

CLEAN WATER REPORT

2018



SURFRIDER
FOUNDATION

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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 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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IN LOVING MEMORY
OF CHUCK VINSON**

The Threats

Water quality at the beach is threatened by pollution from urban and agricultural runoff, sewage spills and overflows, in addition to 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 toward the ocean. At the same time, valuable fresh water is wasted when it is used once, mixed with waste, and then discharged 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.



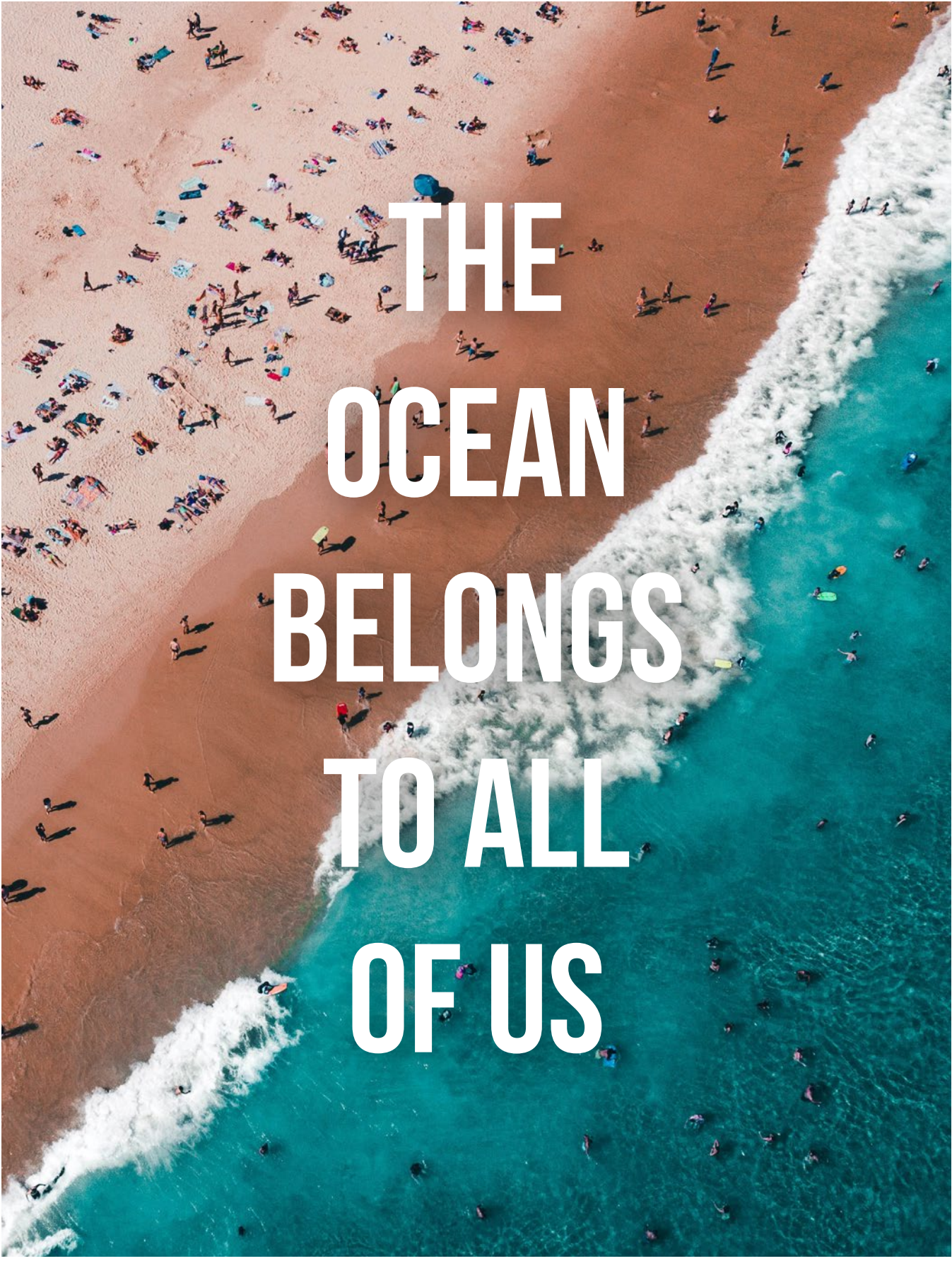
Through a large network of volunteer-led chapters, the Surfrider Foundation is educating communities on how we can all work together to protect clean water. We advocate for strong laws and sufficient funding to monitor and protect water quality. In addition, we offer alternatives to development and energy 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 to the ocean is 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 funding cuts by the Trump administration. Multiple actions have also been taken to rollback protections under the Clean Water Act and other federal environmental laws. Of immediate concern is a new 'Waters of the U.S.' rule that was published in February 2019. If adopted, the proposed rule will wipe out Clean Water Act protections for seasonal streams that contribute to the drinking water for tens of millions of people. It will also remove protections for wetlands that filter pollution and protect our communities from flooding. Surfrider is building awareness of the impact that this misguided 'Dirty Water Rule' will have on clean water and healthy coastal communities. Join us and ask the EPA to do more to protect clean water, not less. Visit [Surfrider.org](https://www.surfrider.org) to learn more.

Surfrider is also looking toward the courts to ensure proper enforcement of the Clean Water Act. In April 2017, U.S. Steel illegally spilled 300 pounds of highly toxic and carcinogenic hexavalent chromium near the 'Southend' of Lake Michigan, a unique spot for surfers and other recreationists. This massive and dangerous spill ultimately closed public drinking water intakes and shut down beaches from Gary to Michigan City, Indiana. Despite this spill, years of additional violations and poor maintenance practices, government regulators did not take action to ensure the company met its Clean Water Act permit requirements. As a result, [the Surfrider Foundation filed a lawsuit to force U.S. Steel to clean up its act](#) and stop polluting Lake Michigan. Surfrider also recently intervened in a separate enforcement action that state and federal regulators eventually brought forth.

The 'Southend' of Lake Michigan is a unique spot for surfers and other recreationists, where massive and aging industrial facilities sit amongst rare natural beauty and great waves. Surfrider's action to hold U.S. Steel accountable for its violations sends a clear message that those who love our nation's coastlines will not sit idly by when big corporations disregard the laws designed to protect clean water and public health.

An aerial photograph of a crowded beach. The sand is a warm, reddish-brown color, and the ocean is a vibrant turquoise. White waves are breaking along the shoreline. Numerous people are scattered across the beach and in the water, some sitting on towels, others standing, and many swimming. The overall scene is one of a busy, popular beach destination.

**THE
OCEAN
BELONGS
TO ALL
OF US**

OUR PROGRAMS

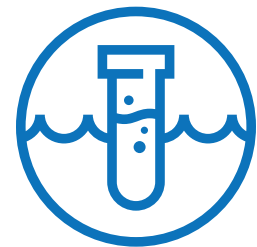
This 2018 Clean Water report tracks the progress of the Surfrider Foundation's Blue Water Task Force and Ocean Friendly Gardens programs. It also shares case studies that show how Surfrider chapters are applying these programs to protect public health, identify water quality concerns and bring together local communities to implement lasting 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 nearly 50 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, inexpensive and natural solutions to water pollution caused by urban runoff. Chapters use this program to connect how we care for our yards and public spaces with the resulting health of our local waterways and beaches.

surfrider.org/programs/ocean-friendly-gardens





BLUE WATER TASK FORCE

Since the inception of the Blue Water Task Force (BWTF) program 25 years ago, Surfrider volunteers have been out in their communities testing the water quality at the beach. Our chapter-led BWTF labs measure bacteria levels at ocean and bay beaches, in addition to freshwater sources, and compare them to the water quality standards established to protect public health in recreational water. All water quality data is posted on Surfrider's [BWTF webpage](#) and shared through social media, email and community presentations.

Most of the chapters' water testing programs are designed to fill in the gaps and 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. Students are also involved and help to collect and process water samples for more than half of our BWTF programs nationwide.

The BWTF is in operation year-round, providing public health protection through the offseason. Surfers continue to be exposed to potentially polluted water, even when lifeguards leave the beach and health officials stop collecting water samples. When our BWTF results demonstrate real water quality concerns, our chapters use that data to build community awareness. They also apply the results to

motivate local governments and stakeholders to take action and fix sources of ocean pollution.

The BWTF programs on Kaua'i and Eastern Long Island both experienced progress this year while working with state health authorities to improve signage that warns the public of health risks at the beach. On Kaua'i, the Hawai'i Department of Health has posted permanent warning signs at a couple of locations where bacteria levels nearly always exceed health standards. The Kaua'i Chapter will continue to share their water quality data with the state to ensure that the public is notified of high bacteria levels at other chronically polluted beaches as well.

In New York, the Eastern Long Island Chapter has worked with state and county health authorities to improve the signs used to warn the public of toxic blue-green algae blooms. The chapter has also coordinated with the local town trustees to ensure that the new signs are posted in secure, visible locations where people will see the warnings of health risks. The water quality data generated by the Eastern Long Island BWTF has also been well-received locally. It is informing pollution source-tracking studies and local planning decisions. Read more about the positive community impact that these two chapters are achieving in their annual water quality reports: [Eastern Long Island](#) and [Kaua'i](#).



Above: Steve Tamar of Puerto Rico's Rincón Chapter collecting water samples after Hurricane Maria.

In 2018, two other chapters were also able to adjust their BWTF sampling programs to help meet community concerns and needs in the aftermath of natural disasters. In Puerto Rico, the Rincón Chapter expanded its BWTF program to test community sources of freshwater in the months following Hurricane Maria. This was especially critical during a time when much of the population was left without secure sources of drinking water. [Watch this short film](#) to learn more about the BWTF response to Hurricane Maria.

In California, the Isla Vista Chapter, run by University of California Santa Barbara (UCSB) students, adjusted their water sampling program to better understand the impacts of the Thomas Wildfire on local water quality conditions. Once the fire was contained, heavy rain falling on the affected burned hillsides caused mudslides to occur. Local beaches received much of the debris and sediment from the mudslides. As a result, the Isla Vista BWTF [added sampling sites and started testing more frequently](#) to provide additional information to help protect safe ocean recreation.

To best protect yourself and your family's health, always check local water quality conditions before you head to the beach. All of Surfrider's water quality test results are available at [Surfrider.org](https://www.surfrider.org). You can also download the [Swim Guide app](#) to access beach information on your mobile device.

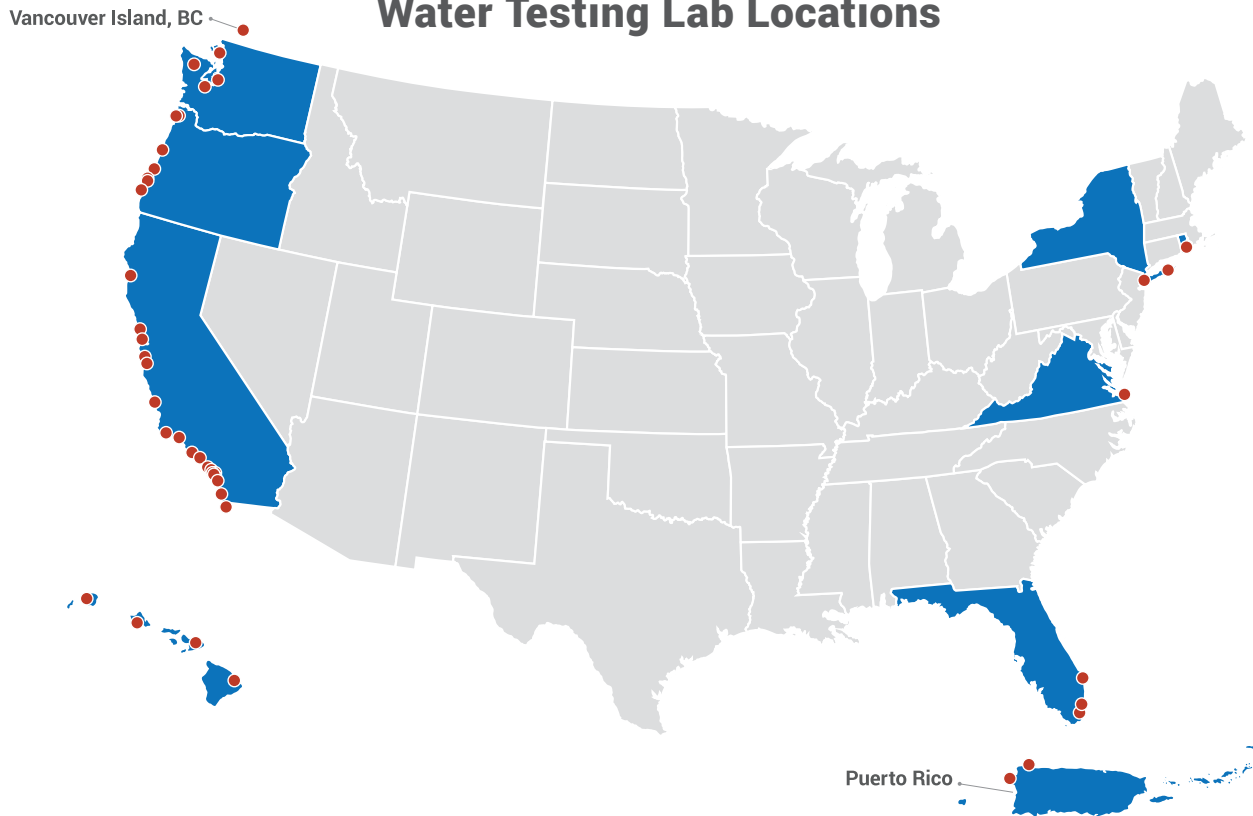


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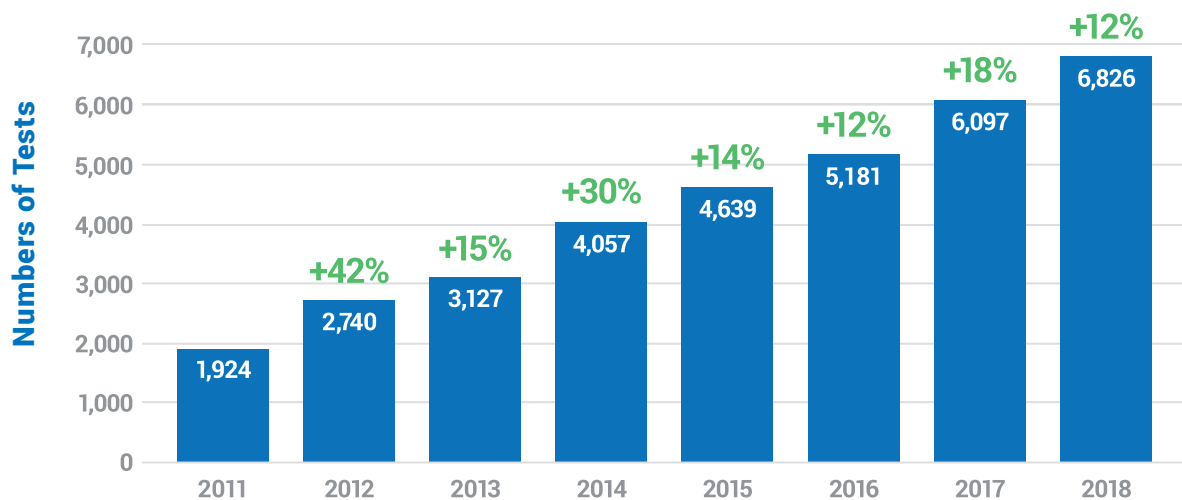


2018 PROGRAM ACTIVITY & RESULTS

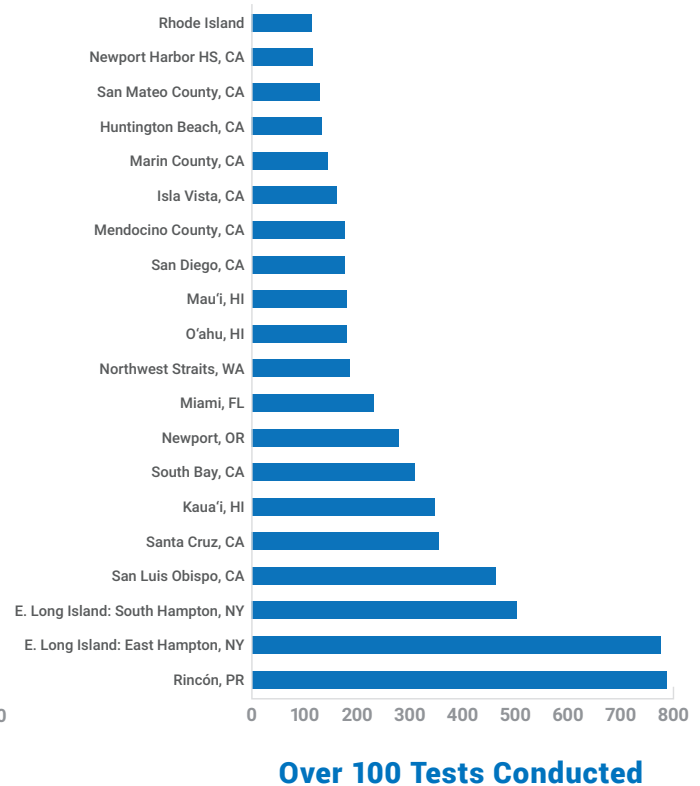
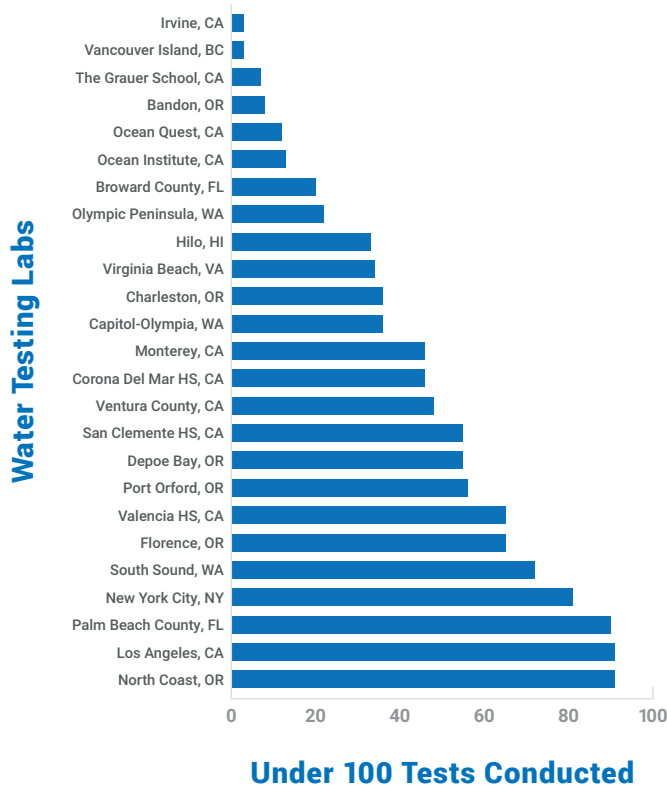
Blue Water Task Force Water Testing Lab Locations



Annual Growth in Water Testing: 2011-2018



Water Tests Performed by the BWTF in 2018 (6,826 total)



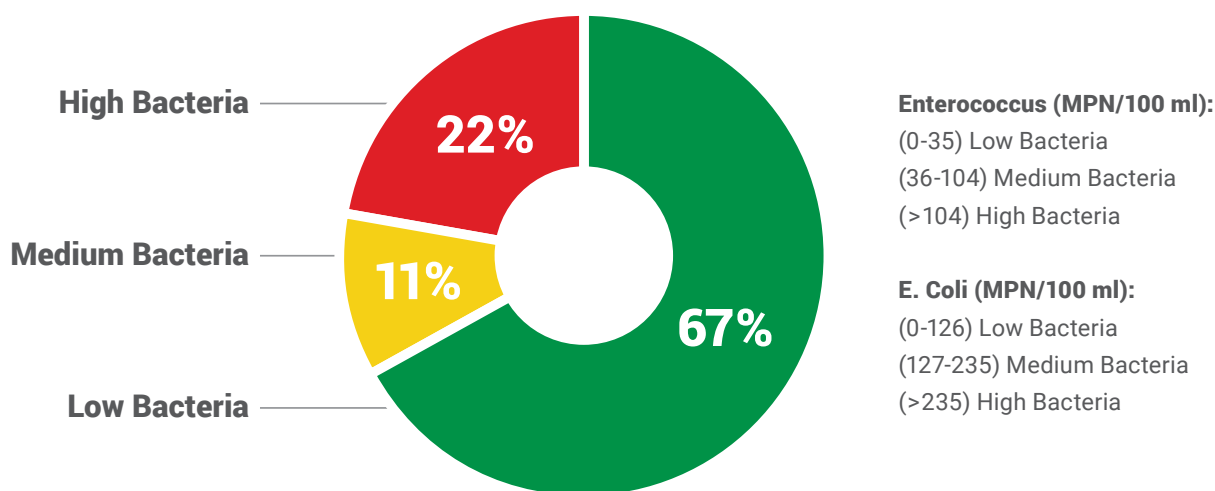
During 2018, we saw continued growth of this successful chapter-run program. There were 48 BWTF labs that processed 6,826 water samples collected from 474 distinct sampling sites. The above figures show how many water tests were performed by each chapter, which varies depending on the number of beaches monitored and whether the chapter samples on a monthly or weekly basis.

In 2018, eight new BWTF programs were established. In Florida, the Miami and Broward County chapters launched new BWTF labs. In Hawai'i, the Hilo Chapter started testing and the O'ahu Chapter relaunched their program after a temporary hiatus during 2017. In California, the Newport Beach and Orange County Chapters helped to establish new water testing programs in Irvine and at the Ocean Institute in Dana Point. The Ventura Chapter, which helped to establish the Blue Water Task Force 25 years ago, started a new lab at the local high school. The San Diego Chapter also launched two new BWTF labs at high schools to build awareness of the impacts of sewage pollution in the border region near Mexico. Read the case studies at the end of this report to learn more about how Surfrider chapters are using their BWTF programs to bring together their local communities to protect clean water and safe ocean recreation.



Above: San Diego BWTF volunteer, Ally Senturk, collects a sample from murky water pooling up at the beach.

Bacteria Levels Measured by the BWTF in 2018



Above: The Klamath River flows into the Pacific Ocean in California and shows the interconnected system of freshwater sources flushing out into the ocean.

The collective results from all the participating BWTF labs have remained relatively constant since we began compiling data in an annual report in 2011. Of the 6,826 water test results reported in 2018, 67% indicated low bacteria levels, 11% indicated medium bacteria levels, and 22% measured high bacteria levels that exceed the national water quality standard set by the EPA. These standards were established 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, which are influenced by stormwater runoff, or at beaches near these outlets. These results are 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 the 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 using native plants, building healthy soils naturally, and carefully shaping landscapes to slow down and retain rainwater, OFGs transform landscapes and hardscapes to reduce urban runoff, filter out pollutants, conserve water and create wildlife habitat. In addition, Ocean Friendly Gardens absorb carbon from the air and store it in the soil, which can help to reduce the impacts of climate change. Learn more about the benefits of Ocean Friendly Gardens at [Surfrider.org](https://www.surfrider.org).

The OFG program takes a [watershed approach](#) to protect local water supplies and prevent pollution from reaching the ocean. Whether you live inland or at the beach, your yard is a mini-watershed that can protect clean water through CPR (Conservation, Permeability and Retention). We all live upstream from the ocean!

Conservation

Reducing outdoor water demand and providing wildlife habitat with native and climate appropriate plants.

Permeability

Building healthy, living soil with compost and mulch to sponge up water and filter out pollutants.

Retention

Storing rainwater in the landscape to rehydrate watersheds and reduce local flooding concerns.



PROGRAM COMPONENTS

Each Surfrider chapter designs and implements their OFG program to meet local needs and leverage their available resources. 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 to teach classes and provide community outreach.



Neighborhood Walks

During Lawn Patrol neighborhood walks, participants start at an existing OFG to review the principles and practices implemented. Then they 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.



Policy Change

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

2018 PROGRAM ACTIVITY

During 2018, 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 yards using the watershed approach. Surfrider helped install 65 OFGs in 2018, transforming both public and residential spaces to become Ocean Friendly.



Each chapter designs its Ocean Friendly Gardens program to address the water quality issues of greatest concern locally and leverage their available resources and expertise. As native plants and water quality concerns vary by region, Surfrider's chapter-run OFG programs are varied and diverse as well. For instance, in Kaua'i, the chapter is working together with the University of Hawai'i Master Gardeners Program to provide advice to homeowners who want to transform their yards into Ocean Friendly Gardens. The Master Gardeners make recommendations for soil amendments, pest control, plant selection and organic lawn care. This information is used to help homeowners make adjustments to their properties to meet the OFG criteria. Each qualifying yard is then posted with an OFG sign, which can inspire others in their neighborhood to make similar changes.

Over on O'ahu, the chapter is teaming up with PermaBlitz Hawai'i to transform yards into sustainable gardens that absorb rain, provide beautiful native habitat and produce

fruit and vegetables for the homeowner. Learn more about Surfrider O'ahu's efforts in the case study to follow.

In the dry climate of Southern California, Surfrider's Ocean Friendly Gardens programs largely focus on reducing urban runoff and providing solutions for water conservation. Chapters are helping residents to remove their thirsty turf lawns and replace them with mulch and native or climate-appropriate plants. For instance, the Ventura Chapter installed a garden with students from the local high school and the local water provider's Water Wise Gardening program. They made this great [short video](#) of the installation and are promoting it to build awareness of how OFGs can capture and hold on to rain to protect local water supplies.

Surfrider chapters in Southern California are also advocating for OFG policy advancements. Following the success of [similar victories in San Diego and Los Angeles](#), the Long Beach Chapter worked with their county's water department this past year to include elements of the



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watershed approach in their turf removal rebate program. The Ventura Chapter has also been tackling another regional community issue by providing recommendations for installing [OFGs in Fire Hazard Zones](#). This guidance helps homeowners in neighborhoods that were affected by the Thomas Fire to revegetate their properties in a way that conserves water and makes the landscape fire resistant.

In the wetter climate of the Pacific Northwest, the Portland Chapter has been participating in the [City of Portland's Green Streets program](#). They have recruited volunteers to clean and maintain bioswales that capture road runoff.



On the East Coast, Surfrider chapters are also concerned with stormwater runoff and flooding during heavy rain events and coastal storms. In North Carolina, the Cape Fear Chapter hosted a [rain garden class and hands-on workshop](#) with the City of Wilmington and the New Hanover County Soil and Water District. They instructed area residents on how rain gardens can help prevent stormwater from polluting local waterways.

In Florida, the [growing problem with toxic algae blooms](#) is the main water quality concern throughout the state. Surfrider chapters are advocating for local ordinances on fertilizer use to reduce the amount of nutrients that are getting into waterways and fueling algae blooms. Ocean Friendly Gardening techniques are also being promoted to support yards and native gardens without the use of synthetic chemicals and fertilizers. Read more about Florida's algae crisis and Surfrider's efforts to promote community solutions in the following case study.



CASE STUDY

DEPOE BAY, OREGON

Empowering youth to become scientists and stewards of the Oregon coast.



The Blue Water Task Force (BWTF) program in Depoe Bay, Oregon, is making science fun and accessible for Lincoln County youth. Since the program's inception in 2010, more than 75 students have been trained in water quality testing methodology. Collectively, they have conducted 375 water tests to provide year-round information on the safety of Oregon's beaches. As the [state's monitoring program](#) is seasonal from May through September, the Depoe Bay BWTF program is currently generating the only water quality information available during the off-season at these beaches.

The Depoe Bay BWTF program is a unique collaboration between the Surfrider Foundation [Newport Chapter](#) and [Neighbors for Kids](#), a nonprofit organization that provides students with a safe and fun learning environment after school. Surfrider volunteers collect water samples on a monthly basis from [five beaches](#) that stretch from Depoe Bay to Road's End State Park in Lincoln City. All water samples are then processed in a lab that is set up at Neighbors for Kids.

Student participation in this water testing program is gaining traction. Each BWTF processing session consists of up to six students and there are often waiting lists.

Most of the student scientists range from 8-11 years old, including many young girls who are highly enthusiastic about the program. In fact, since 2015, 60% of the students participating in the water testing program have been girls, which is a shift from earlier years when a higher ratio of boys were signing up.

The Depoe Bay BWTF program was initiated by Larry and Nanci Brammer, who started their Surfrider journey with the [Florence BWTF program](#) in 2009. Larry is well-known within the Oregon BWTF scene for developing the "[No-Brammer](#)" [sampling method](#) that uses a fishing pole to collect samples on dangerous or hard-to-reach beaches. After a decade of service, the Brammers continue to volunteer their time to collect water samples, train and inspire students involved in the water testing program.

Karen Driscoll, a volunteer who helps to run Surfrider's BWTF lab at Neighbors for Kids, draws on her teaching experience to make science accessible and fun for students of all ages. When teaching scientific concepts to younger kids, she uses simple analogies, such as correlating the process of 'dilution' to mixing chocolate and white milk together. This allows the students to not only better understand what they are doing in the lab,



Above: Students participating in a surf camp hosted by Surfrider and Warm Current to promote healthy and active lifestyles for youth in the Pacific Northwest.

but also to share their own perspectives with Karen. For instance, a five-year old student once described unwrapping a piece of glassware while still keeping it sterile, by comparing it to “opening string cheese.”

While the water samples that the students process typically test clean with low bacteria levels, the outcomes can surprisingly disappoint the kids. Each month, Larry, Nanci and Karen explain that low readings are desirable because they show that the monitored beaches are safe for swimming. An atypically high reading, however, can cause all sorts of excitement in the lab and a lively discussion on potential sources of the bacteria in the water ensues. As a result, the inspiration and learning goes both ways. While the adults bring experience and wisdom to share, the kids continue to surprise their leaders with fresh insight and perspectives, which creates a rewarding experience for everyone.

Since 2016, Neighbors for Kids has also added a surf experience option to their summer camp with the help of the Surfrider Foundation and [Warm Current](#), an organization that promotes healthy, active lifestyles for youth in the Pacific Northwest. The surf camps have quickly grown from 30 kids to more than 100 each summer. While some of the first participating kids weren’t comfortable in the water and took their initial surfing lessons in life jackets, several have since grown into competent surfers and are training to become instructors themselves. Campers are also learning to be good stewards of the environment by participating in beach cleanups and learning about the marine life they observe along the coast. These experiences are helping to

foster a love for the beach and develop future stewards of Oregon’s beautiful coastline.

To make their programming, including BWTF water testing, accessible to the full community, Neighbors for Kids also offers scholarships to families who need assistance. Many of the participating students come from underserved populations, are in foster homes or may have behavioral issues at school. “They are all survivors,” said Heidi Lambert, Director of Operations for NFK. “This program gives them such a sense of self-confidence. Once they get just a little confidence in one area, it spills over.”

To see where the Blue Water Task Force is testing in Oregon, visit [Surfrider.org](#). Check out [Oregon Health Authority’s website](#) for information on the state’s seasonal beach monitoring program.

Thank you to the [Surfrider Foundation Newport Chapter](#) and [Oregon Coast Aquarium](#) for financial and logistical support of the Depoe Bay Blue Water Task Force.

CASE STUDY

O'AHU, HAWAII

Testing the waters and engaging community volunteers in clean water solutions to protect public health and safe ocean recreation.



Hawai'i is an outdoor playground for those who love the ocean and coasts. Surfing, swimming, diving, paddling and beachgoing are just some of the recreational pursuits that attract people from around the world to the Hawaiian Islands. Unfortunately, the clear blue, tropical waters that surround the islands are not immune to the pollution that comes along with increasing growth and development.

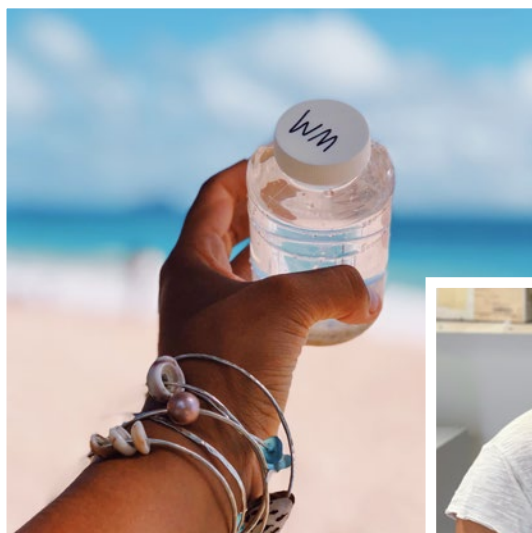
Hawai'i's beaches and recreational waters are affected by urban and agricultural runoff. In addition, many neighborhoods are still serviced by cesspools. These outdated and inadequate wastewater systems leach nutrients, bacteria and other pathogens into ground and surface waterways. Cesspools and failing sewage infrastructure are a major concern during rain and flooding events. The [Hawai'i Department of Health \(HDOH\)](#) issues [Brown Water Advisories](#) to warn the public of potential dangers.

The Hawai'i Department of Health also runs a beach water quality monitoring program, funded in part by their federal

BEACH Act grant, to protect public health at the beach. However, with more than 400 public beaches, 300 miles of coastline and a year-round beach season, it is a challenge for the state's program to adequately cover all beaches throughout the islands.

As a result, the [Surfrider Foundation O'ahu Chapter](#) has stepped up to help protect clean water and healthy beaches. For years, the O'ahu Chapter has helped to host and share state-generated water quality results and beach advisories. With a team of dedicated and highly knowledgeable volunteers, the chapter's Blue Water Task Force (BWTF) has also grown into a well-established citizen science program. By sampling beaches that are not covered by the state's program, the O'ahu BWTF is generating valuable water quality information to inform safe beachgoing.

Surfrider volunteers are currently monitoring fifteen beaches on a biweekly basis and processing their water samples at a Hawai'i Pacific University lab. Many of the



chapter's sampling sites are located in areas with high concentrations of cesspools, or at beaches that are impacted by runoff. Watch this short video to hear Surfrider O'ahu volunteer, Christina Comfort, describe the benefits of the BWTF program:



While bacteria levels at most beaches that are tested by the chapter are generally safe during good weather, two sites have shown concerning results. The stream outflows at [Kahalu'u Park](#) and [Chocolates surf break](#) located at the Anahulu River outfall in Haleiwa, have consistently failed to meet health standards. Both sites are located in watersheds with high cesspool densities. The chapter plans to work

together with the Department of Health to warn the public of polluted conditions at these beaches. Visit [Surfrider.org](https://www.surfrider.org) to view all of the O'ahu Chapter's water quality data and check for beach advisories issued by the state [here](#).

In addition to testing the waters, Surfrider is also leading the charge to address the major sources of pollution in Hawai'i. Through their Civics is Sexy program, the O'ahu Chapter has trained community members to be informed and effective advocates for clean water. This program has resulted in three state bills aimed at reducing pollution from Hawai'i's existing 88,000 cesspools, in addition to a new pioneering ban on sunscreens that harm coral reefs.

The O'ahu Chapter is also using Surfrider's Ocean Friendly Gardens program to help solve water quality problems created by flooding and stormwater runoff. Together with Permacult Hawaii, the chapter organizes a workday, or 'Surfblitz,' where dozens of volunteers work together to renovate a residential yard. Their efforts result in sustainable gardens that absorb rain, provide beautiful native habitat and produce fruits and vegetables for homeowners. Each work day is a great opportunity for new volunteers to learn about holistic and sustainable gardening techniques as they work alongside experts and experienced volunteers. Surfblitz



Above: Surfrider and Permablitz Hawai'i volunteers install a terraced vegetable garden.

events are publicized through social and local media to further increase the outreach potential of this program. Best of all, these events are a lot of fun! Check out this short video that explains the benefits of this program:



This upcoming year, the O'ahu Chapter will be tackling their biggest project yet to install the Kaka'ako Ocean Friendly Garden in loving memory of volunteer, Heather Riley. This project will convert a long stretch of commercial land,

donated by Kamehameha Schools, into a thriving and productive garden for the community. When complete, this Ocean Friendly Garden and community gathering site will inspire urban water conservation, food security, cultural education, native plantings and hands-on learning. Most importantly, the garden will be a place for the families in this densely developed urban area to connect with the land, or 'aina.' Surfrider and Permablitz Hawai'i volunteers have already started clearing and preparing the soil for planting. The community is looking forward to seeing this site fully transformed into a beautiful native garden and cultural space in the coming months.

Thank you to the Harold K.L. Castle Foundation for their support of the O'ahu Chapter's Ocean Friendly Gardens program.

CASE STUDY

PALM BEACH COUNTY, FLORIDA

Generating critical water quality information to keep beachgoers safe and promoting community-based solutions to the toxic algae crisis.



Florida is well-known for its year-round warm climate and beautiful, sandy beaches. While beach tourism drives the state's economy, people who visit and live in the Sunshine State are losing the long-standing recreational opportunities that they cherish. Ongoing water pollution and harmful algal blooms, including red tides and toxic blue-green algae, are putting public health at risk and causing massive die-offs of fish, marine life and sea turtles.

Red tides were [particularly devastating in 2017 and 2018](#), as coastal communities along the Gulf Coast of Florida suffered through an unusually persistent and toxic [red tide](#) that lasted for more than a year. Bloom conditions reached as far as the Atlantic Coast late last summer, which caused beach closures and fish mortalities. Public health was also affected as far as a mile inland through the release of airborne toxins from the blooms.

The problems associated with blue-green algae blooms, or [Cyanobacteria](#), received massive media attention during the summer of 2016. Florida's governor declared a [state of emergency](#) and beaches in several East Coast counties were closed over the July 4th holiday weekend. This earned

the affected stretch of coast the dubious nickname of 'Guacamole Coast.' While much of the state has experienced a temporary reprieve from the impacts of red tides and blue-green algae blooms this winter, both are likely to return as temperatures rise this spring.

While the causes of [Florida's algae woes](#) are complicated and long-standing, they are primarily attributed to mismanagement of the flow of freshwater from source to sea by the state and federal governments. For instance, cyanobacteria proliferate in the nutrient-rich fresh waters of Lake Okeechobee in Central Florida. When water levels rise during the rainy summer months, polluted water from the lake is intentionally discharged into the St. Lucie and Caloosahatchee rivers to relieve flooding pressures. Unfortunately, these releases also devastate the downstream river, estuary and coastal ecosystems by spreading toxic blue-green algae blooms.

In addition, there has been a failure to enact and enforce effective nutrient pollution controls in Florida. Policies need to be implemented that would limit the amount of phosphorus and nitrogen, which fuel harmful algal blooms,



Above: A kayaker paddles through water covered in algae.

in freshwater systems and at the coast. While big agriculture, developers and industry have been taking advantage of Florida's relaxed environmental regulations, the environment, public health and Florida's valuable tourism-based economy have been paying the cost.

Compounding these threats to public health, the state legislature also eliminated funding for the [Florida Healthy Beaches Program in 2011](#). Florida now relies solely on a federal BEACH Act grant to fund beach water quality monitoring and public notification programs. This has forced the Department of Health to reduce the number of beaches they test, sample less often and suspend all beach monitoring between November and March in the northern part of the state.

The resulting gaps in the state's program motivated [Surfrider's Palm Beach County Chapter](#) to launch their Blue Water Task Force (BWTF) water testing program in 2016 with generous lab space provided by the Loggerhead Marinelife Center. The chapter started by testing three popular recreational sites on a weekly basis to supplement the information that is provided by the state every two weeks. Their first monitoring locations included a boat launch site on the Loxahatchee River; a beach located within Jupiter Inlet at Dubois Park that is popular with families and snorkelers; and an Atlantic Ocean beach at the Juno Pier.

In 2017, the chapter moved their BWTF lab to [Jupiter High School](#). All water samples are now processed by students from the Green Schools Club. This new collaboration has not only served as a great solution for the chapter's need for lab space, but it has also been a positive way to involve students in local water quality issues and environmental science.



In 2018, the Palm Beach County Chapter started monitoring two new sites, including Ocean Reef Park on Singer Island, and Phil Foster Park, a beach on the intercoastal waterway that is heavily used by snorkelers and families with young children. The chapter also expanded their BWTF program by setting up a new lab at Forest Hill High School. Environmental Academy students at this school are now testing three new beaches in Central and Southern Palm Beach County.



Above: Native plants bring beauty and habitat value to the Ocean Friendly Garden installed at MacArthur State Park in Palm Beach County.



In addition to sharing their weekly water quality results with members, the Palm Beach County Chapter is helping to inform the local community whenever harmful algal bloom conditions affect safe aquatic recreation or beachgoing in their area. The chapter's efforts have inspired other chapters in Florida, including the Broward County and Miami chapters, to start water testing programs as well. The Palm Beach County Chapter's work has also led to a statewide campaign to [restore state funding for the Florida Healthy Beaches program](#) to improve public health protection at the beach. Visit the [BWTF website](#) to see where Surfrider is testing in Florida and visit the [Florida Healthy Beaches Program website](#) to view all state-generated water quality data and beach advisories.

The Palm Beach County Chapter's [Ocean Friendly Gardens](#) program also complements efforts made by Surfrider activists to advocate for federal, state and local solutions to harmful algal blooms in Florida. Ocean Friendly Gardens are maintained without the use of chemical fertilizers, which contribute to high nutrient conditions and cause algae to bloom in many waterways. Ocean Friendly Gardens instead rely on native plants and healthy soil that is built naturally with compost and mulch, to soak up rain and reduce polluted runoff. This past year, the chapter installed a native garden

that captures rain from the roof of the MacArthur State Park ranger station. This provides a great outreach tool for more than 60,000 people that visit the park each year.

Additionally, Surfrider activists across the state will be supporting state and local legislation this year to reduce the amount of fertilizers that pollute Florida's waterways. They will also be promoting [actions that anyone can take](#) to make their own yards more Ocean Friendly. If there is a silver lining to the devastation that toxic algae blooms have brought to Florida this past year, it may be that Floridians and those elected to public office are hopefully ready to make positive changes to protect clean water for this and future generations.

Special thanks to the Henry and Ruth Blaustein Rosenberg Foundation for their support of the Palm Beach Chapter's Blue Water Task Force.

CASE STUDY

SAN DIEGO, CALIFORNIA

Generating Water Quality Information to Protect Beach Towns from Border Sewage.



The Surfrider Foundation San Diego Chapter provides water quality information to expand the coverage of agency water testing programs, empower and engage the local community to protect their beaches, and raise awareness of regional water quality issues. Most notably, the chapter's Blue Water Task Force is shedding light on the severity of cross-border sewage pollution and is helping to drive community solutions.

Similar to many coastal cities, San Diego has a highly developed watershed with a slurry of water quality problems associated with stormwater runoff, sewage outflows and aging sewage infrastructure. San Diego is also a border town neighboring the Mexican city of Tijuana. Over the years, Tijuana's rapid population growth has outpaced its infrastructure capacity, causing frequent sewage spills into international coastal waterways.

In addition to spills, more than 20 million gallons of sewage per day are discharged into the Pacific Ocean just five miles south of the U.S.-Mexico border. This partially treated effluent regularly flows north and pollutes beaches in

southern San Diego County during summer south swells. Sewage contamination problems are so severe and frequent that beaches in the southern-most town of Imperial Beach were [closed for roughly half of every year](#) from 2015-2017. In fact, a massive sewage spill in 2017 dumped about [143 million gallons](#) of raw sewage into the Pacific Ocean near surfing and recreational areas in San Diego.

Despite the devastating environmental and public health impacts that these ongoing sewage discharges are causing, minimal efforts have been made by government officials to address these issues. The fact that the most heavily impacted community of Imperial Beach has a poverty rate of approximately 20% raises environmental justice concerns as well. Unfortunately, water quality conditions continue to worsen in this border region and responsible federal agencies, including the International Border Water Commission, have failed to take effective action on the issue.

It was this inaction by government agencies that prompted the Surfrider Foundation to step in. The [San Diego Chapter](#)



Above: A Mar Vista High School student collects a water sample at the Imperial Beach Pier. And to the right, San Diego BWTF volunteer Elijah Garcia teaches students about water testing at the La Jolla Public Library.

and South Bay communities have teamed up to develop the [Clean Border Water Now Campaign](#). The goal of this collaboration is to empower local communities on both sides of the border to take a stand against these ongoing sewage problems and to demand much-needed infrastructure upgrades.

The San Diego Chapter established its first Blue Water Task Force (BWTF) water testing lab at Mar Vista High School in Imperial Beach in 2018 to measure bacteria levels in the border region. Since then, two additional labs have been launched, at Coronado High School and at the chapter's office, to monitor beaches further north. Together, their efforts are making a big splash. The student-led BWTF labs have been featured in prominent local news outlets, such as [The Coronado Times](#) and [San Diego 7 News at 4](#), spreading critical awareness about regional water quality issues.



Surfrider volunteers collect water samples every Thursday at ten popular beaches and surf breaks from Imperial Beach to Tourmaline Surf Park in Pacific Beach. The San Diego County Health Department generally tests on Monday or Tuesday, so the chapter's BWTF is providing timely water quality information to inform safe ocean recreation for the weekend. Water test results are [posted online](#) and are included in a Weekend Beach Report that is broadcasted widely via social media. To view a map of the chapter's sampling sites and their water test results, visit the [Blue Water Task Force](#) website, or [sign up to receive email updates](#). Additional water quality information and current advisories issued by the county are available [here](#).

The San Diego Chapter is also leveraging its BWTF program to engage the local community. For example, water quality experts are invited to speak at the chapter's quarterly BWTF meetings. Surfrider volunteers have also given presentations at local universities and even hosted a community water quality lab at the La Jolla Public Library, where they engaged local students in hands-on science with [The Wet Lab](#).

In addition, the chapter is supporting other research efforts to better understand the complex, binational sewage problem that is affecting the region, including a sewage source tracking study that is being planned by the [Southern California Coastal Water Research Project](#). In order to develop effective community solutions to the sewage problem, the chapter is also connecting diverse groups



and interests across the region. For instance, the San Diego BWTF routinely works with Mexico-based nonprofit organizations to conduct a [coordinated water quality sampling effort](#) of beaches in the Tijuana River Watershed on both sides of the border.

The chapter is also working closely with the U.S. Border Patrol Council to document pollution events and bring attention to this national security problem. Border patrol agents have expressed concern about the long-term health complications of direct exposure from polluted waters in the Tijuana River Valley. For instance, cases of Hepatitis A, MRSA, and flesh-eating bacteria have been linked to exposure in the South Bay. [Watch these videos](#) to hear border patrol agents describe the dangerous conditions they have to work in and the impact it has had on their health.

As a result of all of these documented impacts, Surfrider has turned toward the courts to [file a citizen suit against the International Boundary and Water Commission](#), to prompt the agency to address their numerous violations and the harm that has impacted the local community. This year, the chapter hopes to see their efforts to build wide-scale community awareness of the international sewage and pollution problems lead to funded solutions that will restore clean water and safe beach experiences to the border region.

The San Diego Chapter is truly leading a united force that's standing up for clean water. Special thanks to Las Patronas,

Lionfish, and San Diego Gas & Electric for their support of the San Diego Chapter's Blue Water Task Force and Clean Border Water Now campaign.



Above: A San Diego Chapter volunteer speaks to the crowd at a community rally for Clean Border Water Now in Imperial Beach, CA.



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