samples and to discuss ways everyone can pitch in—at home, work or school—to help prevent pollution at the beach. It was really inspiring for the chapter volunteers to see just how interested and engaged the participants were in the topic. The workshops were also a great platform to discuss positive policy changes that the chapter was advocating for, such as the extension of a community preservation fund to pay for water quality improvement projects and changes to the Suffolk County Sanitary Code to allow new de-nitrifying septic technologies for commercial and residential applications.

With their grant support, the chapter was also fortunate to work with filmmaker and professional surfer [Mikey Detemple](#), to make the short film [Into the Sea](#). By featuring local community members and landscapes, the film makes the connection between how we manage our lawn and gardens at home and the health of local waterways. It promotes personal responsibility for making changes to protect our own health and to prevent pollution from contaminating Long Island's bays, ponds and ocean.



**ABOVE:** Click the image above to view Mikey Detemple's film, *Into the Sea*.

## Rincón, Puerto Rico

### A Massive Effort to Protect Public Health and Understand Bacterial Pollution at the Beach



In the past decade, hundreds of Surfrider volunteers, local students and community members have joined the Surfrider [Rincón Chapter's Blue Water Task Force](#) in their efforts to monitor water quality at beaches in the northwest corner of Puerto Rico and in the rivers and seasonal streams that carry stormwater and pollutants down to these beaches. They put forth a massive volunteer effort, running over 1,000 water tests during each of the last two years (1,371 tests in 2016 alone) and providing vital information on the safety and health of local waters in areas where there is not much water quality data available otherwise.



**ABOVE:** A local Rincón Chapter volunteer collects a water sample from standing water at a near by beach.

The chapter runs their regularly scheduled monitoring program out of their main water testing lab set up in their office in Rincón, sampling 12-14 sites on a weekly basis. They also support and mentor a satellite water testing lab located at the Ramey School in Aguadilla, where middle school students are receiving hands-on training in water quality testing methodology. Volunteers from another NGO, [Rescate Playas Isabela](#), collect water samples at four beaches and deliver them to the school for processing.

Sampling efforts were so great during 2016, in part because the Rincón Chapter continued their research collaboration established the previous year with the Department of Applied Ocean Science & Engineering at the [University of Puerto Rico Mayagüez \(UPRM\)](#) and the [Caribbean Coastal Ocean Observing System \(CariCOOS\)](#). This expanded effort includes biweekly sampling of six sites in the core study area between the town public beach at Balneario and the Reserva Marina Tres Palmas. The purpose of the collaboration is to provide more public health information for popular recreational waters and essential bacteria data



needed to assess the impact of long-shore currents, tides, rainfall, sediment transport and wave action on the fate of pollution along the coast of Rincón and Northwest Puerto Rico which is affecting coral health and nearshore reef ecosystems. The chapter is also mentoring and providing logistical support to a long-term monitoring project at Playa Santa conducted by UPRM graduate student, Geraldine Gomez Matias.

The [Rincón Chapter](#) aggressively promotes their data to inform beachgoers, community members, and local and federal officials of the local water pollution problems identified by their monitoring program. Rincón's BWTF water quality data is also impressively hosted on the [CARICOOS](#) website, and their BWTF coordinator frequently gives presentations describing local water quality conditions for both scientific and community-based audiences.

During 2016, the Rincón Chapter also partnered with another national non-profit, [Ridge to Reefs](#), to perform watershed assessments and investigate the sources of pollution in some of the freshwater outflows that discharge onto area beaches. Together, they successfully caught the attention of the regional EPA office and the Puerto Rico Aqueduct and Sewer Authority to come inspect some suspected sewage infrastructure failures. Three blocked sewer manholes along an intermittent stream that discharges near [Rincón's municipal beach](#) and some necessary repairs to a sewage pumping sub-station were discovered.

The planned repairs will hopefully eliminate the recurring sewage smell in the local area and the bacteria counts in the stream will also go down. Read more about this successful partnership to solve local sources of pollution [here](#).



Through these partnerships and outreach efforts with other NGOs and research institutions, the Rincón Chapter's Blue Water Task Force has built a solid reputation as a credible citizen science program and dependable source of water quality information, and they often provide advice and guidance to relevant governmental agencies and academic institutions. All of this helps the program to inform people on where it is safe to get into the water and to build the junction of community awareness, technical ability and political will needed to find and fix local sources of pollution.



THANK YOU FOR  
YOUR CONTINUED SUPPORT.

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PHOTO: Tim Marshall