CLEAN WATER REPORT 2019



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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 and reduce pollution so it is safe to surf, swim and play in the ocean and our coastal waterways. 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 Threats

Every day, water quality at our beaches is threatened by pollution from urban and agricultural runoff, sewage, animal waste and industrial discharges. These threats result in 20,000 health advisories each year in the U.S. to protect beachgoers from exposure to bacteria and other illnesscausing pathogens. Pollution also fuels harmful algal blooms that endanger public health and wreak havoc on coastal ecosystems.

Despite these dramatic threats to public health and coastal communities, the current federal administration is scaling back funding and enforcement of water quality regulations and programs. Large and sweeping cuts in funding for the Environmental Protection Agency (EPA) and the National Oceanic and Atmospheric Administration (NOAA) – the federal agencies responsible for protecting clean water and healthy coasts – are also being considered. This includes the proposed total elimination of the BEACH Act, which provides critical support to coastal states to monitor water quality at beaches.



Surfrider's Approach

Everyone deserves 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 advocate for strong laws and sufficient funding to monitor and protect water quality. We ensure that people have access to the information they need to protect their health and the health of their families when recreating at the beach and in our coastal waterways. When we see information gaps in government testing programs that leave public health unprotected, we seek to meet those community needs with our Blue Water Task Force citizen science program.

Through a large network of volunteer-led chapters, we are building awareness of pollution problems and bringing together local stakeholders to protect clean water. Our Ocean Friendly Gardens program is educating communities and local officials on the actions that can be taken in our own yards and in our public spaces to reduce the amount of pollution that flows into local waterways and out to the beach.

The goals of one of our priority national campaigns, Stand Up for Clean Water, are to protect public health and clean water through the proper implementation of the Clean Water Act, and to advocate for adequate funding for the EPA. The 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 Trump administration has proposed massive funding cuts for the EPA over the past four years. Multiple actions have also been taken to roll back protections under the Clean Water Act and other federal environmental laws. In fact, at the end of 2019, the New York Times reported that 95 environmental rules and regulations have been rolled back or completely repealed. So nearly a hundred laws that were meant to protect clean water, air and a healthy environment for all Americans are now somewhere in the process of being scaled back, weakened, or completely thrown out.

One administrative action with major consequences for water quality protections across the country is the Waters of the U.S. Rule, released by the EPA in January earlier this year. This 'Dirty Water Rule' strips away Clean Water Act protections for more than half of our country's remaining wetlands and millions of miles of streams that provide drinking water to 117 million Americans. While Surfrider and a national coalition of environmental, recreation and business groups worked tirelessly for the past two years to educate the public and submit comments to convince the EPA to reconsider this proposal, the 'Dirty Water Rule' will now severely limit our ability to regulate and stop pollution from poisoning our country's waterways and watersheds. It is expected, however, that the implementation of this rule will be held up in the courts. Since January, resolutions have been submitted in both the House of Representatives and the U.S. Senate to reaffirm the importance of clean water to public health, ecosystems and our economies. Surfrider is asking all members of Congress to sign on to these resolutions and defend the Clean Water Act. Join Surfrider in our efforts to #StandUpForCleanWater.

Surfrider is also looking toward the courts to ensure proper enforcement of the Clean Water Act. For example, we entered into a favorable settlement agreement with the Agribusiness Development Corporation in December 2019 to stop water quality violations that affect the nearshore waters on the western side of Kaua'i. The violations allowed the daily release of millions of gallons of water contaminated with pesticides, sediment and heavy metals through drainage ditches and into the Pacific Ocean.

In addition, the U.S. Supreme Court has just ruled in favor of upholding Clean Water Act protections in a lawsuit that we filed with a team of co-plaintiffs to stop the Lahaina Wastewater Reclamation Facility from injecting treated sewage into Maui's groundwater. The contaminated groundwater seeps into the Pacific Ocean, polluting U.S. waters and harming nearby coral reef ecosystems. We are pleased that the Supreme Court's judgement upholds the Clean Water Act's ability to protect our waterways from direct and indirect discharges of pollution. Learn more about the Clean Water Act "case of the century" on Surfrider's Coastal Blog.

We are continuing our litigation against U.S. Steel for their Clean Water Act violations, including illegal discharges of highly toxic and carcinogenic hexavalent chromium into Lake Michigan. The 'Southend' of Lake Michigan is a unique spot for surfers and other recreationists, where massive and aging industrial facilities sit among rare natural beauty and great waves. Surfrider's action to hold U.S. Steel accountable for its violations motivated state and federal regulators to take similar actions to hold the company accountable. It also sent 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. Learn more about this lawsuit and the Chicago Chapter's efforts to protect water quality across the region in the case study at the end of this report.



Top & Right: Surfrider volunteers fight for clean water at the U.S. Supreme Court. Bottom Left: Activists in Maui join together in support of clean water.



OUR PROGRAMS

This 2019 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 demonstrating how Surfrider chapters apply 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 is Surfrider's citizen science program that provides critical water quality information to protect public health at the beach. Surfrider chapters use this program to raise awareness of local pollution problems and to bring together communities to implement solutions.





Ocean Friendly Gardens

Ocean Friendly Gardens 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 more than 25 years ago, Surfrider volunteers have been out in their communities testing water guality at the beach. Now a large national network with nearly 55 chapter-led labs, the BWTF is measuring bacteria levels at more than 450 ocean, bay, estuary and freshwater sampling sites across the country. Most chapter water testing programs are designed to fill in the gaps and extend the coverage of state and local agency beach programs. Surfrider citizen scientists are testing beaches that are not covered by agencies and we are monitoring potential sources of pollution, such as stormwater outlets, rivers and creeks that discharge onto the beach. The BWTF is also in operation year-round, providing public health protection through the off-season when lifeguards leave the beach and health officials stop collecting water samples.

In addition, the Blue Water Task Force is cultivating the next generation of coastal defenders. Students help to collect and process water samples for more than half of our BWTF programs nationwide and gain valuable field and laboratory experience along the way. Many former students go on to pursue careers in conservation and environmental science fields. All BWTF test results are compared to water quality standards set to protect public health in recreational waters and are posted on Surfrider's website. Chapters also share their water quality data through social media, email and community presentations to provide beachgoers with the information that they need to know where it's safe to surf, swim and play in the water.

When our BWTF results demonstrate long-term or seasonal trends of elevated bacteria levels, our chapters apply their data to build community awareness and motivate local decision-makers to take action and fix the sources of pollution. For example, the Newport and North Coast BWTF programs in Oregon have been highly successful in forming positive working relationships with other community groups and government agencies to raise awareness of local pollution problems at Nye Beach and Cannon Beach. With persistence, Surfrider volunteers have successfully advocated for pollution source investigations, in addition to sewage and stormwater infrastructure improvement projects in both communities.

The Eastern Long Island Chapter and their community partners in New York have also applied their water



Above: The San Diego Chapter's team of committed volunteer citizen scientists and educators.

quality data to inform pollution source tracking studies and prioritize placement of solutions. Many chapters in Florida, Puerto Rico, Washington, California and Hawai'i are working hard to build community awareness of pollution problems so they can see similar results. While it can take multiple years, even a decade, from the first discovery of new pollution concerns until enough political will is generated to drive solutions, the Surfrider Foundation is in it for the long-haul. Blue Water Task Force volunteers are committed to not only measuring water quality conditions at the beaches they love, but also to rallying their communities around protecting clean water for future generations.

As a result of close community connections and solid working relationships with local agencies, many chapters' BWTF programs have also been able to respond quickly to community needs following natural disasters, harmful algal blooms and other emergencies. 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 and government testing programs were suspended.

In California, the Isla Vista Chapter at the University of California, Santa Barbara, adjusted their water sampling program to better understand the impacts of mudslides on local water quality conditions following the Thomas Wildfire. They coordinated with other local monitoring organizations to add sampling sites, and test more frequently to meet community concerns and inform safe ocean recreation. Read more about these efforts in the case study at the end of this report.

Sewage spills have been plaguing coastal waters across South Florida this past year. Last summer, BWTF volunteers from the Miami Chapter were able to respond quickly to high bacteria counts that they measured after a sewage line break spilled into Biscayne Bay. The chapter was out testing twice before the state's beach program was able to test even once. The chapter's data also showed that more beaches were affected by the spills than were covered by the beach advisory issued by the City of Miami Beach. The Miami Chapter shared all of this critical public health information with the community in their weekend water quality report through social media and email.

The Broward County BWTF program has also expanded this past year to respond to the concerns of paddlers, surfers and other recreational interests after several large-scale sewer breaks spilled sewage into local waterways.

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 test results are available on the BWTF website or you can access your local agency beach advisories at Beachapedia.org.

2019 PROGRAM ACTIVITY & RESULTS





Annual Growth in Water Testing: 2011-2019

Water Tests Performed by the BWTF in 2019 (7,707 total)



During 2019, this successful chapter-led program continued to grow. There were 54 BWTF labs that processed 7,707 water samples collected from 484 distinct sampling sites. The above figures show how many water tests were performed by each chapter, which vary depending on the number of beaches monitored and whether the chapters sample on a monthly or weekly basis.

In 2019, eight new BWTF programs were established. In Florida, the Sebastian Inlet Chapter launched a new program and the Palm Beach County Chapter established a second lab at a local high school. The New Hampshire Chapter became the second BWTF program in the Northeast region when they began testing in cooperation with the New Hampshire Department of Environmental Services during the fall of 2019. In California, the Sonoma Coast Chapter launched a new BWTF program with a local high school and the Marin County Chapter established their third high school-based lab. The Ventura County and San Diego County chapters both expanded their water testing programs and launched a second and third lab, respectively. On Hawai'i Island, the Kona Chapter also started a new BWTF testing program in 2019.

Read the case studies at the end of this report to learn how Surfrider chapters are using their BWTF programs to bring together their local communities to protect clean water and safe ocean recreation.



Above: Chapter-led BWTF programs fill in the gaps of agency-run beach monitoring programs to inform beachgoers of where it's safe to surf, swim and play in the water.

Bacteria Levels Measured by the BWTF in 2019



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 data in an annual report in 2011. Of the 7,707 water test results reported in 2019, 68% indicated low bacteria levels, 11% indicated medium bacteria levels, and 21% 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 (OFG) 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.



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-ityourselfers 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.

2019 PROGRAM ACTIVITY

During 2019, 23 Surfrider chapters ran OFG 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 to install 77 OFGs throughout the year in both residential yards and public spaces.



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. In the relatively wet 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.

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. In 2019, the Los Angeles Chapter and their OFG program partner SELVA EcoGardens created a series of four videos that instruct homeowners on how to remove their thirsty turf lawns and replace them with mulch and native or climate-appropriate plants. Check out the first video below or click here to access the entire series.





In Florida, toxic algae blooms, made worse by elevated levels of nutrients from fertilizers, is the main water quality concern throughout the state. Surfrider chapters are promoting Ocean Friendly Gardening techniques to teach community members how to incorporate more native plants and maintain their yards without the use of synthetic chemicals and fertilizers. The OFG program was more active in Florida than in any other state in 2019, with the Sebastian Inlet and Suncoast chapters responsible for 59 of the 77 gardens installed and yards converted program-wide. Read more about Florida's algae crisis and the Suncoast's efforts to convert entire neighborhoods into Ocean Friendly Gardens in the following case study.

The largest garden was installed by the O'ahu Chapter in Hawai'i. Together with their partners at Permablitz Hawai'i, chapter volunteers have converted 33,000 square feet of commercial land donated by Kamehameha Schools into a thriving and productive community garden. The Kaka'ako OFG is a beautiful gathering site that is reducing urban runoff and serves as a living laboratory to build awareness of native Hawaiian plants and traditional cultural practices. With many fruit and vegetable-bearing plants, the garden also helps support local food security. Most importantly, the garden is a place for the families in this densely developed urban area to connect with the land, or 'aina.'





Above: Volunteers transform a barren lot in Honolulu, HI into the Kaka'ako Ocean Friendly Garden that is now a source of local food and native plants.



CASE STUDY CHICAGO, ILLINOIS

The Chicago Chapter stands up for clean water along the 'Southend' of Lake Michigan.



The Surfrider Foundation Chicago Chapter is addressing decades-long industrial water pollution violations across southern Lake Michigan with its 'Southend' Water Quality campaign. Through the use of research, legal action, media and advocacy, the chapter and its local partners are taking aim at specific industrial polluters and working to address the failure by the state and federal governments to properly enforce the Clean Water Act.

At the south end of Lake Michigan, just east of Chicago in Portage, Indiana, surfers can expect to find the best waves coming from the north. It takes guts to be a Great Lakes surfer here, not just because of the cold water temperatures in winter and spring but also because surfing in the shadow of industry can be a dicey proposition. This same stretch of coastline has housed numerous industrial facilities for many decades, from steel manufacturers to chemical companies. The problems arise when these industries disregard their neighbors in the community and dump toxic chemicals into the lake in violation of their Clean Water Act permits. Violations have serious health implications for the beachgoing public and the millions of people who rely on Lake Michigan for their drinking water.

After learning about various health issues affecting 'Southend' surfers - from rashes to urinary tract infections and even more serious conditions - Surfrider's Chicago Chapter, led by Chapter Chair Mitch McNeil, introduced a group of affected surfers to the lawyers at the Abrams Environmental Law Clinic at the University of Chicago Law School. Together, they began investigating the potential causes of the murky waters and recreational illnesses. As a result, the 'Southend' Water Quality Campaign began. Through their research, the group determined that a number of the industries bordering the lake had ongoing and repeated Clean Water Act violations that were being underenforced or not enforced at all. However, a solution was not readily at hand due to the broad scope of the problem and number of different companies that were at fault.

The campaign took on a new level of urgency when U.S. Steel spilled approximately 350 pounds of chromium into a small waterway that feeds directly into Lake Michigan in April 2017. Nearly 300 pounds of this spill were highly toxic and carcinogenic hexavalent chromium! The chapter's collaboration with the Abrams Law Clinic then shifted from information gathering to litigation, seeking to force U.S. Steel to address and fix the problems that caused the massive spill.

More specifically, in November 2017, the Surfrider Foundation, represented by the Abrams Environmental Law Clinic, sent its Notice of Intent to Sue U.S. Steel. This prompted the City of Chicago to send a similar Notice of Intent to Sue, incorporating and explicitly relying on Surfrider's notice. After waiting the required 60-day notice period, the chapter filed a citizen suit under the Clean Water Act against U.S. Steel as the Environmental Protection Agency and Indiana Department of Environmental Management failed to take enforcement action against the company. Surfrider's lawsuit made headlines, appearing in the Chicago Tribune and other national and regional media outlets. One week later, the City of Chicago filed suit as well, and the lawsuits were eventually consolidated. The federal and state governments ultimately took action to sue U.S. Steel and Surfrider intervened in their lawsuit to ensure that our objectives and interests were represented in the governments' case.

Surfrider's main objectives in the litigation include rectifying the operations and maintenance issues at U.S. Steel's facility that are causing repeated violations, such as the large hexavalent chromium discharge. We are also seeking to adequately hold this massive company accountable and deter carelessness and future violations. Because of the delay in public notification that occurred when the large hexavalent chromium spill occurred, Surfrider is advocating for rapid public notification when spills happen so that people drinking the water and recreating in the area are protected. In addition, Surfrider seeks to secure a comprehensive monitoring study to improve our understanding of the water quality problems and public health risks across the south end of Lake Michigan. These objectives have taken on even stronger importance with violations from U.S. Steel continuing to occur over the course of the litigation and with neighboring industry having their own newsworthy spills.

Throughout the campaign, Surfrider has worked to make sure that the media has been engaged and updated on actions along the way, keeping a steady drumbeat of coverage and commentary to keep the public informed. The chapter has also expanded its efforts to work with local partners to address failures and accountability of both regulators and industry in terms of improving water quality along the south end of Lake Michigan. We are hopeful that the outcome of the Chicago Chapter's lawsuit against U.S. Steel will get us closer to our goal of protecting clean water and safe recreation in Lake Michigan.



Above: A surfer rides the waves on the 'Southend' of Lake Michigan

CASE STUDY MIAMI & SUNCOAST CHAPTERS, FLORIDA

Surfrider's chapter network tackles water quality challenges head-on across Florida.



Florida's beaches and waterways have been suffering in recent years from outbreaks of toxic, blue-green algae blooms and red tides. The water quality conditions that are fueling and sustaining these harmful algal blooms are the result of several causes, including the disruption and diversion of freshwater flows from Lake Okeechobee and its natural course south through the Everglades; warming water temperatures; and the overloading of fresh and marine waters with nutrient pollution from agricultural runoff, lawn fertilizers and sewage.

Coastal communities along both the Gulf and Atlantic coasts suffered through unusually persistent red tides during 2017 and 2018. Blue-green algae blooms, or Cyanobacteria, devastated freshwater systems in 2016 and even resulted in beach closures in several East Coast counties over the July 4th holiday weekend. Both types of blooms put human health at risk and often result in major fish kills and mortalities of marine mammals, birds and other sea life. Watch this short video to learn more about Florida's algae woes.





Above: Red tides are devastating for fish and wildlife and cause health impacts for humans as well.

The good news is that people are paying attention to the disruption and harm that water pollution is having on their everyday lives and are ready to do something about it. In 2019, the Surfrider Foundation successfully advocated for the state to allocate \$500,000 to expand its Florida Healthy Beaches water quality monitoring and public notification program. This program alerts beachgoers when pollution levels put public health at risk. The Governor also convened Task Forces to identify research needs and seek science-based solutions for both blue-green algae and red tides by addressing agricultural runoff, stormwater and wastewater infrastructure needs. In addition, the Tamiami Trail bridging project was fully funded by the federal government and state legislature. This allows 6.5 miles of roadway to be elevated to restore water flow from the northern Everglades through the "river of grass" and ultimately, out to Florida Bay.

The Surfrider Foundation's network of 11 chapters in Florida has stepped up to the plate to ensure that beachgoers have the information they need to stay safe through the Blue Water Task Force program. Surfrider chapters are also building awareness of sustainable landscaping practices to support clean water locally with the Ocean Friendly Gardens program.

The Miami Chapter's Blue Water Task Force

Miami, and much of South Florida, has a long history of sewage failures that impact local water quality, ecosystem health and the safety of beachgoers. Surfrider Miami launched their Blue Water Task Force (BWTF) water testing program in March 2018 to better inform beachgoers of the risks posed by sewage at the beach. The Miami Chapter established their sampling schedule to increase the coverage of the state's testing program. The Florida Healthy Beaches program collects water samples from Miami's beaches every Monday as part of their weekly water quality monitoring program and the chapter tests later in the week on Thursdays. The Surfrider Miami Chapter sends out a weekly water quality report through email and social media to inform safe beachgoing every weekend. The chapter's water test results are also available on Swim Guide and Amazon Alexa devices.

The Miami Chapter's BWTF program originally covered five public beaches, from 1st street to 93rd street. However, high public interest and support for the program has allowed them to expand to test seven additional sites, both further north into the city of Sunny Isles Beach, and south to the barrier island locations of Virginia Key and Key Biscayne.

During the first week of August last summer, chapter volunteers collected water samples for their regular weekly sampling run on Thursday morning. They learned later that a sewage line break had occurred the night before, spilling into Biscayne Bay. The Miami Chapter's BWTF measured high bacteria levels at nearly all of their Atlantic Ocean beach sites that Thursday, which extended well beyond the area covered by beach advisory issued by the City of Miami Beach. After reading the alarming results, they resampled again on Saturday. All of their test results and the No Swim Advisory issued by the city were then shared in two different weekend water quality reports to keep beachgoers updated on conditions at the affected beaches. This all took place before the state program drew their first samples the following Monday morning, well after the sewage line rupture. This sewage spill event shows how valuable it can be to have citizen science programs on the ground, ready to respond to pollution issues that affect public health. The Miami Chapter was able to provide more information in a timely manner on the impact of this spill at ocean beaches where people are recreating.

Meanwhile, sewage spills and breaks continue to occur across South Florida and the Miami Chapter is making plans to further expand their water testing program this year. The chapter will be setting up additional water testing equipment in a lab space hosted by the University of Miami's Rosentiel School of Marine and Atmospheric Science on Virginia Key. They will begin processing samples from their most southern sites at this new lab and will be able to add a few more sites



Above: BWTF volunteer heads to the water to collect a sample while double red flags warn of sewage-contaminated waters.

from Key Biscayne and southern portions of Biscayne Bay. This new lab location also brings the chapter access to research scientists and highly qualified graduate students who have already shown interest in helping to collect and process water samples.

View all of the Surfrider Miami Chapter's sampling locations and their test results on the BWTF website. Keep up with local happenings through the chapter's Facebook page. Special thanks to Christian De la Iglesia and F1rst Surf Shop for hosting the chapter's first lab to launch their program and to Gulliver School for providing additional lab space.

The Suncoast Chapter's Ocean Friendly Gardens Program in St. Petersburg, Florida

St. Petersburg, like many communities along the Gulf Coast of Florida, has long been affected by red tides and other harmful algal blooms. In 2019, the Suncoast Chapter's Ocean Friendly Gardens (OFG) program teamed up with the Crescent Heights Neighborhood Association and Wilcox Nursery & Landscape Design to educate local residents on how sustainable lawn care practices can be part of the solution toward combating these blooms. Together, the partners transformed Crescent Heights in St. Petersburg into an Ocean Friendly neighborhood.

Before any shovels hit the dirt though, the chapter and neighborhood association co-hosted four educational presentations and discussions with local residents, elected officials and the general public to ensure that everyone understood the goals of the project. A native plants workshop was also held at Wilcox Nursery where participants learned how to select and care for these plants.

When it was time for installation, more than 80 volunteers showed up to help during three work days, led by Arnold Rutkis from Wilcox Nursery. The volunteers replaced 38 small plots of turf grass located between the sidewalk and the street with native plants and mulch to help soak up stormwater runoff. Besides adding beauty to the neighborhood, the native plants thrive without commonly used chemical fertilizers and pesticides that pollute local waterways. The native plants also provide much-needed habitat for bees and other pollinators. In addition, the resulting healthy soils in these OFG plots help capture carbon from the air and store it below ground to help reduce the impacts of climate change. Watch this short video that documents the transformation of approximately 400 square feet of turf grass along the Crescent Heights roadside into beautiful Ocean Friendly Gardens.



Above: A volunteer installs native plants after turf grass has been removed.



The completed project was officially launched with a vine-cutting ceremony, attended by volunteers from Surfrider's Suncoast Chapter, residents of the Crescent Heights Neighborhood Association, and special guests, including St. Petersburg Mayor Rick Kriseman and other city officials. To keep these small OFG plots functioning and looking good, adjacent homeowners, Surfrider volunteers, and a newly formed Neighborhood Garden Club, share maintenance responsibilities. The services of a professional from Wilcox Nursery have also been retained. This expert will oversee maintenance as the native plants become established during the first year and provide training to the homeowners and volunteers who will take on this responsibility for years to come.

Cumulatively, the Suncoast Chapter's OFG project has engaged more than 150 volunteers through handson educational activities and discussions. Both the Surfrider Suncoast Chapter and the Crescent Heights Neighborhood Association are pleased with how the project came out. The neighborhood is more beautiful than ever and everyone who participated feels good about doing something to protect clean water in their community. In fact, 10 residents have already removed their grass lawns and converted their yards into full Ocean Friendly Gardens. In addition, the chapter is advising other nearby homeowner associations that are interested in making similar conversions on how to get started.

The Suncoast Chapter has also formed a Clean Water committee that is planning some creative awarenessraising events later this year. They are working with the St. Petersburg City Council to sponsor an OFG section of a new city park system, in addition to creating an Ocean Friendly Gardens Award for the City Beautiful Commission. Chapter volunteers have started discussions with the City Council to develop an OFG rebate program as part of the city's stormwater utility bill system as well.

Special thanks to the City of St. Petersburg, Florida for providing a Community Neighborhood Grant to fund the Crescent Heights Neighborhood Ocean Friendly Gardens project, and to all the volunteers who contributed their sweat and cheers to see this project through to the end. Big thanks also to Green Bench Monthly for professional photo documentation.



Above: Installing Ocean Friendly Gardens was a family affair in the Crescent Heights neighborhood in St. Petersberg, FL.

CASE STUDY ISLA VISTA, CALIFORNIA

Students apply innovation and leadership skills to meet community needs with their clean water programs.



Isla Vista is a college town perched on a small stretch of coastal bluff just west of the University of California, Santa Barbara campus (UCSB) in Goleta, CA. Surfrider's Isla Vista Chapter is run entirely by students at UCSB who all love the ocean and are dedicated to protecting and enhancing their local coastline. The leaders of this chapter have made great strides with their clean water programs in recent years and have implemented innovative approaches to meet the needs of their local community.

The Isla Vista Blue Water Task Force

The Isla Vista Chapter ran a small Blue Water Task Force (BWTF) program and tested three surf breaks near campus for approximately 10 years. It was a great educational experience for the students and it provided useful water quality information to surfers at the university. However, the program lapsed for a couple of years from 2015 - 2017 after the students leading it graduated. New chapter leadership relaunched the program during the fall of 2017. The new BWTF coordinator was particularly motivated to get the on-campus water testing program back up and running as he had previously participated in the South Bay Chapter's Teach & Test BWTF program as a student at Redondo Union High School.

Only a few months later, the disastrous **Thomas Fire** broke out. By January 2018, more than 280,000 acres in Ventura and Santa Barbara counties were burned. Heavy rains in January also caused flooding and mudslides to occur on the fire-ravaged hillsides. This brought not only more damage to the impacted area, but also a whole new suite of concerns as debris and contaminants washed down to the ocean. In addition, mud and sediment were deposited at Goleta and Carpinteria beaches to allow emergency responders to provide assistance to those affected by the mudslides.



Above: A BWTF volunteer collects water samples to provide beachgoers with water quality information at the popular local beach, Campus Point.

Students and surfers who frequented the beach at Campus Point just down-drift from the mud disposal site at Goleta Beach were concerned about the resulting water quality impacts at the beach. Test results obtained by the Isla Vista BWTF from January to February confirmed this concern as nearly all weekly water samples collected at Campus Point measured high bacteria levels for at least a month.



In order to meet the local surf and beach community's need for more information on the safety of their local breaks, the Isla Vista Chapter's BWTF sought out ways they could expand their monitoring program to add sample sites and test more frequently. The chapter successfully applied for a grant through the UCSB Coastal Fund that allowed them to purchase additional testing supplies. The BWTF coordinator also reached out to other local water quality monitoring organizations, including Santa Barbara Channelkeeper and the Santa Barbara County Department of Public Health, to discuss ways that they could collaborate to cover more beaches with their programs. The Health Department took responsibility for testing Goleta Beach. It was also decided that Santa Barbara Channelkeeper would test one of the Isla Vista Chapter BWTF sampling sites, Campus Point, 3-4 times per week. This allowed the chapter to shift its efforts to start monitoring another popular surf break at Devereux just a little further up the coast. The chapter shared water quality information generated by all three organizations on their Facebook page so students across campus were aware of current conditions. Read more about these efforts here.

In the two years since the Thomas Fire, the Isla Vista Chapter has built up a solid crew of Blue Water Task Force volunteers and new students have taken over leadership of the program. Enough funding has also been secured to maintain weekly testing of five beaches. All of the Isla Vista Chapter's sampling sites and their results can be viewed on the BWTF website. The chapter even designed a water quality sign featuring 'Rod the Cephalopod' that was posted at the top of the public access to Sands Beach to inform people of current conditions. Unfortunately, this attractive sign was stolen, but the chapter is reengineering a new sign to be tamperproof, and hope that it will help them in their efforts to make people aware of local water quality conditions.

The Isla Vista Compost Collective

The Isla Vista Chapter's Ocean Friendly Gardens committee has also taken innovative approaches to meet a perceived need in their community. In the fall of 2017, the OFG committee founded the Isla Vista Compost Collective to enable more residents in Isla Vista to compost. The program was intended to educate both the participating students and households on proper composting practices. In addition, the committee set out to meet the lofty goal of creating a model composting program that other communities could replicate.

After a lot of planning and raising a little funding, the Compost Collective fully launched during the fall semester of 2018. The program started small by providing 20 houses with five-gallon buckets and composting guidelines. Students, also known as 'Dirtriders,' rode their bikes with cargo trailers in tow to collect food waste and provide clean buckets to each house on their assigned routes on a weekly basis. All collected food waste was sorted, weighed and brought to community compost piles and a bin serviced by the waste management company, MarBorg. The students communicated regularly with the participating households, letting them know if any items were not composted properly and what the impact of their contribution was each week.

By creating beneficial compost for use in community gardens, this program is helping to nurture healthy, biologically active soil that can sponge up and absorb rain and urban runoff. There are also climate change benefits from composting. When organic waste decomposes in landfills, it releases methane, which is a strong, climatechanging gas. By diverting food waste from landfills, the Compost Collective is also helping to decrease local impacts of climate change by reducing methane emissions.

Over the past two years, the Compost Collective has expanded to service 96 households. The program has diverted over 8.9 tons of food waste from the local landfill and has prevented the release of approximately 6.5 metric tons of carbon dioxide equivalent into the atmosphere through the reduction of methane emissions. Even more exciting, Isla Vista's Community Services District just voted to absorb the program and will ensure its continued operations. While students will still participate in the day-to-day operations of the composting program, it is reassuring to have this local government office take responsibility for the program as it grows to meet the demand of over 100 additional households that are currently on the waitlist.



Top: Members of the Isla Vista Compost Collective celebrate the Isla Vista Community Services District Board of Directors decision to absorb their program. Bottom: Student 'Dirtriders' collect kitchen scraps from participating households.

With the Compost Collective achieving such success, the Isla Vista Ocean Friendly Gardens committee intends to go back to the drawing board next fall. They'll consider new projects that they can tackle to educate their campus and local community on the benefits of sustainable gardening practices.

The Surfrider Foundation Isla Vista Chapter has received support from Sanuk, the UCSB Coastal Fund, UCSB First, and the Isla Vista Community Relations Committee. The chapter leaders are very appreciative of how this has helped them to develop and grow their clean water programs to meet community needs. These organizations are truly contributing to the next generation of coastal defenders.



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