

2022

# Clean Water Report

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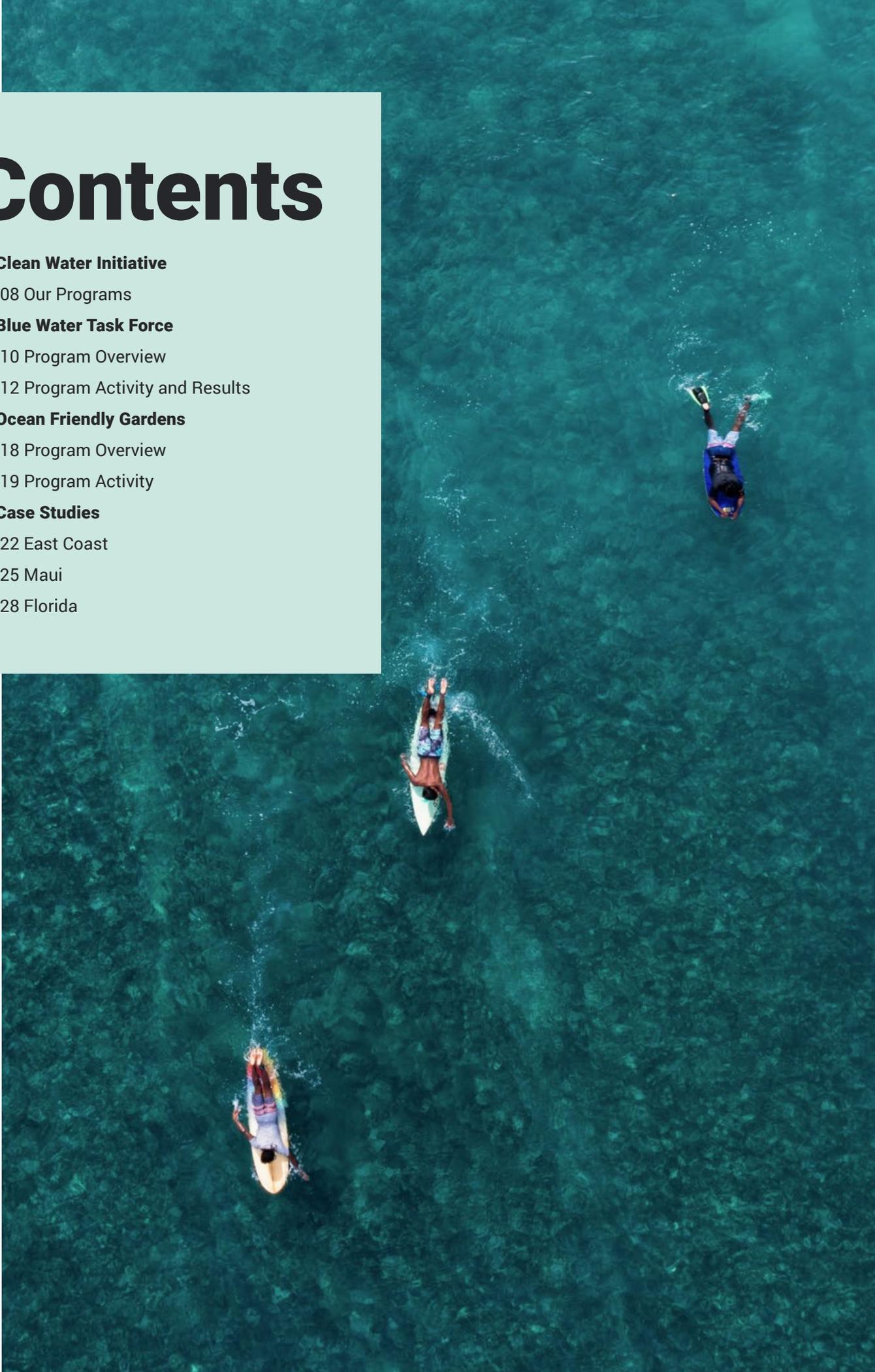
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# Clean Water Initiative

Americans love the beach. More than 100 million beachgoers flock to U.S. beaches every year to enjoy the sand, sunshine and water. Not only do beaches provide recreation, leisure and social opportunities, but they are also the foundation of valuable coastal tourism and ocean recreation that provide 2.5 million jobs nationwide and contribute \$143 billion in gross domestic product to the national economy each year ([oceanomics.org](http://oceanomics.org)).

Since the Surfrider Foundation was founded in 1984, improving coastal water quality has been one of our top priorities. Through our Clean Water Initiative, we strive to protect water quality and reduce pollution so it is safe to surf, swim and play in the ocean and in our coastal waterways. To meet this goal, Surfrider chapters and activists are building awareness of water pollution problems and advocating for solutions to protect clean water and healthy coastal ecosystems.

**Through our Clean Water Initiative, we strive to protect water quality and reduce pollution so it is safe to surf, swim and play in the ocean and in our coastal waterways.**

**Sewage spills and failing wastewater infrastructure threaten coastal water quality and public health.**

**10 trillion**

Gallons of untreated stormwater runoff flow into U.S. waterways every year.

**We are testing the waters for bacteria, raising public awareness and finding real solutions to ocean pollution.**

**53**

BWTF Labs

**496**

Sampling Sites

**9,095**

Samples Collected



## THE THREATS

Despite the high value of clean beaches, coastal water quality is threatened by stormwater, urban and agricultural runoff, and sewage and industrial discharges. Nearly 10 trillion gallons of untreated stormwater runoff flow into U.S. waterways every year, carrying a cocktail of pollutants, including road dust, oil, animal waste, fertilizers and other chemicals. Years of neglect have also left America's wastewater infrastructure in disrepair, outdated and failing.

Sewage spills and failing wastewater infrastructure threaten coastal water quality by discharging raw and undertreated sewage into local waterways and the ocean. In fact, sewage spills and infrastructure failures release over 900 billion gallons of untreated sewage into surface waters every year!

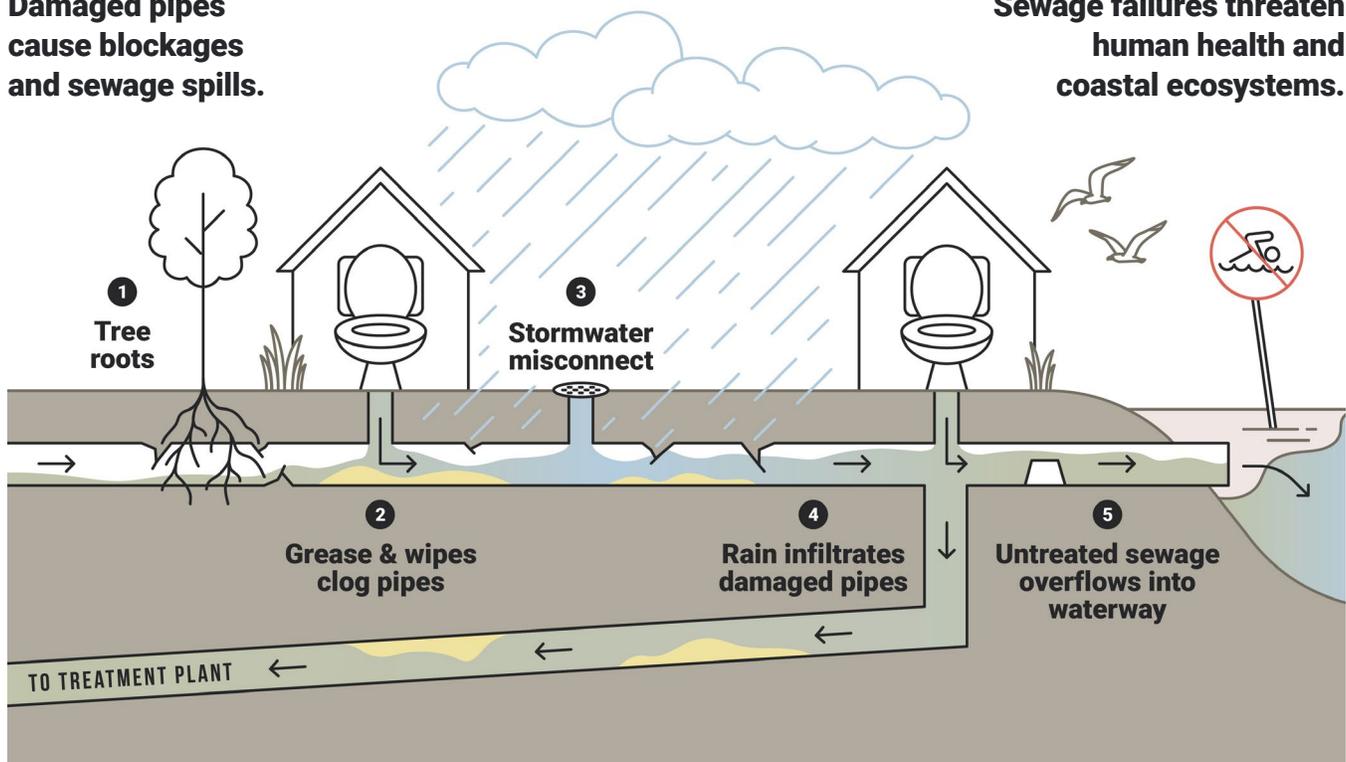
Sewage can contain bacteria, viruses and parasites that make people sick with gastrointestinal symptoms, rashes, skin and eye infections, flu-like symptoms, and worse. Sewage and stormwater runoff also pollute waterways with excess nutrients that wreak havoc on coastal ecosystems by fueling harmful algal blooms that put human health at risk and result in fish kills and coral reef die-offs.

The growing threats from climate change to our coasts, including sea level rise and more frequent extreme weather events that generate massive amounts of stormwater, are already causing water infrastructure failures and sewage spills. Significant investments need to be made now to prepare our coastal communities to become more resilient and to better manage water resources.

## POORLY MAINTAINED SEWERS DISCHARGE UNTREATED SEWAGE INTO LOCAL WATERWAYS

**Damaged pipes cause blockages and sewage spills.**

**Sewage failures threaten human health and coastal ecosystems.**



**Sewage spills and infrastructure failures release over 900 billion gallons of untreated sewage into surface waters every year.**

## SURFRIDER'S APPROACH

Everyone deserves access to clean water to surf, swim and play in. The Surfrider Foundation is taking a multitiered 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 themselves 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 water quality monitoring 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 yards and public spaces to reduce the amount of polluted runoff that flows into local waterways and out to the beach. When more collaborative approaches fail, the Surfrider Foundation can also look toward the courts

to ensure proper enforcement of the Clean Water Act to protect clean water for all people.

In coastal states across the country, Surfrider advocates are building awareness of local water quality problems and bringing together diverse interests to find and fix the sources of pollution. For instance, in Florida, we are working to secure state funding for the Florida Healthy Beaches water quality testing program. We are also seeking to improve public notification practices used to inform beachgoers of elevated bacteria levels and sewage spills. In Hawai'i, our chapters are advocating for improvements to beach water quality monitoring and public notification programs to better protect safe coastal recreation. In addition, we are working with partners to pass state legislation to encourage and fund the replacement of polluting cesspools with more advanced wastewater treatment technologies. Watch the below film to see how Surfrider volunteers in Hawai'i, Florida and locations across the country are taking action to protect public health and coastal ecosystems from sewage pollution.



Surfrider is fighting to ensure that all sewage in the U.S. is adequately treated to protect clean water and public health at the beach. Watch this short film to learn how pollution is affecting coastal communities and water quality in Hawai'i, Florida, and locations across the country, and what solutions are needed.

## FEDERAL NEEDS

Despite the dramatic threats that stormwater and sewage pollution place on public health and coastal communities, governments at all levels have not fully accepted the responsibility to properly maintain our wastewater infrastructure that lies mostly beneath the ground and out of sight. The failure to adequately maintain these systems has led to a backlog of roughly \$271 billion worth of necessary infrastructure upgrades. This estimate doesn't include the threats that coastal infrastructure faces from rising sea levels and exacerbated storm events associated with climate change.

As a result, Surfrider is calling on Congress to make significant investments to repair, upgrade and ensure climate resilience for America's failing water

infrastructure. The bipartisan Infrastructure and Jobs Investment Act was a positive start, dedicating \$12.7 billion to the Clean Water State Revolving Fund (CWSRF) in 2021. The CWSRF is an Environmental Protection Agency (EPA) program that provides low-cost loans and grants to states for wastewater and stormwater treatment upgrades. Advocating for full funding for this program remains one of Surfrider's federal priorities every year. We are also advocating for both state and federal funding to implement solutions to stop the flow of stormwater and wastewater from Mexico, which carry raw sewage, chemicals and immense amounts of trash to beaches on both sides of the border and across south San Diego County. To learn more about the Clean Border Water Now campaign, visit the [San Diego County Chapter website](#).



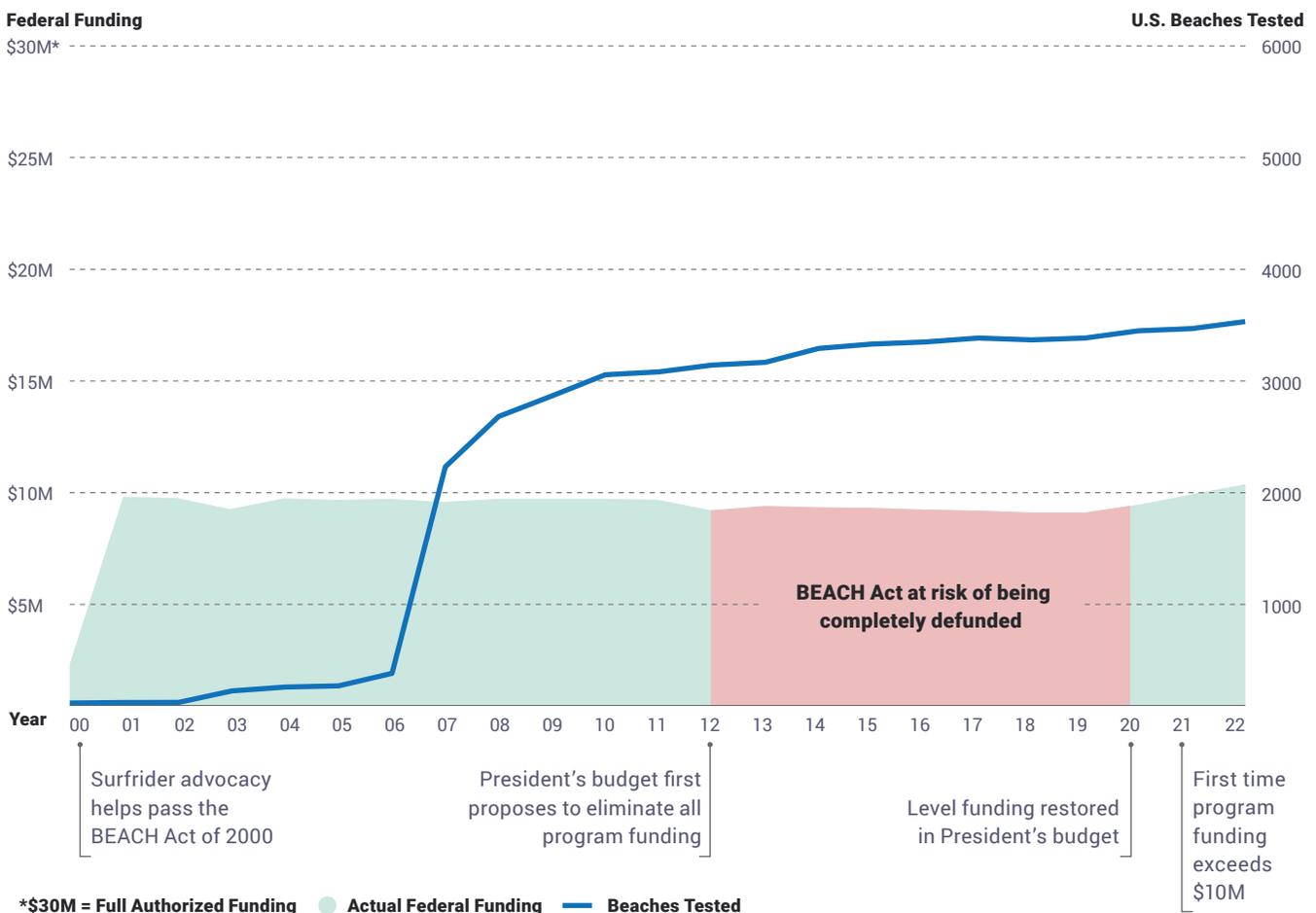
Similarly, the water quality monitoring and public notification programs run by coastal states to protect public health at the beach are resource-restricted. Despite an authorized level of \$30 million for the EPA’s BEACH Act Grants Program to assist coastal states with their beach testing programs, funding has remained close to \$10 million for the past 20 years. While this level of support has kept the beach monitoring programs in approximately 35 coastal states and territories in operation, states are forced to prioritize which beaches to monitor. They also have to limit beach seasons and sampling frequency to stretch the federal grant dollars as far as possible. While we have seen small advances

in the past two funding cycles, Surfrider will continue to advocate for Congress to raise funding levels for this critical public health program so that states can run more equitable and protective beach programs.

Our communities deserve enjoyable and worry-free beach days. Every year, Surfrider’s national network of staff and volunteers speaks to Congress about the importance of protecting clean water and healthy beaches. We want to ensure that our coastal waters are clean and safe for all people to enjoy for generations to come. Join us in our efforts and [take action to support the EPA’s clean water programs](#).

## Despite an authorized level of \$30 million for the EPA’s BEACH Act Grants Program to assist coastal states with their beach testing programs, funding has remained close to \$10 million for the past 20 years.

### HISTORY OF SURFRIDER’S ADVOCACY TO SAVE THE BEACH ACT



# Our Programs

This 2022 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.

**The Surfrider Foundation is taking a multitiered approach to tackle ocean pollution problems.**



The Blue Water Task Force is Surfrider's volunteer water quality monitoring program that provides critical information to protect public health at the beach. Surfrider chapters use this program to raise awareness of local pollution problems and bring together communities to implement solutions.

[bwtf.surfrider.org](http://bwtf.surfrider.org)



Ocean Friendly Gardens is Surfrider's sustainable landscaping and education program that provides beautiful, inexpensive and natural solutions to reduce polluted runoff and to support resilient coasts.

[ofg.surfrider.org](http://ofg.surfrider.org)

# Blue Water Task Force



# Program Overview

Since the inception of the Blue Water Task Force (BWTF) program nearly 30 years ago, Surfrider volunteers have been out in their communities testing water quality at the beach. Now, as a large national network with more than 50 chapter-led labs, the BWTF is measuring bacteria levels at nearly 500 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 volunteers are not only testing beaches that are not covered by agencies, but they are also monitoring potential sources of pollution, such as stormwater outlets, rivers and creeks that discharge onto the beach. The BWTF is in operation all year round, providing public health protection through the off-season when lifeguards leave the beach and health officials stop collecting water samples. This approach to extend public health protection at the beach and in coastal waterways is described in the case study featuring Surfrider's BWTF programs on the East Coast at the end of this report.

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. For example, the Maui Chapter in Hawai'i has recently established a second lab in a high school in Hāna. Students are responsible for collecting and processing all samples under the guidance of their teacher. Through their participation, each student is developing an in-depth understanding of the water quality and pollution issues in their community. More details about this successful program follows in the Maui case study.

All BWTF test results are compared to state 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.

**With more than 50 chapter-led labs, the BWTF is measuring bacteria levels at nearly 500 ocean, bay, estuary and freshwater sampling sites across the country.**



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 BWTF program in Newport, Oregon has been successful in forming positive working relationships with other community groups and government agencies to raise awareness of local pollution problems. With persistence, Surfrider volunteers have successfully advocated for pollution source investigations, along with sewage and stormwater infrastructure improvement projects, that have resulted in improved water quality conditions at the beach. Learn more about how the Newport BWTF program is engaging community partners and inspiring local youth to care for our coasts in [this short film](#).

Many other chapters on both the East and West coasts have also applied their water quality data to inform pollution source tracking studies and prioritize the placement of solutions. While it can take many years 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 measuring water quality conditions at the beaches they love and rallying their communities around protecting clean water for future generations.

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](#).



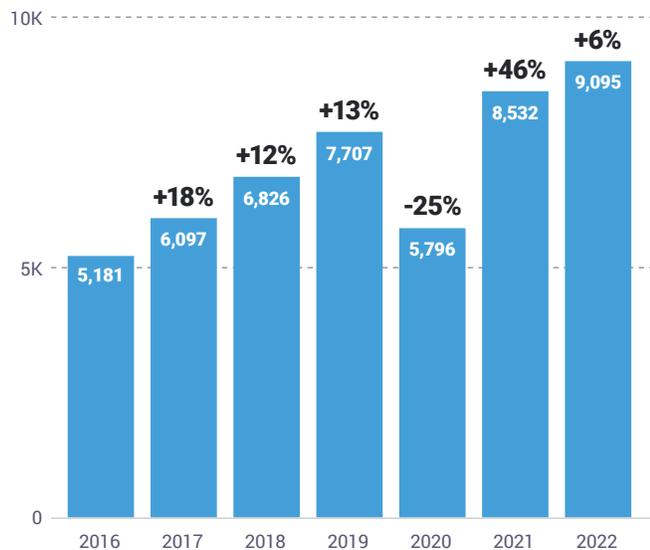
# Program Activity and Results

During 2022, 53 BWTF labs processed 9,095 water samples collected from 496 distinct sampling sites. Once again, Surfrider Foundation chapters broke previous records by processing more water samples collectively in 2022 than ever before. With 53 active labs, we've fully recovered from the access and safety restrictions imposed during the COVID-19 pandemic. During 2022, six chapters launched new water testing programs to expand the reach of the national BWTF network, including our chapters in Maine, Delaware, Florida Keys, Texas Coastal Bend, and the newly-formed Three Capes Chapter on the Tillamook Coast in Oregon. With the support of Dragon Alliance, lab equipment was also purchased and set up in the Surfrider Foundation's headquarters office in San Clemente to launch a new BWTF program in North Orange County, California.

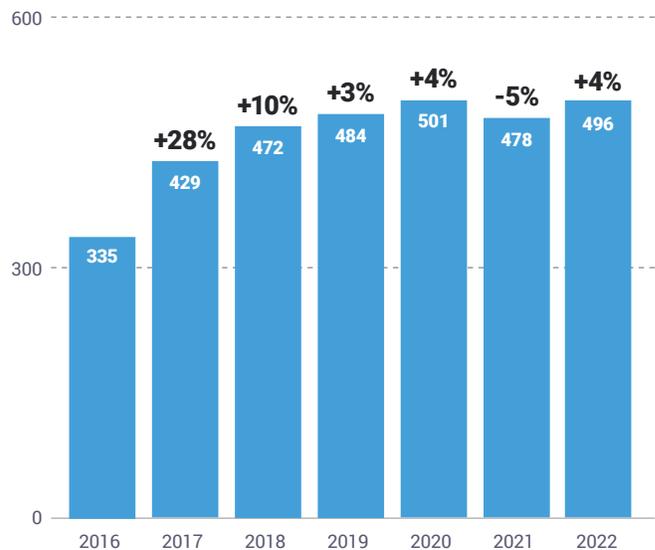


## ANNUAL GROWTH IN WATER TESTING

Number of BWTF Tests Per Year

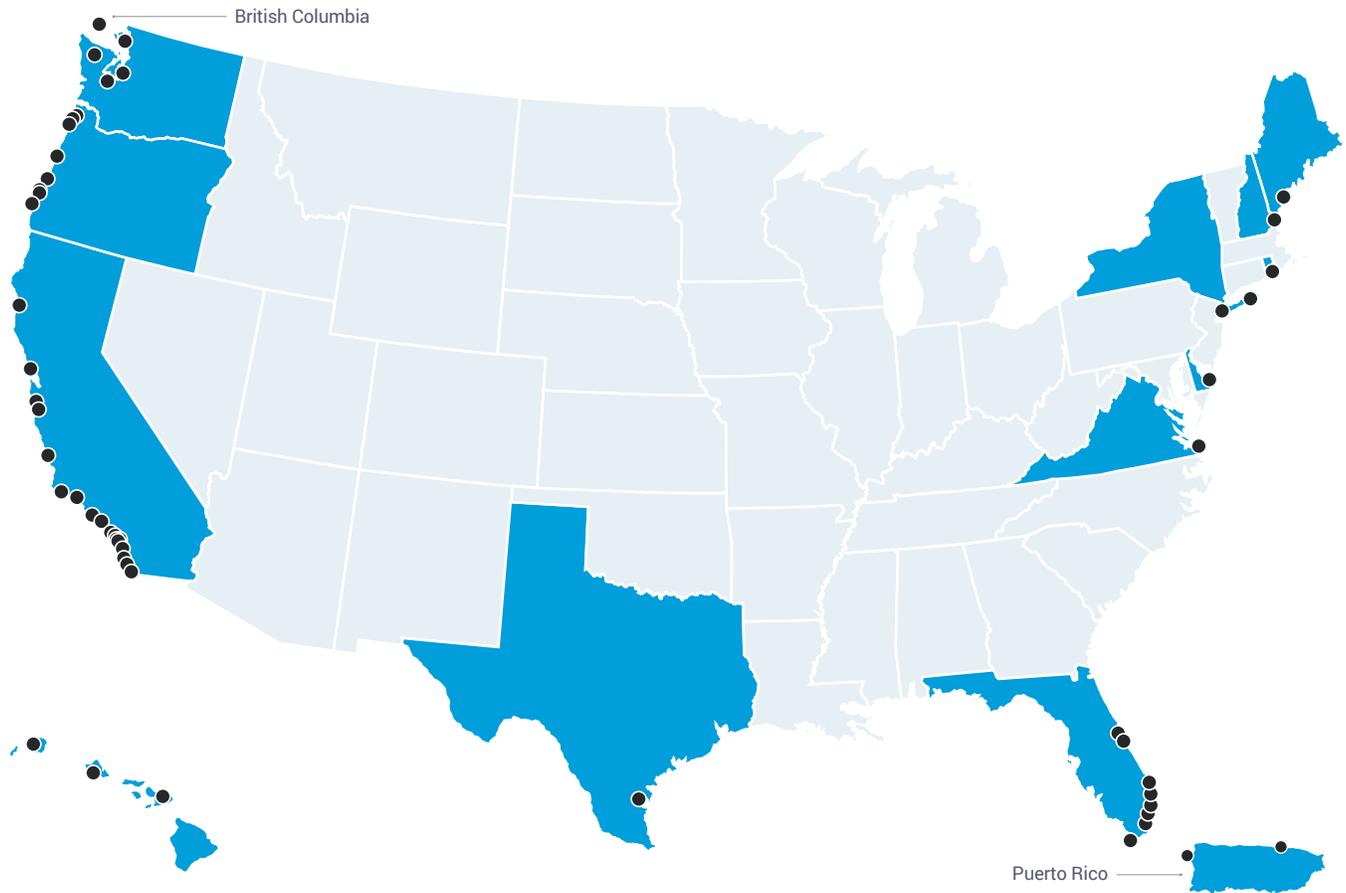


Number of BWTF Sites Per Year



Once again, Surfrider Foundation chapters **broke previous records by processing more water samples collectively in 2022 than ever before.**

## WATER TESTING LAB LOCATIONS



During 2022, six chapters launched **new water testing programs** to expand the reach of the national BWTF network.



# WATER TESTS PERFORMED BY THE BLUE WATER TASK FORCE IN 2022

## 9,095 Total

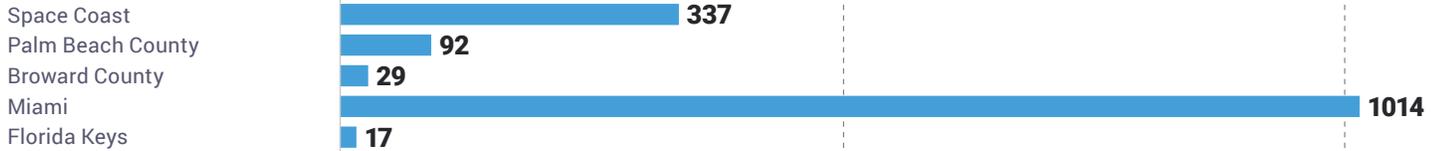
### Northeast



### Mid-Atlantic



### Florida



### Texas



### Puerto Rico



### Hawai'i



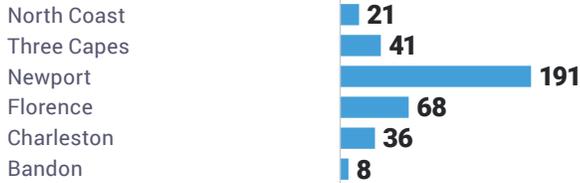
### British Columbia



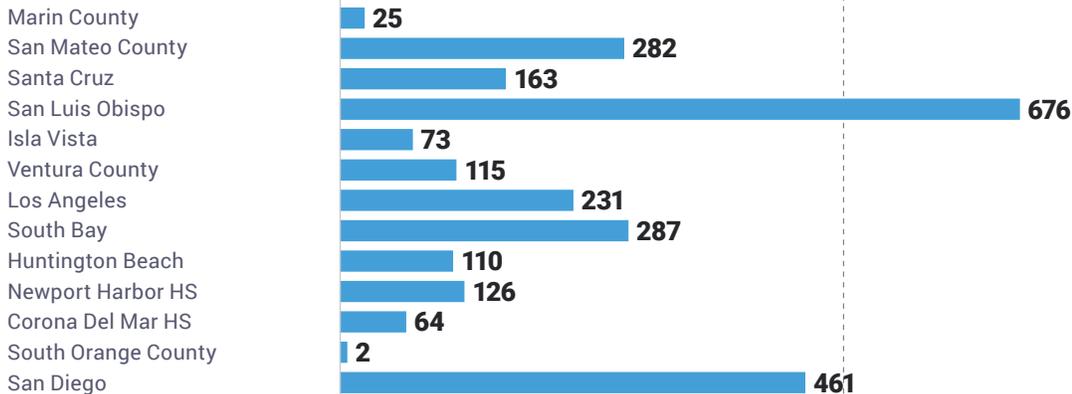
### Washington



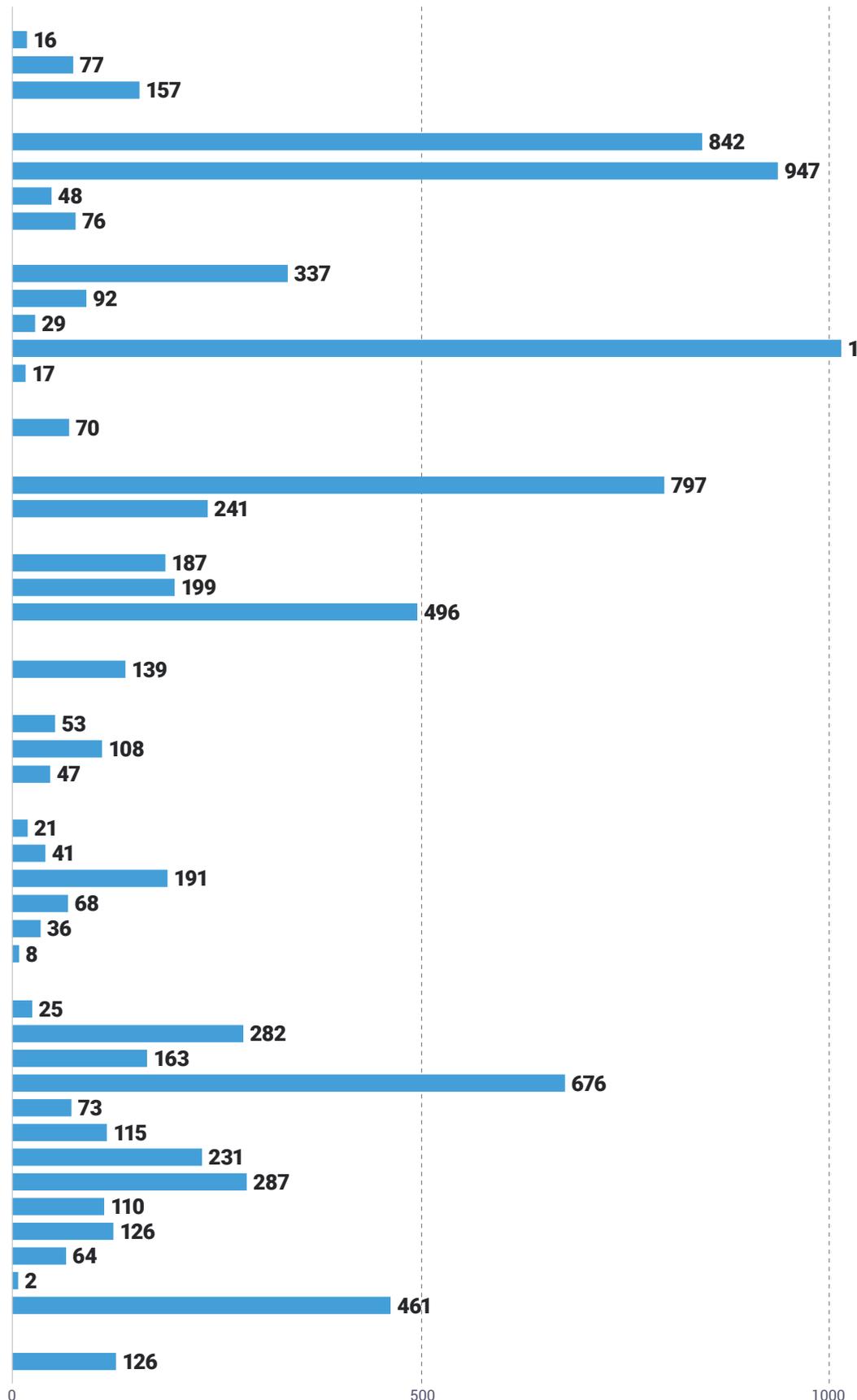
### Oregon



### California



### Costa Rica

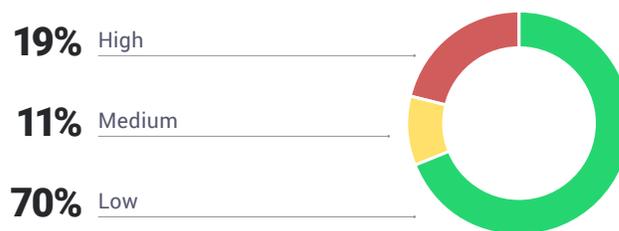


The collective results from all the participating BWTF labs have remained relatively constant since we began compiling data in an annual report in 2011. Of the 9,095 water test results reported in 2022, 70% indicated low bacteria levels, 11% indicated medium bacteria levels, and 19% measured high bacteria levels that exceed water quality criteria, or Beach Action Values, set by each state to protect public health in recreational waters. To view each state's Beach Action Values, visit Surfrider's Beachpedia article, [Beach Water Quality Monitoring Programs in Coastal States](#).

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 U.S. Stormwater can wash chemicals and other pollutants from streets and lawns into local waterways and down to the beach. In addition, stormwater and flooding after rain events can cause wastewater infrastructure, such as cesspools, septic systems and sewers, to fail and release untreated sewage into local waterways and the ocean. Across the country, Surfrider's Blue Water Task Force programs are measuring high bacteria levels at many beaches and recreational waterways where stormwater and failing sewage infrastructure are polluting the water. In many instances, no one else is monitoring these sites, or agency sampling seasons are restricted to only a few months during the summer. This underscores the importance of volunteer-generated information like Surfrider's BWTF data to help inform safe recreation and to restore clean water in coastal communities.

The table to the right highlights ten beaches from the East Coast, West Coast, Puerto Rico and Hawai'i where Surfrider chapters are consistently measuring high bacteria levels. The table shows the percentage of samples collected at each beach that resulted in bacteria counts that exceeded the state health standard for recreational waters. This translates to a percentage of high bacteria measured for each site as an indication of safety for recreational use. These priority beaches represent a variety of recreational waters and access points that are important to local communities, yet water quality conditions could be putting public health at risk.

## BACTERIA LEVELS MEASURED BY THE BLUE WATER TASK FORCE IN 2022



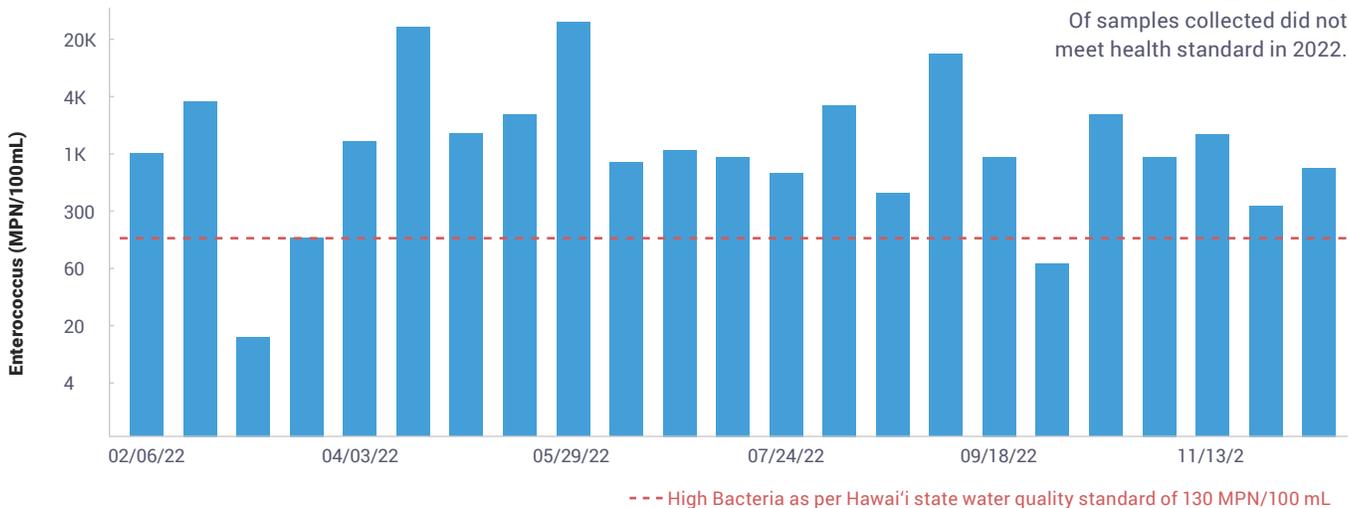
Priority Blue Water Task Force Beaches	High Bacteria Rate 2022*
<b>Sag Harbor: Windmill Beach</b> Sag Harbor, NY <a href="#">View Details</a>	<b>39%</b>
<b>Ballard Park</b> Melbourne, FL <a href="#">View Details</a>	<b>52%</b>
<b>Park View Kayak Launch</b> Miami Beach, FL <a href="#">View Details</a>	<b>85%</b>
<b>Playa Lala</b> Rincón, PR <a href="#">View Details</a>	<b>24%</b>
<b>South Sound Thea Floss Floating Dock</b> Tacoma, WA <a href="#">View Details</a>	<b>50%</b>
<b>San Luis Creek Mouth</b> San Luis Obispo, CA <a href="#">View Details</a>	<b>34%</b>
<b>Linda Mar Beach</b> Pacifica, CA <a href="#">View Details</a>	<b>73%</b>
<b>Kahalu'u</b> Kahalu'u, O'ahu HI <a href="#">View Details</a>	<b>88%</b>
<b>Hanamā'ulu Beach</b> Hanamā'ulu, Kaua'i, HI <a href="#">View Details</a>	<b>80%</b>
<b>Nāwiliwili Stream at Kalapakī Bay</b> Līhu'e, Kaua'i, HI <a href="#">View Details</a>	<b>100%</b>

\*High Bacteria Rate = Percentage of samples collected that fail to meet the state health standard for recreational waters

## A CLOSER LOOK: KAHALU'U

**88%**

Of samples collected did not meet health standard in 2022.



From a small village beach in Sag Harbor, New York to urban beaches on the shores of the Puget Sound in Washington and the Indian River Lagoon in Florida, the BWTF is filling in gaps to provide critical health information to beachgoers and park users. For example, Park View Kayak Launch in Miami, Florida, Ballard Park in Melbourne, Florida and Playa Lala in Rincón, Puerto Rico are all popular spots for families to enjoy a fun day at the beach or in the water, but they are affected by old, failing sewage lines and infrastructure. Families with small children also favor the Nāwiliwili Stream on Kaua'i. This stream flows across the sand on the beach and discharges into Kalapakī Bay. However, it is not tested by the state health department as it isn't considered part of the official marine beach that they are tasked with monitoring. Unfortunately, BWTF volunteers often see parents sending their children to play in these calm polluted waters, putting their concerns over tides and wave action in the ocean above water pollution risks that they are largely unaware of. In the case of the Nāwiliwili Stream, the Kaua'i Chapter has not measured a bacteria count that is below the state health standard since 2016!

Also on Kaua'i is Hanamā'ulu Beach. This popular county beach park supports a wide variety of recreational uses, including beachgoing, picnicking, swimming, surfcasting and traditional Hawaiian fishing practices. There is a stream adjacent to this park that empties into Hanamā'ulu Bay that has tested high nearly every time the chapter has sampled it over the last decade.

The Kaua'i Chapter started sampling the bay water at this beach this past March at the request of the community and unsafe levels of fecal indicator bacteria have been measured frequently.

Over on the island of O'ahu, the chapter's sampling site at Kahalu'u is used for access into Kāne'ohe Bay to go snorkeling, boating and fishing. However, the watershed has a high concentration of cesspools that contribute to pollution and Kahalu'u is on the receiving end of a stream that brings stormwater down to the beach. Linda Mar Beach in Pacifica, California is a popular surf break located at the mouth of San Pedro Creek. In San Luis Obispo, California, the San Luis Creek consistently measures high bacteria levels at several sampling sites along its length. It flows into the Pacific Ocean at Avila Beach, one of the most popular beaches in the area, potentially exposing beachgoers to polluted water that could put their health at risk.

At each of these beaches, the local chapters' Blue Water Task Force programs are working hard to build awareness of the pollution problems and to provide their communities with the information needed to know where it's safe to surf, swim and play in the water. The ultimate goal is to find and fix the sources of pollution and to restore clean water locally. This is what is driving Surfrider's efforts to protect water quality across the nation. We want to ensure that the beach and ocean are clean and safe for all people to enjoy for generations to come.

# Ocean Friendly Gardens



# Program Overview

Surfrider's Ocean Friendly Gardens (OFG) program offers simple and beautiful solutions to protect clean water and support resilient coasts and communities. Surfrider chapters use this program to build awareness of the connection between how we care for our yards and public spaces and the resulting health and resilience of our local waterways and beaches.

The Ocean Friendly Gardens program champions nature-based solutions, such as rain gardens, bioswales, and native plant installations that emulate natural watersheds and healthy habitats. Through this program, we are building community capacity to implement and drive broad, long-lasting solutions to urban runoff and to restore biodiversity in coastal watersheds. By returning nature to our urban spaces, OFGs are also supporting climate resiliency goals by sequestering carbon, reducing air and water pollution, and avoiding climate emissions from energy-intensive maintenance practices. 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 clean water 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

Saving water and creating wildlife habitats 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 Activity

Surfrider chapters are educating people about water quality problems created by urban runoff and conventional landscaping practices. They are also promoting more sustainable gardening and lawn care practices in their communities to support clean water and climate resiliency. Each chapter designs and implements its OFG program to meet local needs and leverage available resources.

For instance, in East Hampton, New York, the Eastern Long Island Chapter has been busy building a core of volunteers to help maintain the large Ocean Friendly Gardens that they installed in the village greens to absorb road runoff and provide pollinator habitat. Led by a Master Gardener volunteering her time to help train the new volunteers, the chapter has been busy trying to keep weeds from crowding out the young native plants installed in these community gardens. Nearby in New York City, the chapter installed a community garden last summer at a space in the Rockaways that hosts outdoor

movies. This public venue offers great exposure for visitors to view the native plants and the pollinators that they attract to the garden.

In Florida, the Space Coast Chapter has diligently been using its Ocean Friendly Gardens program as a vehicle to restore healthy ecosystems and habitats throughout the Indian River Lagoon watershed. The chapter has installed and is maintaining several OFGs at local schools and public parks. The OFG Coordinator is a native plant specialist who has been providing advice to local residents on how to incorporate more native plants into landscapes and maintain yards without the use of harmful lawn chemicals. Working together with the City of Melbourne, the chapter is currently in the midst of a five-year project to transform the Crane Creek Preserve Golf Course into an Ocean Friendly and native landscape. When completed, the Crane Creek Preserve Golf Course will be an impressive example for golf courses throughout Florida and beyond.



Top Left: Community volunteers install an Ocean Friendly Garden in a front yard. Bottom Left: Volunteers rehabilitate a vacant lot next to a convenience store in Long Beach, California. Right: Installation of native plants along the waters edge in Brevard County, Florida.

In Hawai'i, the O'ahu Chapter and its partners at Permablitz Hawai'i have been building, growing and tending a large community garden for several years. What was once a 33,000 square foot abandoned lot in a commercial district in Honolulu is now a thriving Ocean Friendly Garden that serves as a living laboratory to build awareness of native Hawaiian plants and traditional cultural practices. With many plants that bear fruits and vegetables, the Kaka'ako Ocean Friendly Garden also helps to support local food security. Throughout 2021, Surfrider volunteers met weekly to weed and tend this garden. The chapter also hosted community work days every month to provide opportunities for families and community members in this densely developed urban area to connect with the 'āina or land.

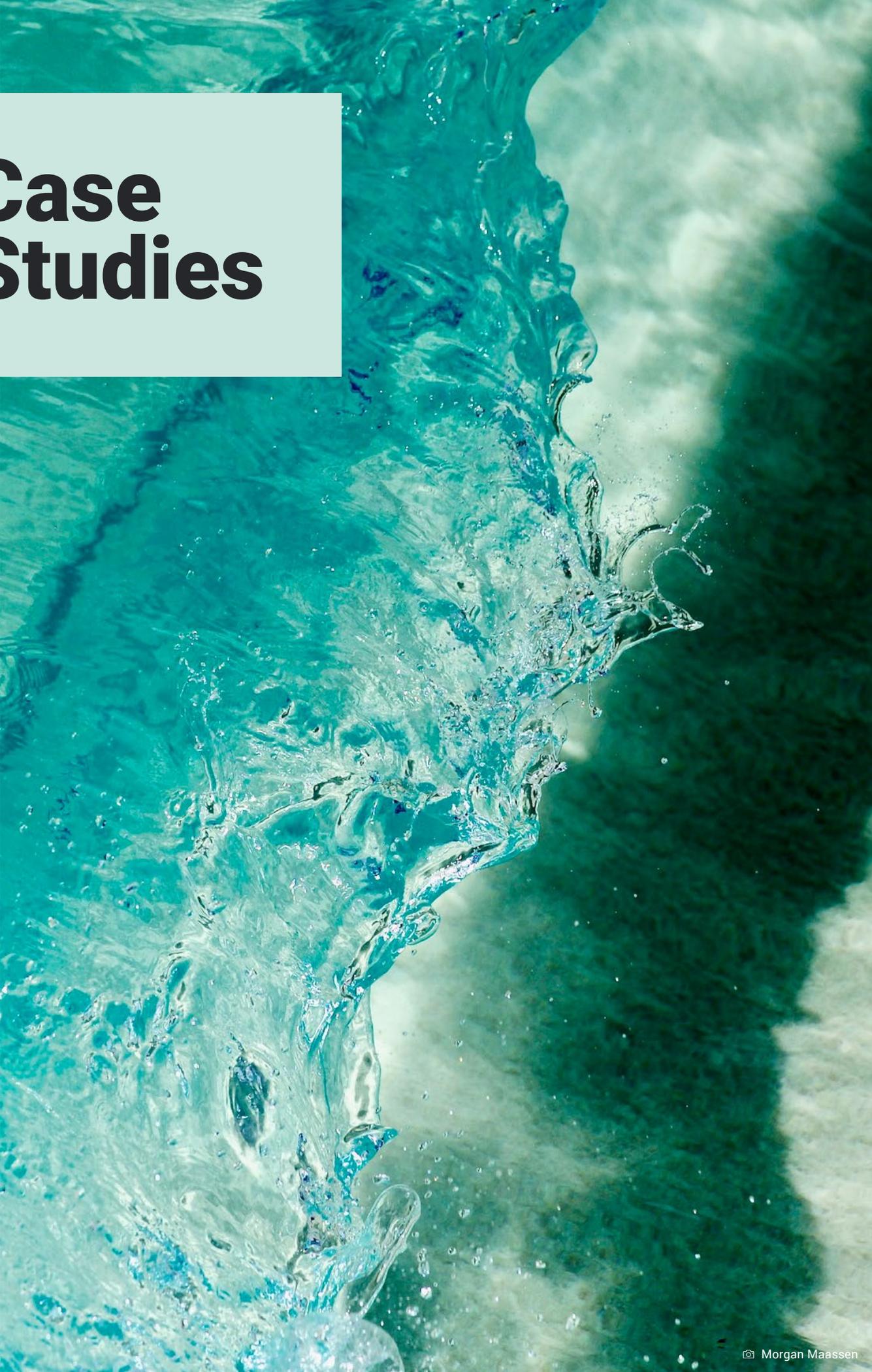
This past year in Southern California, the Surfrider Foundation partnered with Dashboard.Earth to pilot a

project using the Ocean Friendly Gardens program as a vehicle to engage Long Beach and Los Angeles residents in easy actions to build a more resilient community. This new partnership offered Surfrider the opportunity to better communicate and track the water quality and climate resiliency benefits of Ocean Friendly Gardens. The pilot project included sharing important local information on sustainable landscaping practices on the [Dashboard Earth mobile application](#). In-person trainings and workshops were also hosted by the Long Beach Chapter to install demonstration rain gardens and train community members on how to adopt ocean-friendly practices at home. Learn more about this successful project in [this blog post](#). The Los Angeles Chapter also hosted a panel of local experts in native plants and watershed restoration, and held a work day at one of the public gardens to continue building community awareness and engage volunteers in Ocean Friendly Gardens.



Top Left: A volunteer applies mulch in the Kaka'ako Ocean Friendly Garden on O'ahu, Hawai'i. Bottom Left: Native plants in bloom. Right: Volunteers help maintain the public garden at Beyond Baroque Foundation in Los Angeles, California.

# Case Studies



## CASE STUDY

# East Coast

## Small Blue Water Task Force programs help fill in big seasonal gaps in Northern states.

The New England and Mid-Atlantic coast is known for quaint seaside towns, idyllic sandy beaches and rolling dunes speckled with seagrass. Every summer, a growing number of visitors flock to the family-friendly vacation destinations along this stretch of coastline. These visitors support a robust and largely seasonal tourism economy that is vital to the livelihoods of most people who live in these coastal communities.

As beaches in this region see the most traffic during the summer, the government agencies responsible for protecting public health typically only run their water quality monitoring programs from Memorial Day to Labor Day. Funding constraints force health agencies to limit their monitoring season and focus their sampling programs to cover popular lifeguarded beaches, typically on the Atlantic Ocean. This leaves major gaps in coverage where and when people are

recreating in the water. Families with small children often prefer to play in calmer waters, such as bays, harbors and coastal ponds, where the agency programs are not testing. During the cooler, off-season months, when agency beach programs stop completely, coastal recreation is entirely unprotected. This is particularly problematic during the fall, when ocean waters in the area remain warm, tourism is still relatively high, and the region experiences good swell conditions during hurricane season.

Hurricanes and even less powerful coastal storms also bring heavy rains and flooding to coastal communities, causing sewage failures and putting public health at risk. Much of the Northeast is still serviced by inadequate wastewater infrastructure, such as combined sewers and septic systems, which spill and leach untreated sewage into local waterways during even small rain events.



Hampton Beach aerial view including historic waterfront buildings on Ocean Boulevard and Hampton Beach State Park, Town of Hampton, New Hampshire.

## TESTING THE WATER

These pollution concerns and gaps in monitoring coverage have inspired a number of chapters on the East Coast to start Blue Water Task Force (BWTF) programs in recent years. The common goals for these chapter programs are to extend the coverage of agency beach programs to inform safe, year-round coastal recreation and to build awareness of local pollution problems.

**Maine:** Surfrider's Maine Chapter launched its water testing program in January 2022, after aligning sampling protocols and receiving training from staff at the Maine Department of Environmental Protection. Chapter volunteers collect water samples and bring them to a local lab, Katahdin Analytical Services, for processing during the colder, off-season months. This testing

augments the [Maine Healthy Beaches Program](#) that runs only during the summer. The Maine Chapter started small by first testing one pilot site at Higgins Beach. The program has since expanded to cover four ocean beaches with the help of newly recruited volunteers. While most of the test results reflect safe water quality conditions, the chapter did measure an extremely high bacteria concentration (over 10x the state health standard!) in a sample collected at Higgins Beach in February, 2023. The chapter volunteers were glad that they were able to provide a warning to surfers in their community of this potential health threat. This incident illustrates why year-round testing is really necessary to protect public health and safe recreation, even in a state as far north as Maine.



Top Left: Maine BWTF volunteers collect a water sample. Bottom Left: A Delaware BWTF sample collected in the bay. Right: A BWTF volunteer collects a sample from an ocean beach in New Hampshire.

**New Hampshire:** The New Hampshire Chapter launched its current BWTF program during the fall of 2019 in cooperation with the New Hampshire Department of Environmental Services (NHDES). Similar to Maine, [NHDES runs a seasonal beach monitoring program](#) from Memorial Day to Labor Day and the chapter's program takes over during the cooler, off-season months. BWTF volunteers collect samples on a biweekly basis from five ocean beaches. All samples are processed at the Jackson Estuarine Lab at the University of New Hampshire. While most of the chapter's test results indicated low bacteria levels during 2022, they did measure a high bacteria count that exceeded the state health standard at North Beach in December. This potential health risk would not have been detected had the chapter not been out testing.

**Delaware:** The Delaware BWTF program is another example of a small program that does a good job of filling in the gaps left by the state's seasonal beach program. As with most other states along the East Coast, the beach testing program conducted by the [Delaware Department of Natural Resources and Environmental Control \(DNREC\)](#) only extends from May to September. When the Delaware Chapter first launched its BWTF program in early March 2022, the volunteers began by testing two popular surfing beaches - Herring Point and Indian River Inlet. All samples are processed at the [College of Earth, Ocean & Environment Citizens Monitoring Program](#) at the University of Delaware.

When the state's program took over testing these ocean beaches during the summer, the chapter temporarily refocused its volunteer efforts to sample two popular bay beaches that were not covered by DNREC. In the fall, they started testing the ocean beaches again. While the ocean sites have all tested clean thus far, the bay beaches have resulted in high bacteria counts a handful of times. This information has been valuable to people who recreate in the bay, especially families with young children that prefer the calmer water there to the surf at the ocean beaches.

## COMMUNICATING RESULTS

After all BWTF test results are posted online, the chapters use their social media channels to share the data with their followers and the public. Because of the close relationships they have with their state agencies, the leaders in these chapters will also email beach program staff when their results exceed water quality standards or when other concerns arise. These communication efforts to share data are critical to provide people with the information they need to recreate safely in the water and to build awareness of local pollution problems so they can ultimately be fixed. Visit Surfrider's [BWTF website](#) to see where these chapters are testing and view the results in [Maine](#), [New Hampshire](#) and [Delaware](#).



Left: Water quality samples. Right: Blue Water Task Force Manager Michelle Parker-Ortiz and New Hampshire Chapter Chair Chris Grippo demonstrate proper sampling techniques at the Northeast Chapter Conference.

## CASE STUDY

# Maui

## Community partners and volunteer energy help the **Blue Water Task Force expand** across the island of Maui.

Since its first sampling run in 2017, the Maui Chapter's Blue Water Task Force (BWTF) has transformed into a well-known and respected source of coastal water quality information with the help of their community partners and a growing team of volunteers. The Maui Chapter started its BWTF program to establish a baseline of water quality conditions at 18 popular North Shore beaches as the fate of 36,000 acres of former sugar cane land was being decided. The previous year, the chapter worked successfully with a coalition to preserve 267 acres of this former agricultural land along the Hamakua Coast and wanted to generate data to help inform smart land-use planning throughout the watershed.

The Maui Chapter initially teamed up with Professor Donna Brown and her marine biology students at the University of Hawai'i Maui College to process all water quality samples. This arrangement was ideal for the chapter when the program first started as Professor Brown provided technical oversight and training for the chapter volunteers. The logistics, however, proved difficult to maintain, especially as COVID-19 restrictions

limited volunteer access to the university campus and lab. Toward the end of 2021, the BWTF Coordinator for the Maui Chapter, [Greg Masessa](#), found a new home for the chapter's lab equipment at the Pā'ia Bay Youth and Cultural Center. Centrally located on the North Shore, the new lab space offers convenient access for chapter volunteers and opportunities to interact with other community groups and local youth that also use the Youth and Cultural Center.

Over the last six years, the chapter has been diligently working to build awareness of its program and local water quality conditions. All of the chapter's data is posted [online](#) and volunteers send out water quality reports through email and social media after each monthly sampling event. These reports are often covered by local media outlets, such as [Maui News](#). With the support of the Hawai'i Regional Manager, the chapter also releases an [annual report](#) that describes trends in its water quality data to further inform safe recreation and beachgoing, and to build awareness of local pollution problems.



Families with young children enjoy bathing at Baby Beach, one of the Maui BWTF sampling sites on the North Shore.

All of this promotion reaped high rewards last year as the chapter successfully recruited four new volunteers to the program to help collect samples and perform the lab work. After an evaluation of its sampling sites, the chapter decided to eliminate seven of the sites on the North Shore that overlap with the state's beach monitoring program and nearly always test clean. The chapter has redirected its growing volunteer capacity to sample four new beaches on the South Shore of Maui. These new sampling sites are affected by runoff, have cesspools in their watershed, and were selected after surfers expressed concerns of getting sick or smelling sewage while out in the water.

Last year, the chapter was also approached by 'Aunt Mary' Ann Kahana who lives in the rural community of Hāna on the east side of the island and is a board member of the community group [Ke Ao Hali'i \(Save Hāna Coast\)](#). After hearing about the BWTF program, she was hoping to have some of her local beaches tested as well. Mary lives on generational land at Haneo'o, Hamoa Village. She represents the Pi'ilani 'ohana of Hāmoa and she is continuing her grandpa George Kanawai Pi'ilani's legacy of protecting, loving and respecting the lands of Hāna.

Her request was both a challenge and opportunity for Greg, the chapter's BWTF Coordinator. The road to Hāna is 64-miles long, has hundreds of curves and easily takes two hours to safely drive. The chapter did not have volunteer capacity to transfer samples from the Hāna sites to the lab in Pā'ia each month. Greg, however, wanted to find a way to make it work as Hāna is home to a large, native Hawaiian population and, like communities throughout Hawai'i, it is strongly connected to its coastal resources and beaches. Hāna also has a high concentration of cesspools, but it's so remote that the state is unable to include it in its regular beach monitoring program.

Greg worked with Mary to recruit eight local volunteers to participate in the program. She even arranged to have the samples transported to the lab in town by the local FedEx driver. Four sampling sites were also chosen, including two popular beaches, a traditional Hawaiian fish pond and a freshwater swimming hole. Everybody had to stay in close communication to ensure that the samples arrived at the lab within the method's required sample holding time of six hours or less.



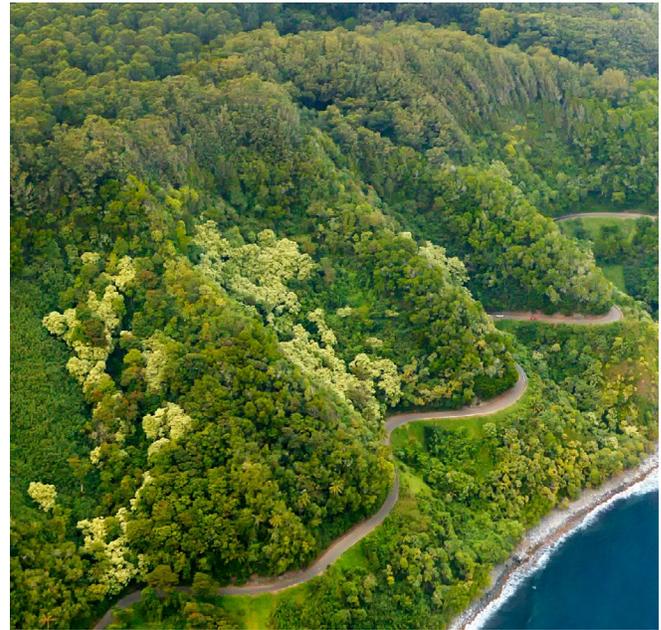
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The Maui BWTF lab at the Pā'ia Bay Youth and Cultural Center.

Due to the challenging logistics, the chapter's goal was to establish a new lab in the local school to make it easier and to engage students in the program. When another monitoring group from the west side of Maui, Hui O Ka Wai Ola, donated their unused lab equipment to the chapter, Greg happily worked with a science teacher Bri Craig to set it up in her classroom at Hāna High School. Greg trained Bri and her students on proper sampling and lab techniques and now they are able to collect and process their own samples.

The Hawaiian word "laulima" literally translates to "many hands" and describes the value of cooperation and people working together. The growth and expansion of the Maui Chapter's BWTF program over the last few years demonstrates the power of community working collectively to protect coastal water quality throughout the island.

Visit the [BWTF website](#) to see where the Maui BWTF is testing and view their results.



Top Left: Students receive training in BWTF methodology at Hāna High School. Top Right: The road to Hāna. Bottom: Waioka Pond.

## CASE STUDY

# Florida

## Advocating for **clean water and a resilient future** in the Sunshine State.

Known as the Sunshine State, Florida enjoys 825 miles of sandy beaches and more than 8,000 miles of coastline. Every year, more than 122 million visitors flock from around the world to enjoy the state's treasured beaches and coastal environments, contributing to an annual, statewide tourism economy valued at more than \$101 billion. However, Florida's vital water resources are threatened by an increasingly lethal cocktail of chronic pollution from failing wastewater infrastructure and runoff, persistent harmful algal blooms, increasing ocean temperatures, and rising seas that threaten to upend entire communities, economies and ecosystems across the state. With public and environmental health at risk, Surfrider's chapter network in Florida is working to implement programs and enact policies at local, state

and federal levels to ensure clean water for all people. With a population of nearly 22 million, Florida's pollution woes are inextricably linked to explosive growth and poorly-planned development. Failing and inadequate wastewater infrastructure, including overburdened and eroding sewers and more than 2.6 million septic tanks across the state, leech and spill untreated sewage into local waterways and the ocean. These discharges contain pathogens that put public health at risk. Large inputs of nutrients, such as nitrogen, from sewage discharges also trigger harmful algal blooms, including blue-green algae in freshwater and red tides at the coast. Stormwater and agricultural runoff contribute additional nutrients into already impaired waterways.



Miami Beach, Florida

The threats to water quality and Florida's wastewater infrastructure are further intensified by climate change. These threats range from flooding caused by increasingly stronger and wetter hurricanes to the less visible, yet harmful, impacts of saltwater intrusion caused by sea level rise. These devastating impacts were clearly illustrated after Category 4 Hurricane Ian made landfall in Southwest Florida in September 2022. The region's sewers and more than 100,000 septic systems could not stand up to the nearly 14 feet of storm surge and 20 inches of rainfall brought by the storm. As a result, millions of gallons of raw and poorly-treated sewage spilled into local waterways and the ocean, making it dangerous for people to come into contact with flood waters, let alone swim in the ocean. Alarming, in the counties where Hurricane Ian first made landfall, Florida recorded the highest number of cases of *Vibrio vulnificus* in the state's history and 17 people lost their lives as a result. As ocean temperatures rise, the environment becomes more hospitable for the proliferation of these life-threatening bacteria.

The influx of nitrogen from sewage spills during Hurricane Ian also triggered a red tide to develop along the Gulf Coast of Florida last fall. Toxins released by this harmful algal bloom cause respiratory issues and other symptoms in humans, and have resulted in fish kills, other animal mortalities and declines in local seagrass beds. Unfortunately, warming ocean temperatures caused by climate change will only amplify the risks of harmful algal blooms like these on coastal communities and ecosystems worldwide.

As Florida experiences the compounding impacts of climate change and chronic pollution, it is urgent that the state's beaches and waterways are subject to rigorous water quality testing and adequate public notification to ensure beachgoers truly know when it is safe to surf and swim. Unfortunately, the state cut funding to its beach water quality monitoring program in 2011. Subsequently, Florida's beaches are tested less frequently, in fewer locations, and for shorter seasons year after year. As climate pressures mount, the significant gaps in testing and notification leave more people vulnerable to getting sick than ever before from recreating at the beach in coastal waters.



Left: Flooding caused by Hurricane Ian in September, 2022. Top Right: Aerial image of Red Tide bloom in the Gulf of Mexico near Fort Meyers. Bottom Right: Advisory sign warns of algae bloom.

To address these gaps, the Surfrider Foundation is taking a multi-pronged approach to protect clean water and public health in Florida. At the federal level, we are seeking to fund critical water quality programs at the Environmental Protection Agency (EPA). This includes the BEACH Act grants program, which is urgently needed in Florida given the state's reliance on these federal dollars to fund its beach water quality monitoring program. Surfrider is also advocating for significant federal investments through the Clean Water State Revolving Fund to address the backlog of more than \$18 billion in wastewater infrastructure upgrades that currently exists in the Sunshine State. At the state level, we are working to strengthen laws that govern beach water quality testing and public notification requirements and are seeking additional funding to pay for these important programs. These complementary campaigns aim to address the root causes of the state's water quality issues, while protecting the public health, safety and welfare of everyone who recreates in Florida's beach waters.

Surfrider's chapter network is also helping to fill in the gaps of the state's beach testing program through the Blue Water Task Force (BWTF) program. With eight labs testing over 60 locations statewide, Surfrider volunteers are providing critical public health information to inform safe recreation at the beach and in coastal waterways.



Left: A volunteer collects a water sample in the Florida Keys. Right: Surfrider club and chapter members travel to the state capital of Tallahassee to meet with their elected officials.

The chapters have established their sampling schedules to complement the state's schedule and to test in locations that are not otherwise protected, such as kayak and standup paddleboard (SUP) launch sites in the intercoastal waterway and other areas that are favored by local families. See where the BWTF is testing in Florida and view all data at [bwtf.surfrider.org](http://bwtf.surfrider.org).

Surfrider chapters are also running Ocean Friendly Gardens programs to put nature-based solutions to work to protect clean water locally. The Space Coast Chapter has the longest-standing program in Florida and is transforming both private yards and public spaces into Ocean Friendly Gardens to reduce polluted runoff and restore resilient coastlines throughout the Indian River Lagoon watershed.

Florida has long struggled with chronic water pollution problems and now finds itself sitting on the front lines of a rapidly changing climate that will only exacerbate these existing issues. Surfrider is working strategically to protect public health and implement solutions to Florida's climate and clean water emergencies. Through our time-tested campaign planning (and victories), technical expertise, rigorous programming and grassroots network mobilization, Surfrider is building a more resilient future for Florida's ocean, waves and beaches for all people.





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